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COUNSELLING ON LIMITED PREOPERATIVE FASTING IN PAEDIATRIC AMBULATORY TONSILLECTOMY

by

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Maha-aisti toimii siten, että mahassa tuntuu jano.
Silloin pitää juoda suun kautta.

Niko 6v.

Seija Klemetti, Counselling on limited preoperative fasting in paediatric ambulatory tonsillectomy

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ABSTRACT

The purpose of this study was to examine preoperative nutritional face-to-face counselling of the parents by nurses on limited preoperative fasting and active preoperative nutrition: how the parents adopt the knowledge, and whether postoperative recovery of the paediatric ambulatory tonsillectomy patients is safely promoted. The data consisted of 116 families whose child of 4 – 10 years was admitted for ambulatory tonsillectomy. In the intervention group (n= 58) the parents and their children received face-to-face counselling on the child's preoperative fast and active preoperative nutrition. The recommended preoperative fasting times were 4h without solids and 2h without fluids. On the morning of surgery the child was encouraged to drink clear fluids on two occasions; the later portion being 2h before surgery. The control group (n= 58) received delivered preoperative information in written form according to the current practice without face-to-face counselling. The recommended preoperative fasting times for the children in the control group were the same as in the intervention group.

Parental knowledge of the child's fasting was measured by the knowledge test, which included The Amsterdam Preoperative Anxiety and Information Scale (APAIS). Measurements were performed before preoperative face-to-face counselling or delivering written information, and next morning, after the child's surgery. After the child's surgery the parents also assessed the quality of the information they had received. The child's postoperative pain, nausea, thirst and hunger were assessed by the children with a visual analogue scale (VAS) and by the parents and the nurses on a scale of 0 – 10. Assessments were performed 2h, 4h, 8h, and 24h after the child's surgery. A diary about the child's nutrition and pain medication was kept by the parents. Data were analysed statistically and using content analysis.

The parental knowledge after the child's surgery in both study groups was significantly increased but the anxiety of the control group was not relieved compared to their anxiety before the child's surgery. After the child's surgery, the higher the scores on the knowledge test obtained by the parents the less need-for-information and anxiety they felt. After the child's surgery significantly lower knowledge about the child's fasting was found, in both study groups, among the parents with lower basic education.

The children in the control group fasted preoperatively significantly longer. The children fasted perioperatively equally in solids, but in fluids the perioperative fasting time was significantly longer in the control group. In the beginning of the postoperative recovery the children in the intervention group were significantly less in pain. In both study groups, the highest scores in pain were reached 8h and in nausea and vomiting, 4h postoperatively. During the first eight postoperative hours the children were not thirsty or hungry, but in the intervention group the VAS scores remained on a low level during the first 24 postoperative hours. In the control group thirst and hunger began to increase, and following morning, the children in the control group, were significantly thirstier and hungrier than the children in the intervention group.

The preoperative face-to-face counselling of the parents on the child's limited preoperative fast is an effective way to increase parental knowledge and decrease their preoperative need-for-information and anxiety, and to safely promote the child's experience during the surgical process. Counselling on nutrition to all children before the start of the operation schedule may be the solution to limit prolonged preoperative fasting times in children. On the other hand, there is not always a possibility for face-to-face contact with the parents which means challenges for nursing research to explore other possibilities for interactive counselling of the parents.

Keywords: child, parents, preoperative counselling, preoperative fasting, safety, postoperative recovery, ambulatory surgery

Seija Klemetti, Rajoitetun preoperatiivisen paaston ohjaus lasten päiväkirurgisessa nielurisaleikkauksessa
Hoitotieteen laitos, Lääketieteellinen tiedekunta, Turun yliopisto 2010,
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TIIVISTELMÄ

Tutkimuksen tarkoituksena oli selvittää, onko sairaanhoitajan toteuttama, vanhempien interaktiivinen preoperatiivinen ohjaus lapsen rajoitettuun preoperatiiviseen paastoon ja aktiiviseen nesteyttämiseen turvallista, kuinka vanhemmat omaksuvat kyseistä tietoa ja edistääkö se turvallisesti lapsen postoperatiivista toipumista päiväkirurgisen nielurisaleikkauksen jälkeen. Aineisto koostui sadastakuudestoista perheestä, joiden lapsi, iältään 4 – 10 vuotta, oli kutsuttu päiväkirurgiseen nielurisaleikkaukseen. Koeryhmä (n= 58) ohjattiin interaktiivisesti lapsen preoperatiiviseen paastoon ja aktiiviseen preoperatiiviseen nesteyttämiseen. Lapsen suositellut preoperatiiviset paastoajat olivat: 4t syömättä ja 2t juomatta. Leikkauspäivän aamuna vanhemmat rohkaisivat lapsia juomaan annokset kirkkaita nesteitä kahteen otteeseen; jälkimmäinen annos 2t ennen leikkausta. Kontrolliryhmä (n= 58) sai preoperatiivisen ohjauksen kirjallisena ilman interaktiivista ohjausta; paastoajat olivat samat kuin koeryhmässä: 4t syömättä ja 2t juomatta.

Vanhempien tiedontasoja lapsen leikkaukseen liittyvästä paastosta mitattiin tietotestillä, joka sisälsi myös preoperatiivista tiedontarvetta ja ahdistusta mittaavan mittarin (The Amsterdam Preoperative Anxiety and Information scale, APAIS). Mittaukset suoritettiin ennen preoperatiivista ohjausta tai kirjallisten ohjeiden lähettämistä sekä lapsen leikkausta seuraavana päivänä. Lapsen leikkauksen jälkeen vanhemmat arvioivat myös heille välitetyn informaation tasoa. Lapsen postoperatiivista kipua, pahoinvointia, janoa ja nälkää lapset itse arvioivat VAS- asteikolla (10cm), ja vanhemmat ja sairaanhoitajat numeerisella 0 – 10 asteikolla. Mittaukset suoritettiin 2t, 4t, 8t, ja 24t lapsen leikkauksen jälkeen. Vanhemmat pitivät päiväkirjaa lapsen ravinnosta ja kipulääkityksestä. Aineisto analysoitiin sekä tilastollisesti että sisällön analyysillä.

Vanhempien tiedontaso lapsen leikkauksen jälkeen oli molemmissa ryhmissä merkitsevästi parantunut, mutta kontrolliryhmän vanhempien ahdistus ei ollut helpottanut verrattuna heidän ahdistukseensa ennen lapsen leikkausta. Mitä korkeammat pisteet vanhemmat saivat tietotestistä lapsen leikkauksen jälkeen sitä vähemmän he tunsivat tiedontarvetta ja ahdistusta. Merkitsevästi alhaisemmat pisteet tietotestistä oli vanhemmilla, joilla oli alempi peruskoulutus.

Kontrolliryhmän lapset paastosivat preoperatiivisesti merkitsevästi pitempään kuin koeryhmän lapset. Perioperatiivisesti lapset paastosivat kiinteästä ruuasta yhtä kauan, mutta nesteistä kontrolliryhmä merkitsevästi pitempään. Postoperatiivisen toipumisen alussa koeryhmän lapset olivat merkitsevästi kivuttomampia. Molemmissa ryhmissä lapset olivat kipeimpiä kahdeksan tuntia leikkauksesta ja pahoinvointisimpia neljä tuntia leikkauksesta. Ensimmäisen kahdeksan tunnin aikana leikkauksen jälkeen lapset eivät olleet janoisia tai nälkäisiä, mutta VAS- arvot koeryhmässä jäivät alhaisemmalle tasolle kuin kontrolliryhmässä 24 postoperatiivisen tunnin ajan. Leikkausta seuraavana aamuna kontrolliryhmän lapset olivat merkitsevästi janoisempia ja nälkäisempiä kuin interventioryhmän lapset.

Sairanhoitajan toteuttama vanhempien interaktiivinen preoperatiivinen ohjaus lapsen rajoitettuun preoperatiiviseen paastoon lisää vanhempien tiedontasoja ja vähentää preoperatiivista tiedontarvetta ja ahdistusta, ja turvallisesti parantaa lapsen kokemusta leikkausprosessin ja postoperatiivisen toipumisen aikana nielurisaleikkauksen jälkeen. Kaikkien leikkaukseen tulevien lasten nesteyttäminen kaksi tuntia ennen päivän ensimmäistä leikkausta voi olla ratkaisu lasten kohtuuttomien perioperatiivisten paastoajkojen estämiseksi. Aina ei kuitenkaan ole mahdollisuuksia vanhempien henkilökohtaiseen kohtaamiseen, mikä haastaa hoitotieteellisen tutkimuksen kartoittamaan muita mahdollisuuksia vanhempien interaktiiviseen ohjaukseen.

Avainsanat: lapsi, vanhemmat, preoperatiivinen ohjaus, preoperatiivinen paasto, turvallisuus, postoperatiivinen toipuminen, päiväkirurgia

TABLE OF CONTENTS

ABSTRACT	4
TIIVISTELMÄ	5
TABLE OF CONTENTS	6
LIST OF FIGURES, TABLES AND APPENDICES	8
ABBREVIATIONS	9
LIST OF ORIGINAL PAPERS	10
1 INTRODUCTION	11
2 REVIEW OF THE LITERATURE	14
2.1 Search of the literature.....	14
2.2 Preoperative counselling of parents in paediatric nursing.....	16
2.2.1 Preoperative fasting in paediatric surgical care.....	17
2.2.2 Safety of preoperative fasting in paediatric surgical care	18
2.3 Preoperative counselling of parents in paediatric ambulatory tonsillectomy...19	
2.3.1 Preoperative fasting in paediatric ambulatory tonsillectomy.....	21
2.3.2 Safety of preoperative fasting in paediatric ambulatory tonsillectomy..	22
2.4 Postoperative recovery in paediatric ambulatory tonsillectomy	23
2.5 Theoretical frame of the study.....	25
3 PURPOSE OF THE STUDY	27
4 MATERIAL AND METHODS	28
4.1 Sample	28
4.2 Intervention and control group.....	28
4.3 Instruments	30
4.4 Data collection.....	32
4.5 Data analysis.....	32
4.5 Ethical considerations	34

5 RESULTS.....	36
5.1 Characteristics of the participants	36
5.2 The effect of preoperative face-to-face counselling of parents by a nurse (Paper IV)	36
5.2.1 Change in parental knowledge, need-for-information and anxiety	37
5.2.2 Child's implemented preoperative fasting (Paper II, III, V)	39
5.2.3 Safety of child's limited preoperative fasting (Paper V).....	40
5.3 Child's postoperative recovery after limited preoperative fasting (Paper II, III).....	40
5.3.1 Child's recovery in hospital	43
5.3.2 Child's recovery at home	43
5.4 Summary of the results	44
6 DISCUSSION	46
6.1 Validity and reliability of the study	46
6.2 Ethics of the study	52
6.3 Research findings versus earlier studies	53
6.3.1 Parental knowledge, need-for-information and anxiety	53
6.3.2 Child's preoperative fasting	54
6.3.3 Child's safety	54
6.3.4 Child's postoperative recovery	55
6.4 Conclusions	58
6.5 Implications for clinical practice	59
6.6 Implications for further research	61
REFERENCES.....	63
ACKNOWLEDGEMENTS	70
ORIGINAL PAPERS.....	127

LIST OF FIGURES, TABLES AND APPENDICES

Figure 1.	Systematic search path of the included articles.....	15
Figure 2.	Theoretical frame of the study	26
Figure 3a.	The occasion and the placement of the intervention in surgical process at time of data collection	29
Figure 3b.	The occasion and the placement of the current preoperative information in surgical process at time of data collection	29
Figure 4.	Flowchart of data collection.....	33
Figure 5.	Children´s postoperative pain, nausea, thirst and hunger according to the children (n= 55).....	41
Figure 6.	Children´s postoperative pain, nausea, thirst and hunger according to the parents (n= 55).....	41
Figure 7.	Children´s postoperative pain, nausea, thirst and hunger according to the children (n= 52).....	42
Figure 8.	Children´s postoperative pain, nausea, thirst and hunger according to the parents (n= 52).....	42
Table 1.	Studies regarding incidence of primary haemorrhage after paediatric tonsillectomy	23
Table 2.	Operationalization of the concepts	31
Table 3.	Example of content analysis	34
Table 4.	Characteristics of the participants (n= 116).....	37
Table 5.	Effect of preoperative fasting information: the increase in parental knowledge and the decrease in preoperative need-for- information and anxiety before and after the child´s surgery (p- value) (Paper IV).....	38
Table 6.	Significance of the beneficial effects of counselling of the parents on the child´s limited preoperative fasting	45
Table 7.	Practical implications	60
Appendix 1.	Summary of the articles in the review of the literature	
Appendix 2.	Invitation to preoperative visit	
Appendix 3.	Written preoperative information of the intervention	
Appendix 4.	Invitation to the surgery	
Appendix 5.	Written preoperative information of the current practice	
Appendix 6.	Postoperative information for the home care of the child	
Appendix 7.	Parental characteristics and the knowledge test before surgery	
Appendix 8.	Knowledge test after surgery and parental experience about the information	
Appendix 9.	Characteristics and preoperative fasting of the child	
Appendix 10.	VAS- scale of the child	
Appendix 11.	Intraoperative assessment and assessments in the PACU	
Appendix 12.	Postoperative recovery of the child	
Appendix 13.	Study information	
Appendix 14.	Informed Consent of the parent and the child	

ABBREVIATIONS

APAIS	=	The Amsterdam preoperative anxiety and information scale
ENT	=	ear, nose and throat
et al.	=	et alia (and others)
hr	=	heart rate
iv	=	intravenous(ly)
NPO	=	nulla per os, nothing by mouth
NSAID	=	non-steroidal anti-inflammatory drug
PACU	=	postanaesthesia care unit
RCT	=	Royal College of Nursing
RR	=	Riva-Rocci, blood pressure
SD	=	standard deviation
TE	=	tonsillectomy
TEA	=	adenotonsillectomy
VAS	=	visual analogue scale

LIST OF ORIGINAL PAPERS

This thesis is based on the following publications, which are referred in the text by their Roman numerals from I – V.

- I** Klemetti S, Suominen T. 2008. Fasting in paediatric ambulatory surgery. *International Journal of Nursing Practice* 14, 47 – 56.
- II** Klemetti S, Kinnunen I, Suominen T, Antila H, Vahlberg T, Grenman R, Leino-Kilpi H. 2008. The effect of preoperative fasting on postoperative pain, nausea and vomiting in pediatric ambulatory tonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 73, 263 – 273.
- III** Klemetti S, Kinnunen I, Suominen T, Antila H, Vahlberg T, Grenman R, Leino-Kilpi H. 2009. The effect of preoperative fasting on postoperative thirst, hunger and oral intake in pediatric ambulatory tonsillectomy. *Journal of Clinical Nursing*. In press.
- IV** Klemetti S, Kinnunen I, Suominen T, Antila H, Vahlberg T, Grenman R, Leino-Kilpi H. 2009. The effect of preoperative nutritional face-to-face counseling about child's fasting on parental knowledge, preoperative need-for-information, and anxiety, in pediatric ambulatory tonsillectomy. *Patient Education and Counseling*. In press.
- V** Klemetti S, Kinnunen I, Suominen T, Antila H, Vahlberg T, Grenman R, Leino-Kilpi H. 2009. Active preoperative nutrition is safely implemented by the parents in pediatric ambulatory tonsillectomy. Submitted.

The publishers of the original articles have kindly granted their permission to reprint these articles in this thesis.

1 INTRODUCTION

The purpose of patient education is to improve and define the knowledge of the patient so that he/she is able to make health-care decisions and act on the basis of adequate information (Leino-Kilpi et al. 2000, Redmon 2001). Especially in ambulatory surgery, patient education is crucial for the safety and good quality of the patient care (Suominen & Leino-Kilpi 1997). In the literature review of this study educational terms, patient education, counselling, knowledge, information, guidelines and instructions have been used according to their use by the referred authors. In this study, information signifies, the material which is provided by counselling (Leino-Kilpi et al. 2000), and knowledge the level in which the patients have adopted the information (Miller et al. 1999). The term counselling includes a deeper interactive process (Poskiparta et al. 1998) and is therefore used to describe the educational face-to-face situation. Guidelines include instructions about recommended practices (RCN 2005).

Providing information to the patients and the parents is a multiprofessional assignment which factor is emphasized in ambulatory settings where nurses may have more opportunities to discussions with the patients and their families. (Bernier et al. 2003.) Patients and their families need good and thorough information to take care of themselves or other persons, and a dialogue with nurses offers possibilities to ask more questions. (Suhonen & Leino-Kilpi 2006.) Nurses should see and understand patients' need-for-information and take into account the level of their knowledge and individual features and values. Individual patient education can be enhanced by an interactive relationship (Virtanen et al. 2007).

An interactive relationship between patients and nurses is significant in ambulatory surgery when the preparation and recovery of the patients take place at home, which means that the patients themselves or the parents of paediatric patients need understandable and updated knowledge about pre- and postoperative instructions and practices (Bernier et al. 2003). Parents are the child's advocates and principally adopt information regarding the child's care (Carter et al. 2002). The European Association for children in Hospital (EACH 1988) and the Ministry of Social Affairs and Health in Finland (STM 2008a), however, have defined for the children their own rights to information and participation according to their age and maturity. This principle is also aim in health care practice (Ellerton & Merriam 1994, Kain et al. 1998, Hallström & Elander 2004, Smith & Callery 2004, Pelander 2008). However, parents of children undergoing paediatric surgery may experience greater levels of need-for-information and anxiety; parental anxiety may also influence the child's coping (Miller et al. 1999). Preoperative information of the families may reduce the negative outcomes in the child's surgical care (Salonen et al. 2002). On the other hand, despite repeated verbal and written information, there may be a need for

further advice (Sjöling et al. 2003, Valtonen et al. 2004). Further advice may be needed by the parents who are going to implement their child's preoperative fast at home. Preoperative fasting belongs to the preparatory actions in surgical care and is attended to by nurses in the case of inpatients. However, in ambulatory settings, the participation of parents is much dependent on support and encouragement by nurses. (Green et al. 1996, Simons et al. 2001).

The responsibility of health care professionals for patients' safety is crucial, and the safe duration of the preoperative fast has been under discussion during recent decades. Already in 1833, Dr. William Beaumont described how solids and fluids empty from the stomach; solids do so in five hours and fluids almost immediately. However, in 1946, Curtis Mendelson reported a high incidence of pulmonary aspiration among obstetric patients in the context of general anaesthesia, and the practice of NPO (*nulla per os*, nothing by mouth after midnight) was originated. NPO has been a sustainable principle in surgical care, but was questioned in the 1980s and 1990s. The critical limits of safe acidity and volume of stomach contents ($\text{pH} \geq 2.5$ and 0.4ml / kg or less) were criticized because these recommendations were based on the results of studies performed in animals (James et al. 1984, Raidoo et al. 1990). Subsequent studies have shown that clear fluids even promote the emptying of the stomach and cause very little changes in its acidity (Green et al. 1996, Soreide et al. 2005). Furthermore, children do not necessarily achieve these values regardless of the duration of their preoperative fast (Ingebo et al. 1997). At present, long-lasting preoperative fasting is mostly considered uncomfortable, causing thirst, hunger, irritation and distress for the patients and may also lead to dehydration, especially in children (RCN 2005, Cook-Sather & Litman 2006). However, many children in ambulatory surgery are fasting preoperatively for several hours despite written instructions to allow clear fluids until two hours before surgery (Ewah et al. 2006). If even health-care professionals have had their doubts about the safety of the child's limited preoperative fasting, it is no wonder that the parents of the children in ambulatory surgery are confused and do not follow shorter instructions, either. (Kramer 2000.)

Instructions about the postoperative ending of the child's fast are also important, because the child's preoperative fasting continues postoperatively until the child is able to take nutrition by mouth. Long-lasting preoperative fasting has been shown to have a connection with postoperative nausea (Smith et al 1997). If problems in the child's postoperative oral intake occur, this may lead to an unnecessarily long period of perioperative fast. (RCN 2005.) The postoperative ending of the child's fast and resuming a normal diet may also occur at home when the parents are dependent on the information they have received before the child's discharge. In addition to information concerning the child's preoperative fast, parents need knowledge about the proper duration of the child's fast and its postoperative ending. (Schreiner et al. 1992.) Resuming a normal diet is crucial

for the child's recovery, e.g. in paediatric tonsillectomy patients (Warnock & Lander 1998).

Ambulatory surgery has increased in ear-, nose- and throat surgery (ENT). In 1997, 34% of all ENT procedures in Finland were performed in ambulatory settings, in 2003, 54.2% and in 2007 69.2 %. At present, even 14430 tonsillectomies and/or adenoidectomies are performed per year (Stakes 2008), and these procedures are commonly carried out in children in ambulatory surgery. The wound of the children who has undergone tonsillectomy is in the throat and therefore they have postoperative difficulties in nutrition because of pain, nausea and vomiting. (Kokki & Salonen 2002, Kanerva et al. 2003, Valtonen et al. 2004.)

If the postoperative recovery of the children can be safely promoted by interactive preoperative education of the parents concerning the child's limited preoperative fast, it is worth closer examination. The purpose of this study was to examine how the parents whose child is about to undergo ambulatory tonsillectomy adopt the knowledge about the child's limited preoperative fast and active preoperative nutrition, and whether postoperative recovery of the paediatric ambulatory tonsillectomy patients is safely promoted by preoperative nutritional face-to-face counselling of the parents.

2 REVIEW OF THE LITERATURE

2.1 Search of the literature

The aim of the literature review was to gain a picture of how preoperative fasting in paediatric tonsillectomy has been studied. In ambulatory surgery, preoperative fasting, as well as postoperative nutrition of the child, is implemented by the parents. Therefore, the aim of this literature review, in addition, was to examine how parents have been counselled on fasting regimens during their child's tonsillectomy procedure.

The systematic search of the literature (Figure 1) for the present study covered the time span from 1980 to 2009. The review is based on the Medline and Cinahl databases and a manual search by the researcher. The Medline was used as a basic database and, from the Cinahl additional articles were searched with the search limit "Exclude Medline records". Other search limits in both databases were "English language", "abstract" and "full text". The manual search included articles found from the references of the examined articles from the databases and the related literature. The acceptance criteria of full texts were complete conception, acceptable description and essential knowledge (Appendix 1).

In this literature search, "child* and tonsillect* with nutritional terms" did not yield studies concerning preoperative fasting in children undergoing tonsillectomy. Thus, the conclusion was drawn that these children are fasting preoperatively in the same way as other children in surgical care. A new search without the term "tonsillect*" was performed in Medline because Medline had been, in this search, the more productive database. The criteria for inclusion of abstracts for closer examination of their full texts were acceptable description and mention of child's nutrition or fluid balance. The literature search to examine how parents and family have been counselled on fasting regimens was also performed. The literature search "family terms and tonsillect* and fasting with educational terms" yielded few studies which had educational perspective on child's tonsillectomy procedure and met the criteria for inclusion of full texts. However, child's fasting was not mentioned. A new search with "family terms and preop* and nursing" was performed to explore the principals of preoperative patient education in paediatric nursing.

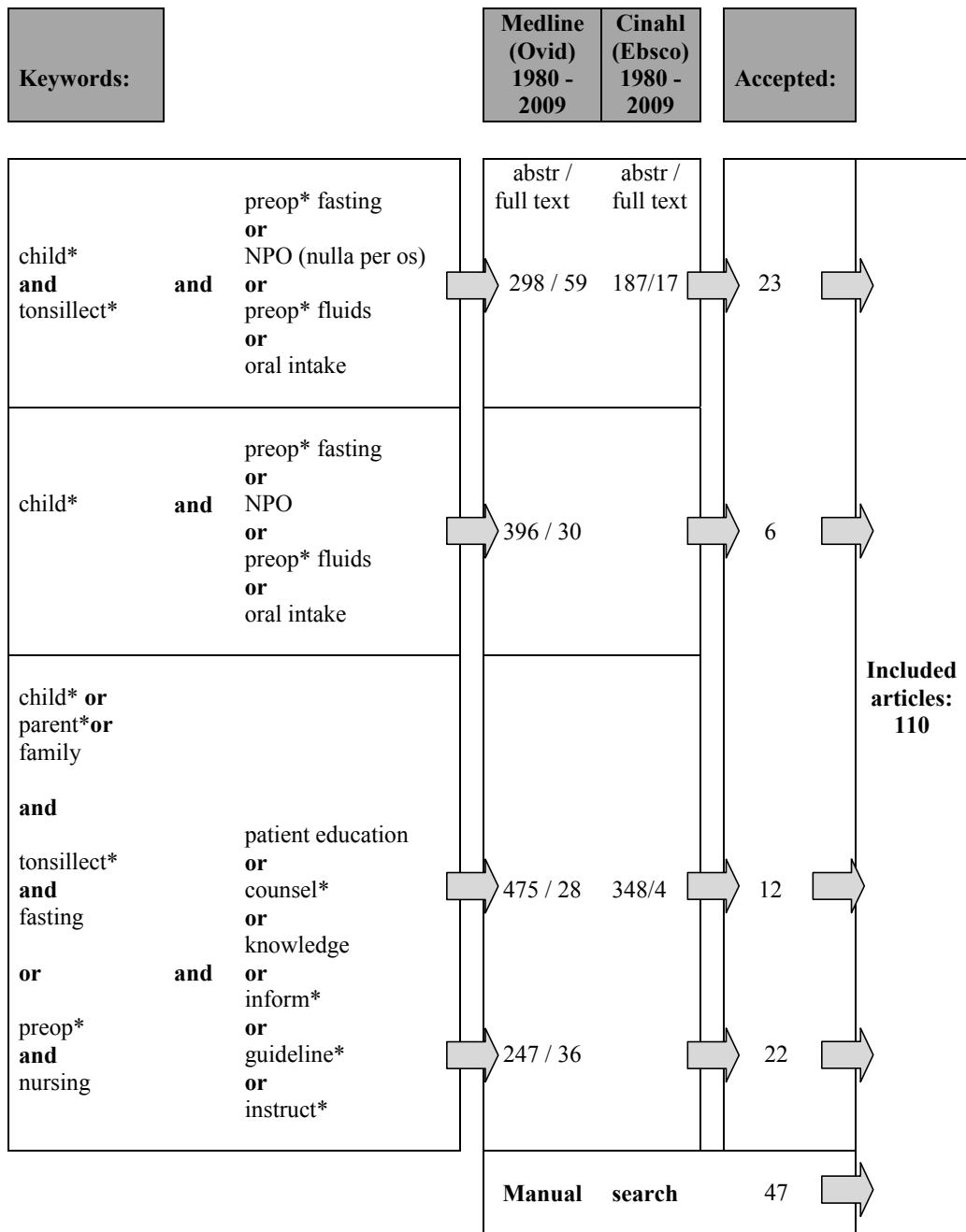


Figure 1. Systematic search path of the included articles

In this literature search no studies concerning preoperative fasting in children undergoing tonsillectomy were found, and it seems that the educational perspective on the coping of the families with the fasting of the child undergoing tonsillectomy has not been studied, either. The result of the literature search consists mainly of the studies which are in touch with child’s fasting but child’s fasting has not been the focus of the studies. The literature

search to explore the principals of preoperative patient education in paediatric nursing, in general, was performed to describe requirements which are desired in counselling of the parents on child's fasting.

2.2 Preoperative counselling of parents in paediatric nursing

Patient education consists not only of providing information; it has to result in a deeper understanding of the patient's knowledge, and must give a possibility to make reliable decisions on the basis of adequate information (Leino–Kilpi et al. 2000). Effective patient education produces increased patient satisfaction, increased quality of health, decreased anxiety, promotion of adherence to the plan of care, better continuity of care, decreased potential complications, and maximized independence (Bastable 2006, Gilmartin & Wright 2007). The term counselling can be defined as an interactive educational process which is not only distributing information but also an opportunity to learn. Reflective questions tend to ensure patient-centered conversation and may improve effectiveness of health counselling. (Poskiparta et al. 1998, Pieper et al. 2006.) Nurses should realize their own personal role and how they are able to influence on patients' consciousness through their own activities (Simons et al. 2001, Carter et al. 2002, Sjöling et al. 2003, Pieper et al. 2006, Suhonen & Leino-Kilpi 2006, Virtanen et al. 2007).

In paediatric nursing care, the parents are their child's advocates and are provided with the information concerning their child's care (Smith & Callery 2004). Parental participation means that the parents are well educated with sufficient information, and their role is clarified as a part of the child's care (Kristensson-Hallström 1999, Simons et al. 2001). Parental anxiety may also increase the child's preoperative anxiety, especially in the parents of smaller children. If the child has undergone surgery in the past, this seems to relieve parental anxiety. (Litman et al. 1996.) However, parents in paediatric surgery experience greater levels of need-for-information and anxiety than those adults who are undergoing surgery themselves (Miller et al. 1999). On the other hand, even parents whose child has been in surgical care before, need additional information, because there are studies showing anxiety also in experienced parents (Ellerton & Merriam 1994).

Parents expect to be educated with adequate preoperative information (Timmins 2006) but do not necessarily expect to get it in a certain form. Parental satisfaction with information distributed is increased when it is given in written and verbal form. Verbal information from health-care professionals is desired. A videotape has also been shown to be an effective way for the parents (Miller et al. 1999, McEven et al. 2007) but using the Internet as a main source of information needs to be explored because of its potential misleading information (Lewis 2003), and because parents seem to trust the Internet (Semere et al. 2003). However, more effective information has not been shown to increase anxiety in parents. (Bellew et al. 2002.) Parents who have been well

informed take part in the child's care more actively than usual. With information and the participation of the parents, problems in the child's care can be reduced. (Kristensson-Hallström et al. 1997, Hatava et al. 2000, Simons et al. 2001, Brewer 2006, Pieper et al. 2006, Li et al. 2007.)

Although according to some studies (Litman et al. 1996, Wisselo et al. 2004), parents' education does not have an effect on their ability to adopt information, it must be realized that parents may not have, e.g. experience about hospital care and misunderstandings may occur (Smith & Callery 2004). Furthermore, in the case of younger children, the parental share in the preparation of the children is greater. Preoperative preparation and information of both, children and parents, by health-care professionals decreases their anxiety and increases their ability to act in the child's surgical process (Ellerton & Merriam 1994, Miller et al. 1999).

2.2.1 Preoperative fasting in paediatric surgical care

Patients in surgical care are obliged to be without per oral nutrition for varying periods. Fasting begins before surgery and may continue for several hours afterwards. Especially for children this may be uncomfortable. However, preoperative fasting is preparative action for surgical care and needed for the safety of the patients. (Green et al. 1996, Engelhardt & Crawford 2001.)

The purpose of preoperative fasting in surgical care is to prevent the risk of aspiration of stomach contents during the surgical procedure. Recommended preoperative fasting periods have been up to twelve hours. However, research has led to increasing change in fasting practices and guidelines: the current recommended fasting times are shorter (Fasting et al. 1998). Children are allowed clear fluids two hours (Sethi et al. 1999, Ferrari et al. 2000), breast milk four hours and formula milk and solid food 5-6 hours before surgery (Association of Paediatric Anaesthetists 1996, Emerson et al. 1998); with consideration, four hours before surgery (Engelhardt & Crawford 2001).

Although shorter preoperative fasting time has become more common, especially in children, cancellations or delays of surgical procedures due to inappropriate oral intake have not increased (Gilbert et al. 1995). Shorter preoperative fasting guidelines have not affected parental compliance with fasting requirements (Murphy et al. 2000). In fact, the specific prescription of clear fluids at a specific time may improve the control of preoperative fasting times in children (Castillo-Zamora et al. 2005), although the parents do not necessarily consider the shorter preoperative fasting instructions difficult to carry out (Schreiner et al. 1990). However, several parents fast with their child, maybe also because of their anxiety, and this may cause problems in their well-being. The parents should be encouraged to eat and drink, at least when their child is undergoing the operation. (Faroog et al. 2008.)

Preoperative fasting of the child continues postoperatively. The traditional regimen for postoperative ending of the child's fast in surgical care has been that patients are able at least to drink before discharge. The purpose has been to ensure that per oral fluids do not lead to nausea and vomiting, and that proper fluid intake of the patients is adequate also at home. (Schreiner et al. 1992.) Ambulatory surgery has become more common and the criteria for discharge of the patients have been under consideration, especially in children. The ability to drink has been under consideration and opinions have varied. (Schreiner et al. 1992, Kearney et al. 1998.) If a child does not drink before discharge, it may cause dizziness and dehydration (Nicklaus & Steinie 1995). On the other hand, mandatory drinking before discharge may cause nausea and vomiting in the child and delay discharge (Messner & Barbita 1997, Kearney et al. 1998, Tabae et al. 2006).

Postoperative nausea and vomiting have been shown to be more common in children who have been required to drink. Moreover, there is no guarantee that a child would not vomit at home after discharge although he/she has not been nauseous in the hospital. Children should be allowed, not required, to drink before discharge. If there is any doubt about the child's unwillingness regarding oral intake during several hours, adequate fluid balance can be ensured by intravenous fluids before discharge. (Schreiner et al. 1992.) Oral fluids can be offered when the child is fully awake and there is no reason to postpone the child's oral intake. Frequent offering of small amounts of fluids and solids increases the total amount of the child's oral intake. (Kaan et al. 2006.) However, it is safe to discharge children before normal oral fluid intake (Schreiner et al. 1992, Messner & Barbita 1997).

2.2.2 Safety of preoperative fasting in paediatric surgical care

Safety of the families is in the focus of paediatric nursing. The children may feel e.g. depression, malaise, tiredness, weakness, hunger, thirst, anger, reluctance, behaviour changes, pain and nausea. The more the situation differs from the normal, the more anxiety they may feel. (Hausel et al. 2001, Hamers et al. 2002, Hallström & Elander 2004, Keidan et al. 2004.)

Parental anxiety may also increase the child's preoperative anxiety, especially in the parents of smaller children. (Litman et al. 1996.) Any intervention which reduces problems and parental anxiety will also reduce the child's anxiety (McEven et al. 2007). Children need their parents to be their advocates but they also have the need and the right to be provided with information about their own care. However, the parents and health-care professionals have the power to facilitate or constrain children's participation. Moreover, some health-care professionals seem to have doubts about the appropriateness of sharing information and decisions with children and children learn not to interrupt parents and health-care professionals' communication. (Coyne 2008.) It seems that children are not always provided with information by health-care professionals. The main sources of their preoperative information may be, besides their parents, leaflets designed for parents,

television, friends and relatives. Information should be presented directly to the children, according to their age, as part of their preoperative preparation. (Smith & Callery 2004.)

The implementation of child's preoperative fast may affect child's preoperative experience. Aspiration is a severe complication, but despite this fact, changes to preoperative fasting guidelines were long delayed because of fears related to aspiration (Green et al. 1996, Ferrari et al 1999) based on the assumption that long periods of fasting will reduce the volume and acidity of stomach contents and thereby the risk of pneumonia caused by regurgitation and aspiration (Green et al. 1996). However, neither gastric fluid pH nor the volume correlate with the duration of fasting (Crawford et al. 1990, Kawana et al. 2000, Hausel et al. 2001, Castillo-Zamora et al. 2005, Senayli et al. 2007). In paediatric ambulatory surgery, children may fast preoperatively for excessively long periods, and younger children even longer than older children (Veall et al. 1995) although the benefits of the shorter fasting times have been shown (Veall et al. 1995, Hausel et al. 2001, Castillo-Zamora et al. 2005). The complications related to fasting have not increased, and the patients have been satisfied (Crawford et al. 1990, Fasting et al. 1998, Castillo-Zamora et al. 2005). Moreover, an irritable child is more difficult to sedate (Keidan et al. 2004). Although preoperative hydration does not radically affect a child's blood counts (Maekawa et al. 1993, Moyao-Garcia et al. 2001, Senayli et al. 2007), prolonged preoperative fasting may be a risk for hypotension during anaesthesia and cause unexpected changes in blood pressure (Friesen et al. 2002).

Due to these factors, a decision has been taken to revise the guidelines for surgical care (Emerson et al. 1998, Ferrari et al. 2000). Clear fluids, such as water and apple juice, promote gastric emptying; causing very little change in gastric acidity (Schreiner et al. 1990) and, according to the parents, the children have not been so irritable and have tolerated the surgical experience better (Schreiner et al. 1990, Hausel et al. 2001). In some cases, it has been thought that chewing gum would relieve the child's preoperative fast. However, chewing gum preoperatively is not recommended because it may increase gastric volume (Schoenfelder et al. 2006). Moreover, according to the changed guidelines, some subgroups need their own fasting instructions because of their increased risk of regurgitation and aspiration, e.g. children with diabetes, stomach and oesophageal problems (Emerson et al. 1998). However, practices regarding preoperative preparation, like fasting guidelines, should be the same in elective inpatient surgery and in ambulatory surgery (Pandit et al. 2000).

3.3 Preoperative counselling of parents in paediatric ambulatory tonsillectomy

Anxiety could be reduced and satisfaction increased also prior to ENT surgery by preoperative information (Hatava et al. 2000). Different methods such as children's

book, leaflets and the Internet (Felder-Puig et al. 2002, Wisselo et al. 2004, Boston et al. 2005) have been examined as supporting methods in information of the parents, but informing especially about the child's preoperative fasting before tonsillectomy has not been in the focus of research interest. Therefore, preoperative informing about the child's preoperative fasting is also assumed to be congruent with prevalent preoperative fasting information as a part of paediatric surgery.

The effects of a children's book on pre- and postoperative anxiety and distress in children and their mothers in ENT surgery have been studied (Felder-Puig et al. 2002): mothers felt themselves better informed, they co-operated better and were less anxious prior to surgery, as were their children. Also the Internet regarding preoperative information about the child's ENT surgery has been an interest of research (Boston et al. 2005). According to parents' opinion, Internet information was understandable and helpful, but only few discussed the information with the child's surgeon although the information influenced their decision about the child's care. The most interesting things according to the parents, in the study by Boston et al. (2005), were the child's surgical procedure, risks and complications, recovery and postoperative care, and indications for surgery. The child's fasting was not specially mentioned. In the study by Wisselo et al. (2004), the parents wanted to know more about induction, side-effects, emergence from anaesthesia, and pain relief. The parents were preoperatively most concerned about postoperative pain, anaesthesia, and emergence from anaesthesia, nausea and induction. Again, the child's fasting was not specifically mentioned.

The preferred timing of preoperative information was at least a week before surgery in the study of Wisselo et al. (2004). There were no statistically significant differences in the answers whether the parents were information avoiders or information seekers. Most of the parents wanted a leaflet or a preoperative visit. In the study of Spencer and Franck (2005), better knowledge was found in the parents who had received a leaflet within two weeks before the child's surgery, and the greatest improvement in parental knowledge was related to the reasons why children should fast before surgery and the purpose of an intravenous line. There were no differences, in the study of Spencer and Franck (2005), in parental anxiety or satisfaction concerning the timing or method through which they received information. The parents also have preoperative expectations about the child's tonsillectomy as a remedy (Wolfensberger et al. 2000): most prefer the postoperative outcome when at least one of the child's additional symptoms caused by tonsils is cured.

Preoperative information of the parents about the child's postoperative care and well-being is critically important, and parents also have to be informed about the risks of unexpected prolonged hospitalizations (Zhao & Berkowitz 2006). Furthermore, also children need preoperative information about their postoperative state because children

cope better if they have a preoperative conception of their surgical procedure (Sutters et al. 2007). The most significant obstacles after the child's tonsillectomy, at home, are difficulties in oral intake due to pain. Some parents urge and force the child to eat and take fluids. Thus, there is a need for clear instructions regarding the postoperative diet. (Hamers et al. 2002.) However, the importance of parental discretion should not be underestimated in determining the child's postoperative diet, either (Brodsky et al. 1993).

In some cases, parents feel uncertainty at home after the child's tonsillectomy and consult their general practitioner. In the study by Kanerva et al. (2003), one of the most significant reasons for parental consultations was poor oral intake. Although all parents thought that it was better for the child to go home, some parents later even regretted the discharge on the day of surgery. A sore throat and vomiting were important parental concerns after discharge in the study by Le et al. (2007). However, from the postoperative point of view, most of the parents, in the study by Le et al (2007), considered preoperative preparation adequate. The parents feel comfortable and are satisfied with telephone follow-up calls by the professionals after discharge (Pendeville et al. 2000, Rosbe et al. 2000).

Although parents do not always exactly follow the instructions they have received concerning the child's postoperative care after discharge (Moir et al. 2000), they are valuable partners in an ambulatory setting and should be supported in their partnership (Tourigny et al. 2005). Parents have successfully taken part, as a source of information, in many studies regarding the child's care in ENT surgery (Colreavy et al. 1999, Hulcrantz et al. 1999, Moir et al. 2000, Rømsing et al. 2000, Temple & Timms 2001, D'Eredita & Marsh 2004, Korkmaz et al. 2008), which confirms that parents are able to adopt the information regarding the child's surgical care and are suitable partners for the health-care professionals (Pendeville et al. 2000).

2.3.1 Preoperative fasting in paediatric ambulatory tonsillectomy

According to the present literature search, preoperative fasting especially in paediatric tonsillectomy patients has not been studied. However, paediatric tonsillectomy patients might also have been included in materials collected for studies evaluating preoperative fasting in children, e.g. under the terms "paediatric minor surgery" and "paediatric elective surgery" (e.g. Crawford et al. 1990, Maekawa et al. 1993, Gilbert et al. 1995). In addition, studies concerning the child's recovery after tonsillectomy have mentioned how children have been permitted to take solids and fluids, but how the preoperative fast was actually implemented was not reported. It seems that preoperative fasting times before paediatric tonsillectomy may vary in solids from NPO to eight hours before surgery and in fluids from NPO to 2 - 3 hours before surgery. (Lawhorn et al. 1996, Elhakim et al. 2003, Tabaee et al. 2006, Fazel et al. 2007.)

Limited preoperative fasting times and preoperative fluids seem to promote preoperative well-being and reduce postoperative nausea and vomiting in children (Treston et al. 2004, Castillo-Zamora et al. 2005, Adanir et al. 2008). Thus, fasting in paediatric tonsillectomy should be seen from a perioperative perspective (Gilbert et al. 1995, Veall et al. 1995, Friesen et al. 2002). However, according to this literature search, the effects of preoperative fasting on the child's postoperative recovery after tonsillectomy have not been studied. It seems that recommendations for preoperative fasting are followed in paediatric tonsillectomy patients in the same way as in paediatric surgery in general (Lawhorn et al. 1996, Elhakim et al. 2003, Tabae et al. 2006, Fazel et al. 2007).

2.3.2 Safety of preoperative fasting in paediatric ambulatory tonsillectomy

Safety of the paediatric ambulatory tonsillectomy has been under consideration. Previous research has shown that children undergoing tonsillectomy / adenotonsillectomy suffer from significant postoperative pain, nausea and vomiting. (Kokki & Salonen 2002, Kanerva et al. 2003.) When changes in the preoperative fasting practice have been delayed mainly because of fear of aspiration of the gastric contents (Ferrari et al. 2000), limited preoperative fasting may have been considered to cause more threat than benefit for the children undergoing tonsillectomy / adenotonsillectomy, especially in paediatric ambulatory tonsillectomy when the parents are taking care of their child's preoperative fasting (Schreiner et al 1990). Therefore, adequate parental knowledge will ensure the child's safety. The safety of the child's limited preoperative fasting requires that the parents adopt the knowledge about child's preoperative fast and implement the child's active preoperative nutrition adequately. However, the parents have not considered shorter fasting instructions difficult to follow and several studies have shown shorter fasting guidelines to be safe and beneficial (Schreiner et al. 1990, Fasting et al. 1998, Ferrari et al. 2000, Castillo-Zamora et al. 2005); neither aspiration nor other complications related to the fasting time have increased, and the patients have been more satisfied (Fasting et al. 1998, Castillo-Zamora et al. 2005).

Intra- and postoperative bleeding are potential complications in tonsillectomy (Chhibber et al. 1999, Alatas et al. 2006) and blood seeping from the wound and collecting in the stomach may increase nausea and vomiting (Chhibber et al. 1999), and may even be considered as a risk for aspiration (Ferrari et al. 2000). However, the incidence of primary haemorrhage, bleeding during the immediate postoperative hours, after paediatric adenotonsillectomy is reported to be relatively low (Table 1).

Table 1. Studies regarding incidence of primary haemorrhage after paediatric tonsillectomy

	Sample n	Age (years)	Incidence of primary haemorrhage n (%)
Nicklaus et al. 1995	233	2 – 17	4 (1.7)
Lacarte 1999	426	3 – 15	4 (0.95)
Holzmann et al. 2000	63	mean 6.1	0 (0)
Windfuhr & Chen 2001	1467	<6	20 (1.36)
	863	6 – 12	23 (2.66)
Prim et al. 2003	1516	< 14	13 (0.8)
Asiri et al. 2006	244	< 13	3 (1.23)

Routine postoperative fluid replacement after tonsillectomy (Wilson et al. 1990, Egeli et al. 2004), even after discharge at home (Park & Kim 2002), has been considered unnecessary. The level of blood loss does not require replacement, and the feeling of thirst may even tempt the child to oral intake in spite of the pain (Wilson et al. 1990).

2.4 Postoperative recovery in paediatric ambulatory tonsillectomy

Tonsillectomy may cause postoperative problems in oral intake, resulting in a continued fast after surgery (Zhao & Berkowitz 2006). Pain, nausea, vomiting, bleeding, and poor postoperative oral intake are emphasized by the site of the wound. If a child is in pain or nauseous it will affect his/her oral intake. (Sutters & Miaskowski 1997, Holzmann et al. 2000, Hamers et al. 2002, Huth & Broome 2007.)

Intervention studies in the context of tonsillectomy have used “oral intake” as an additional variable in measuring postoperative effects of interventions, which are supposed to have an effect on postoperative pain and nausea. Dexamethasone is reported to have a possible beneficial effect in preventing postoperative pain and nausea and in promoting oral intake after tonsillectomy (Holt et al. 2000, Kaan et al. 2006, Fazel et al. 2007, Kim et al. 2007). Premedication before induction has been shown to have an effect on the timing and quality of the first oral intake, but not on the incidence of postoperative vomiting (Elhakim et al. 2003). The effect of antiemetics have been studied (Lawhorn et al. 1996), as well as the effects of pain medication, which has been shown to promote postoperative oral intake (Moir et al. 2000, Pendeville et al. 2000). However, choosing a suitable medicine is important (Moir et al. 2000, Rømsing et al. 2000, Pop et al. 2007). The use of local anaesthetic on the wound area has been studied as a way of reducing postoperative pain and promoting oral intake without greater benefit (Nikandish et al. 2008). The use of prophylactic antibiotics has its supporters (Telian et al. 1986), but there are also studies that do not consider this tendency significant (Colreavy et al. 1999). The choice of surgical technology seems to have an effect on the child’s recovery and oral intake after tonsillectomy, and this has been widely studied (Hultcrantz et al. 1999, Temple & Timms 2001, D’Eredita & Marsh 2004, Derkay et al. 2006, Sobol et

al. 2006, Park et al. 2007, Korkmaz et al. 2008). As a non-pharmacological method in reducing nausea, e.g. electrical acupoint stimulation has been studied and shown to have a possible benefit in the child (Kabalak et al. 2005).

Despite obvious postoperative pain, nausea and vomiting, and poor oral intake, paediatric ambulatory tonsillectomy has been regarded as a safe procedure (Lacarte 1999, Windfuhr & Chen 2001, Asiri et al. 2006). The incidence of complications has been low (Lacarte 1999, Asiri et al. 2006), although the preoperative fasting time in children undergoing tonsillectomy seems to vary from NPO to a few hours before surgery. Complications due to preoperative fasting time have not occurred (Lawhorn et al. 1996, Elhakim et al. 2003, Tabaee et al. 2006, Fazel et al. 2007). The main criterion for the discharge of paediatric tonsillectomy patients has been the ability to drink. However, it is not necessary to force the child to drink; if they do not drink, children will be less likely to feel nauseous and therefore they will be discharged earlier. (Nicklaus & Steinie 1995, Messner & Barbita 1997, Tabaee et al. 2006.) Poor oral intake after ambulatory tonsillectomy, on the other hand, is a common reason for the child's readmission (Werle et al. 2003).

The effects of "restricted" and "non-restricted" postoperative diet on the recovery after tonsillectomy have been compared, and no significant differences between the groups in pain, activity or return to normal diet were found; no benefits were reached by limiting diet instructions (Brodsky et al. 1993). Severe restrictions on the postoperative diet are considered unnecessary as the children will recover sooner if allowed to choose what to eat from their normal diet (Cook et al. 1992, Hall & Brodsky 1995). However, cold liquid/food by mouth has been shown to provide pain relief (Sutters et al 2007), and small amounts of fluids and soft diets to increase the total amount of postoperative oral intake (Thomas et al. 1995, Kaan et al 2006). In addition, encouragement of oral fluid intake is better than forcing (Thomas et al. 1995). Other per oral interventions to promote the child's postoperative oral intake such as mastication with chewing gum, have also been studied, but they have been found to even delay the return to a normal diet by causing more pain because of frequent swallowing (Hanif & Frosh 1999), although honey has been found to help causing in pain relief (Ozlugedik et al. 2006).

In principal, the recommendations for postoperative ending of the fast in paediatric ambulatory tonsillectomy follow the prevailing instructions about child's postoperative care. However, the critical site of the wound in tonsillectomy may cause specific concerns which have to be taken into account in the implementation of the ending of the child's fast. (Sutters & Miaskowski 1997, Chhibber et al. 1999, Holzmann et al. 2000, Hamers et al. 2002, Alatas et al. 2006, Huth & Broome 2007.) As a result of this literature search, the effect of preoperative counselling on postoperative recovery in paediatric ambulatory tonsillectomy has not widely been studied from the perspective of postoperative pain, nausea, oral intake or parental knowledge and anxiety.

2.5 Theoretical frame of the study

Paediatric ambulatory tonsillectomy patients seem to fast preoperatively in the same way as other paediatric ambulatory surgery patients, even though their recovery regarding nutrition is much more complicated because of the wound area. If this prolonged preoperative fast persists postoperatively, children may suffer from pain, nausea, poor oral intake, dehydration and feel of anxiousness. It seems that there is no single, superior way to make children feel better, but a combination of interventions is needed. One of those interventions might be active preoperative fluid intake and limiting the child's fast to the necessary minimum. In ambulatory surgery this procedure requires the initiation of parents into implementation of the child's preoperative fasting and its effects. Perioperative fasting is the time during which a patient is nil by mouth before surgery, and continues until the patient regains consciousness and is able to take fluids orally (RCN 2005).

The review of earlier research reports on fasting in paediatric tonsillectomy patients showed that prolonged preoperative fasting correlates with postoperative pain and nausea. However, no studies were found which specifically addressed the preoperative fasting in children before tonsillectomy. Therefore, a preliminary interview study, to explore experiences of the parents and the children, about child's fasting in child's pharyngeal ENT- surgery was performed (Paper I).

However, further studies are indicated on the effect of preoperative fasting on postoperative recovery after paediatric tonsillectomy. If limiting the duration of preoperative fasting by counselling of the parents on the child's active preoperative nutrition is safe, which means that the parental knowledge is adequate and they implement adequately the child's active preoperative nutrition without any complications or threats for the child's safety, intervention is worth of examination. Furthermore, if limited preoperative fasting reduces the child's postoperative pain and nausea in the children after tonsillectomy, these measures will also promote their postoperative oral intake (Figure 2).

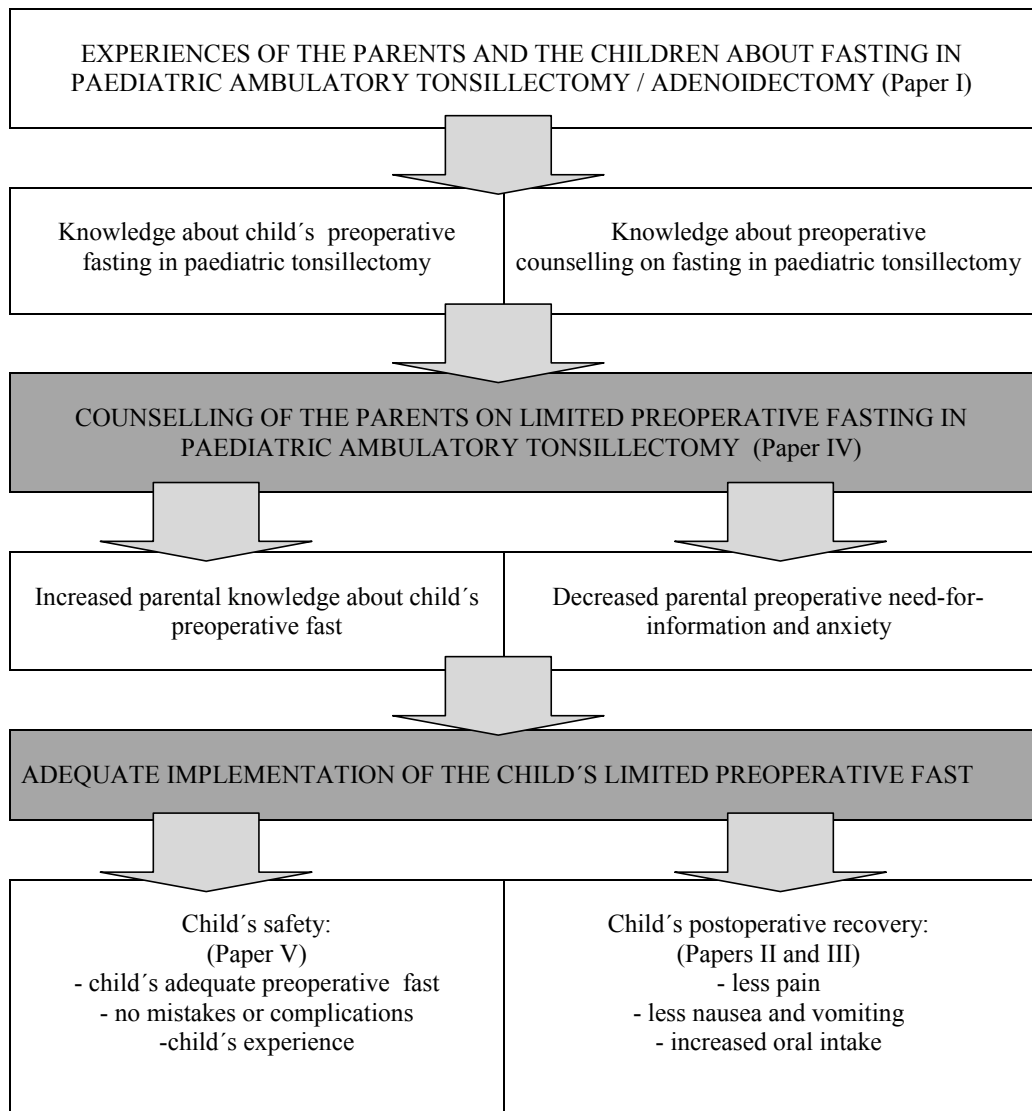


Figure 2. Theoretical frame of the study

3 PURPOSE OF THE STUDY

The purpose of this study was to examine preoperative nutritional face-to-face counselling of the parents by nurses on limited preoperative fasting and active preoperative nutrition: how the parents adopt the knowledge, and whether postoperative recovery of the paediatric ambulatory tonsillectomy patients is safely promoted by preoperative nutritional face-to-face counselling of the parents. The aim of the study was to produce knowledge about preoperative counselling of the parents and find a method to promote the child's postoperative recovery.

The following research questions were addressed:

1. How preoperative nutritional face-to-face counselling by a nurse on the child's limited preoperative fasting and active preoperative nutrition effects on parental knowledge, need-for-information, and anxiety in paediatric ambulatory tonsillectomy?
2. Is the child's limited preoperative fasting and active preoperative nutrition safely implemented at home, by the parents, without mistakes and increasing complications in paediatric ambulatory tonsillectomy?
3. How preoperative nutritional face-to-face counselling of the parents on the child's limited preoperative fasting and active preoperative nutrition effects on the child's postoperative recovery in paediatric ambulatory tonsillectomy: on the child's postoperative pain, nausea and vomiting, and thereby postoperative oral intake?

4 MATERIAL AND METHODS

4.1 Sample

Data for a prospective, randomly allocated intervention study were collected between February 2006 and January 2008. The data consisted of children 4 – 10 years old (n= 116), admitted for ambulatory tonsillectomy or adenotonsillectomy, and their parents. All families were Finnish- speaking. Power analysis was used in determining the sample size (Papers II and III). The group of the first family was allocated blindly, and thereafter every other family alternately to the intervention group and to the control group in random order based on when they had returned their consent. Further instructions were sent by an independent person, who did not otherwise participate in the study or patient care.

4.2 Intervention and control group

The families in the intervention group (n= 58) received, after the study information and preliminary consent, an invitation (Appendix 2) to preoperative nutritional face-to-face counselling by a nurse which was given in addition to the current practice. In all cases, the families were counselled by the same nurse, verbally and in writing. The families also became acquainted with the ambulatory surgery unit. The visits took place 1 – 2 weeks before surgery (Figure 3a) and varied from 30 minutes to one hour. The counselling time varied, e.g. according to the size of the family when the siblings were involved and when the dynamics of the families were different. The parents with their children depending on their age were initiated into the latest principles in the child's preoperative fast, and also into the purpose and implementation of the child's active preoperative nutrition (Paper IV). If the child was not willing to participate in the counselling situation, he / she was not required to do so. The child's instructed preoperative fasting times in the intervention group were four hours without solids and two hours without fluids before surgery (e.g. Engelhardt & Crawford 2001). Moreover, a nourishing evening meal for the child was ensured by the parents. On the morning of surgery they encouraged the child to drink clear fluids, without pulp or visible chunks, on two occasions, at 4:30 and at 7:00 (Appendix 3). The child's body weight determined the volume of the portions, 10ml / kg (Ferrari et al. 2000, Castillo-Zamora et al. 2005).

The control group (n= 58) received preoperative information according to the current preoperative process at the time of the data collection of the present study (Figure 3b), including the child's preoperative fast in written form (Appendices 4 and 5) without active preoperative nutritional face-to-face counselling. The preoperative fasting times for the

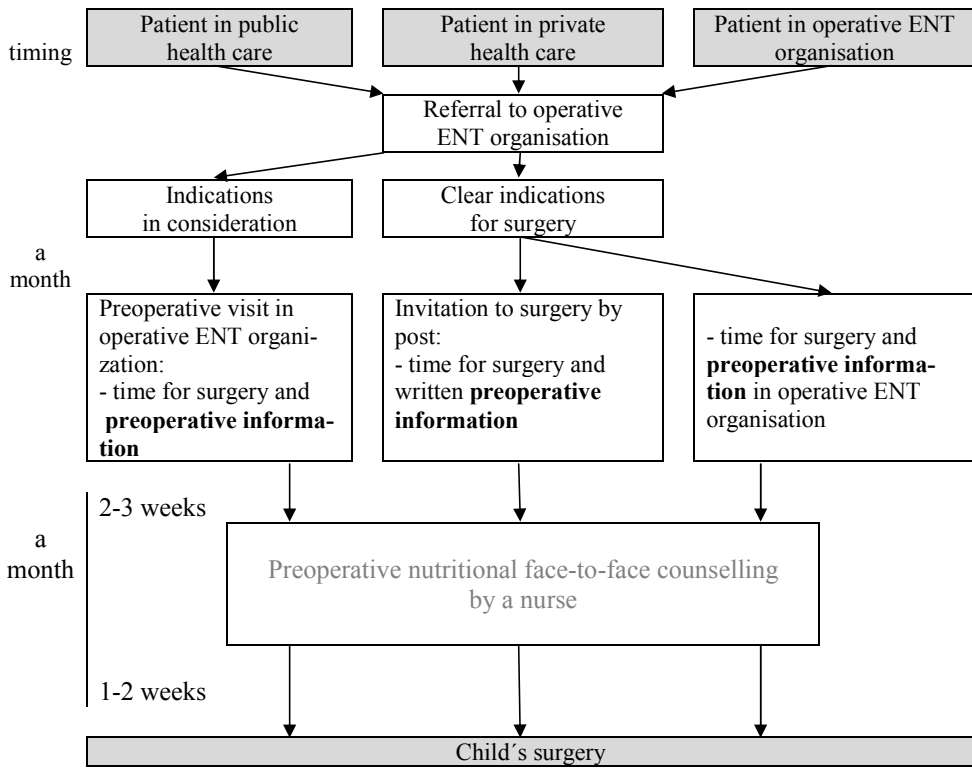


Figure 3a. The occasion and the placement of the intervention in surgical process at time of data collection

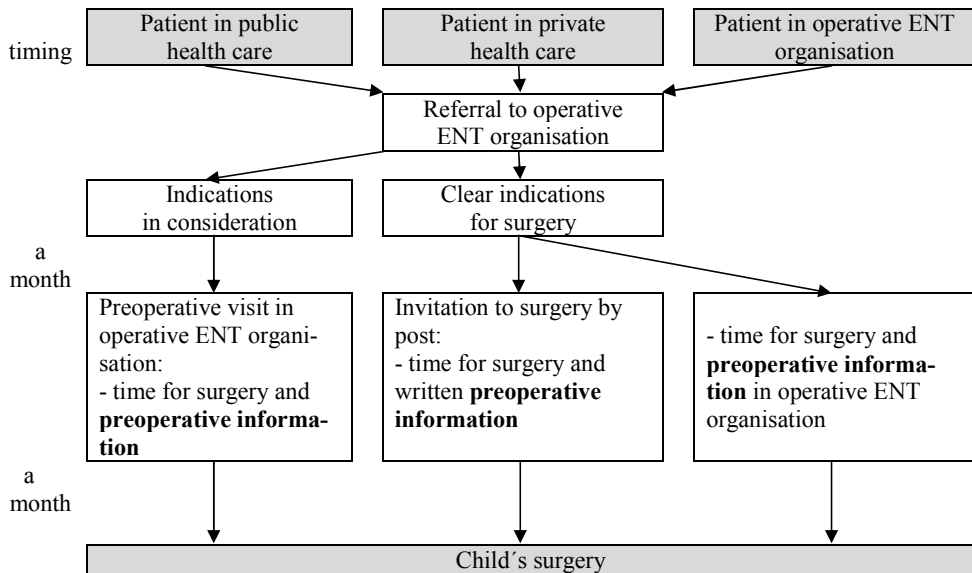


Figure 3b. The occasion and the placement of the current preoperative information in surgical process at time of data collection

children in the control group were the same as in the intervention group: four hours without solids and two hours without fluids prior to surgery (e.g. Engelhardt & Crawford 2001).

The directions for anaesthesiological care and postoperative pain medication were standardized (Papers II – V) and the same verbal and written postoperative instructions, according to current practice, about the child's home care were given to both study groups (Appendix 6). All families were telephoned the day after surgery, when the study was over to ensure the children's and the parents' well-being. A telephone call is included in the normal practice.

4.3 Instruments

The respondents in the study were both parents and the children. Parental knowledge of the child's fasting was measured by the knowledge test before and after the child's surgery. The knowledge test before the child's surgery (Appendix 7) consisted of parents' characteristics and 32 statements about preoperative fasting and postoperative ending of the child's fast. The correct answer in the knowledge test yielded one point. If the statement was not answered or the answer was incorrect no points were given. The knowledge test also included The Amsterdam Preoperative Anxiety and Information scale (APAIS, Moerman et al.1996; permission to use in the dissertation 24.10.2005 Ovid Technologies, Inc.; permission to publish in Finnish as an appendix in the study 16.6.2009 Lippincott Williams & Wilkins). The APAIS consists of a four-item anxiety scale and a two-item need-for-information scale, and questions are scored from one to five; the score range 4-20 for anxiety and 2-10 for need-for-information: the higher the score the higher the level of experience.

After the child's surgery the parents also assessed the clarity, intelligibility and adequacy of the preoperative fasting information they had received: how well they had understood the information and succeeded in the child's fast. For the assessment, the parents used the visual analogue scale (VAS, 10 cm), and open questions offered the parents' the possibility to express closer their experiences concerning the child's fast (Appendix 8).

The state of the children, e.g. tearfulness, and calmness at home on the morning of the surgery, were assessed by the parents with a standardised, "yes/no" questionnaire. The parents were also asked about the timing, quality and quantity of the child's preoperative nutrition. Open questions enabled the parents to clarify their experiences at home on the morning of surgery, such as what were the factors which eased or made the child's fasting difficult. The questionnaire also included the characteristics of the child (Appendix 9).

The child's postoperative recovery was assessed by the children with a visual analogue scale (VAS, McGrath 1989, Erickson 1990, Gilbert et al. 1995, Hausel et al. 2001). The children assessed their level of pain, nausea, thirst and hunger with a 10 cm VAS

Table 2. Operationalization of the concepts

Concept	Operationalization	Study
knowledge about child's fasting in surgical care	Statements about: - purpose of the preoperative fast - implementation of the preoperative fast - effect of the implementation of the preoperative fast - implementation of the postoperative ending of the fast - effect of the implementation of the postoperative ending of the fast	Paper I e.g. Emerson et al. 1998 Fasting et al. 1998 Friesen et al. 2000 Östman & White 2000 Keidan et al. 2004 Messner&Barbita 1997 Holzmann et al. 1995
need-for-information anxiety	- APAIS (The Amsterdam Preoperative Anxiety and Information scale)	Moerman et al.1996
preoperative fasting	- e.g. pain, nausea, thirst, hunger, tiredness, weakness, irritation	Paper I e.g. Hausel et al. 2001 Castillo-Zamora et al. 2005
safety	- implementation of the preoperative fast - mistakes and complications - child's experience	Paper I e.g. Smith et al. 1997 Ewah et al. 2006 Ferrari et al. 2000 Schreiner et al. 1990
postoperative recovery	- pain, nausea, thirst, hunger, oral intake	Paper I e.g. Brodsky et al. 1993 Gilbert et al. 1995 Alatas et al. 2006 Asiri et al. 2006

scale with endpoints, e.g. “no pain – worst possible pain” (Appendix 10). The direction of the intensity of the experience was clarified by a laughing face and a crying face at the opposite ends of the scale. The faces did not convey any values of experience; the children had the possibility to use the whole line in their assessment. The parents and the nurses (Appendices 11 and 12) graded their observations of the child's pain, nausea, thirst and hunger with a numbered scale of 0 – 10, and other symptoms by “yes/no” answers. Moreover, a structured diary about the child's nutrition and pain medication for 24 hours postoperatively was kept by the parents.

The questionnaires used were based on the results of previous literature, including Paper I, and were designed for the study. The essential concepts, concerning the child's preoperative fasting and postoperative recovery, are operationalized according to the variables used in former studies (Table 2). A pilot study of ten families was performed to ensure the adequacy of the questionnaires for the parents and the children. Ten parents and their children filled in the questionnaires in the same order as those in the present study. The knowledge test for the parents was also tested by a group of nursing specialists (n= 11). No difficulties in the

use of the questionnaires occurred, but a few details in the appearance of the questionnaires were corrected. The colours of the questionnaires were different in the different phases of the data collection so that the parents, as well as the researcher, were aware how the study was progressing, and the questionnaires were kept in order.

4.4 Data collection

The parents received the study information (Appendix 13), the preoperative knowledge test, the informed consent form (Appendix 14), and the child's VAS- scale along with the invitation to the child's surgery (Appendix 4). If the parents decided to participate they returned the completed knowledge test. The completed knowledge test was considered as a preliminary consent to participate. The intervention group received the invitation to the preoperative visit and the control group instructions according to the current practice. If the parents wished to withdraw from the study, they returned the knowledge test uncompleted and received instructions according to the current practice. The design and flow of data collection are shown in Figure 4.

On the morning of the child's surgery in the hospital, while the child was undergoing the operation, the parents filled in the questionnaire about the child's preoperative behaviour and nutrition on the same morning at home. The child's surgery was registered (Paper II, III, IV, V). In the PACU, postoperative pain, nausea, thirst, hunger, and behaviour of the children were assessed by one of three attending nurses participating in the study (Appendix 11). The group of the child was not told to the attending nurses or the operative team. The assessment was performed when the child had woken up, but before any medication was given. Further assessments were made at 2, 4, 8 and 24 hours after surgery by the parents and they also helped the child to use his / her own scales. After completing the questionnaires and structured diaries the parents returned them by mail in a prepaid envelope (Appendix 12).

4.5 Data analysis

Statistical methods were used in analysing structured data and content analysis in open questions. Statistical analyses were performed using SAS System for Windows, version 9.1 (SAS Institute Inc., Cary, NC). P-values less than 0.05 were considered statistically significant.

The differences in categorical variables between the groups and other associations between the categorical variables were tested using the chi-squared test. The Shapiro-Wilk test was used to test the normality of the continuous variables. The differences in the normally distributed variables between groups or other dichotomic variables were compared with the two-sample t-test. In the case of non-normally distributed variables,

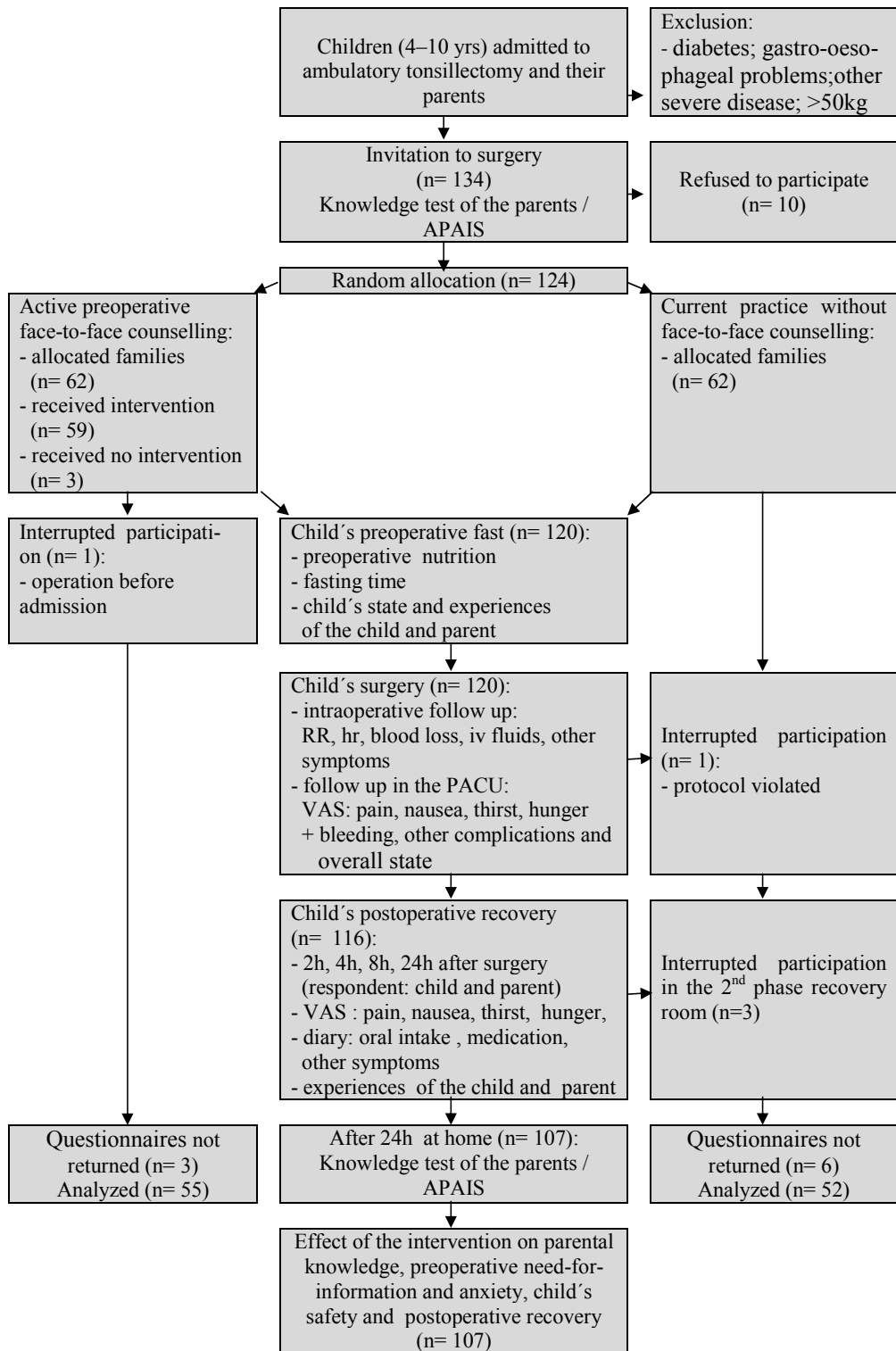


Figure 4. Flowchart of data collection (CONSORT, Consolidated Standards of Reporting Trials; <http://www.consort-statement.org/Downloads/flowchart.doc>, Smith et al. 2008).

the Mann-Whitney U-test was used. Associations of characteristic variables consisted of three categories with parental knowledge, need-for-information and anxiety, and child's pain, nausea, thirst and hunger were analysed with the Kruskal-Wallis test. The changes in parental knowledge, need-for-information and anxiety between assessments before and after the child's surgery were analyzed using the paired t-test or the Wilcoxon signed rank test. Correlations were calculated using Spearman's rank-order correlation coefficients.

Content analysis was used when analyzing open questions about the experiences of the parents and the children (Table 3). The analysis was started by searching the statements corresponding to the questions (Burns & Grove 2005). The original statements were arranged into categories according to the questions, framed as reduced expressions, and classified into subcategories according to their contents. Subcategories with similar content formed the connecting main categories according to the questions. (Miles & Huberman 1994.) Descriptive results of the open questions are presented as numbers of cases [n (%)].

Table 3. Example of content analysis

Statement corresponding to the question / reduced expression	Subcategory	n (%)	Connecting main category
.. "juice in the morning helped".. .. "permission to drink juice ".. .. " drinking juice decreased hunger".. .. " surgery first in the morning".. .. " leaving early for hospital ".....	juice portion in the morning early timing	18(31) 6(10)	Eased the child's preoperative fasting

4.5 Ethical considerations

The relevant permissions of the joint Ethical Committee of the University of Turku, The South-Western Hospital District and the Turku University Hospital were obtained to perform the study. The permissions to use the APAIS (Moerman et al.1996) in the study were also permitted by the copyright owners (24.10.2005 Ovid Technologies, Inc.; 16.6.2009 Lippincott Williams & Wilkins). The ethical considerations were focused on informed consent and the protection of the families from any harm (World Medical Association Declaration of Helsinki 2000, ETENE 2001, Artinian et al. 2004). Informed consent was obtained verbally and in written form from the parents. The children gave their consent verbally and in written or only verbally, according to their age and

wishes (Appendix 14). The consent was confirmed before the child's surgery during the preoperative visit or on the morning of the child's surgery. All families received a code number, which was used to connect the questionnaires. The names of the families were not used and the data were handled only by the researcher. The report of the study followed confidentiality and anonymity; families could not be identified. (Redsell & Cheater 2001, Burns & Grove 2005.)

The purpose, methods, use of results and ethical considerations of the study such as confidentiality, anonymity and the possibility to refuse or withdraw from the study in any phase were stressed before written consent of the subjects, the children and the parents (Edwards et al. 1998). The child's consent form was sent to the child's home with the information about the study so that the child could get acquainted with the consent with his / her parent (Andrasik et al. 2005). Children at increased potential risk of complications regarding preoperative nutrition were excluded from the experimental study (Emerson et al.1998). (ETENE 2001.)

The children were not forced in any phase of the study and no additional measures were performed. All questionnaires included a cover letter with the name and contact numbers of the researcher for possible contacts and further questions before, during and after the study. Furthermore, a week after the child's surgery, families were called by the researcher, to inquire about further recovery and possible thoughts or questions the study had raised. (Riskin et al. 2006.)

5 RESULTS

The results of the study are presented according to the research questions. The first chapter compares changes in the level of parental knowledge (knowledge test) and need-for-information and anxiety (APAIS, the Amsterdam Preoperative Anxiety and Information scale) after preoperative face-to-face counselling versus the practice without face-to-face counselling, and also, implementation and safety of limited preoperative fasting in children undergoing ambulatory tonsillectomy. The second chapter discusses the effects of limited preoperative fasting on the child's postoperative recovery. The main results are introduced. More detailed results are presented in the original Papers II–V.

5.1 Characteristics of the participants

The data from 116 (58 / 58) families were collected before discharge. The data after discharge consist of 107 (92.2%: the intervention group 55 / the control group 52) questionnaires filled in by the parents and the children. In most cases the questions for the parents were answered by the mother (81.3 %, n= 87), in three cases by the father (2.8%), and in seventeen families both the mother and the father (15.9%). The mean age of the parents was 35.6 years. Only few parents in the study groups had higher education level and there was no difference in education in health care. The parents were employed. There were no differences in the earlier experiences of fasting in surgical care but in the control group the participating children were smaller and younger and more often the only child in the family than in the intervention group.

Associations between characteristics and measured variables were found. The education of the parents did have an effect on the knowledge after the child's surgery, and the parental scores on the knowledge test correlated with their preoperative need-for-information and anxiety. A connection was found between the child's earlier experiences and postoperative pain, as well as between the child's age, weight and postoperative nausea, postoperative fasting time, hunger and nutrition. Characteristics of the participants are presented in Table 4. When the respondent was the mother and the father, the records of the first respondent were used.

5.2 The effect of preoperative face-to-face counselling of parents by a nurse (Paper IV)

The educational changes in the fields of the knowledge test were, after the child's surgery significantly better in the intervention group than in the control group. Moreover, both the anxiety and preoperative need-for-information were significantly decreased in the intervention group. (Table 5.)

Table 4. Characteristics of the participants (n= 116)

	Intervention group (n= 58)	Control group (n= 58)	p-value
PARENTS:			
Mother or Father / Both [n (%)]	41 (70.7) / 17 (29.3)	48 (82.8) / 10 (17.2)	0.215
Age (yrs) [mean (SD)]	35.6 (5.3)	35.6 (6.2)	0.210
Education			
- compulsory schooling / high school [n (%)]	29 (50) / 27 (46.5)	33 (56.9) / 23 (39.7)	0.782
- higher education [n (%)]	12 (20.7)	4 (6.9)	0.040
- education in health care [n (%)]	13 (22.4)	16 (27.6)	0.668
Employment situation			
- at work [n (%)] (yes / no / leisure)	47 (81) / 3 (5.2) / 8 (13.8)	41 (70.7) / 4 (6.9) / 13 (22.4)	0.396
Earlier experiences of fasting in surgical care [n (%)]:			
- earlier surgical care (yes / no)	36 (62.1) / 22 (37.9)	46 (79.3) / 12 (20.7)	0.065
- time of surgery (within 1 / 5 / 10 yrs/ / over 10 yrs ago)	5 (8.6) / 14(24.1) / 9 (15.5) / 7(12.1)	8(13.8) / 16(27.6) / 10(17.2) / 4(6.9)	0.694
- type of surgery (ENT/other)	11 (19) / 25 (43.1)	16 (27.6) / 27 (46.6)	0.834
Fasting information:			
- earlier information (yes / no)	19 (32.8) / 38 (65.5)	16 (27.6) / 40 (69)	0.685
- time of information (within 1 / 5 / 10 yrs/ over 10 yrs ago)	1(1.7) / 4 (6.9) / 3(5.2) / 8(13.8)	0/4 (6.9) / 3 (5.2) / 7 (12)	1.000
- informant (staff / education / leaflet / acquaintance / Internet)	11 (19) / 3(5.2) / 4(6.9) / 0 / 0	5 (8.6) / 1 (1.7) / 9 (15.5) / 0 / 0	0.097
CHILD IN SURGERY:			
- sex (m/f) [n (%)]	34 (58.6) / 24 (41.4)	25 (43.1) / 33 (56.9)	0.137
- age (yrs) [mean (SD)]	7 (2)	6 (1.5)	0.001
- height [mean (SD)]	126 (13)	120 (11)	0.159
- weight [mean (SD)]	28 (9)	25 (7)	0.036
- allergy [n (%)]	10 (17.2)	13 (22.4)	0.468
- asthma [n (%)]	1 (1.7)	5 (8.6)	0.206
- dysphagy [n (%)]	2 (3.4)	1 (1.7)	1.000
- rheumatoid arthritis [n (%)]	1 (1.7)	0	1.000
FAMILY:			
Earlier experiences of fasting in surgical care [n (%)]:			
- earlier surgical care (yes / no)	32 (55.2) / 26 (44.8)	32 (55.2) / 24 (41.4)	0.852
- previous time of surgery (within 1/ 5 / 10 yrs/ over 10 yrs ago)	10(17.2) / 13(22.4) / 6(10.3) / 1(1.7)	7(12) / 14(24.1) / 5 (8.6) / 0	0.878
- type of surgery (ENT*/other)	23 (39.7) / 8 (13.8)	17 (29.3) / 14 (24.1)	0.253
Children in the family:			
- number of children [mean (SD)] / one child [n (%)]	2.5 (0.9) 2 (3.4)	2.4 (1.1) 10 (17.2)	0.388 0.039
- age groups of the children [n (%)] (<4 / 4 - 6 / 6<)	57 (98.3) / 55 (94.8) / 25 (43.1)	57(98.3) / 48 (82.8) / 23(39.7)	0.098

5.2.1 Change in parental knowledge, need-for-information and anxiety

The parental knowledge after the child's surgery in both study groups was significantly increased compared to the level of their knowledge before the child's surgery. The anxiety of the control group was not relieved (Table 5). Before the child's surgery, there

was no connection between the level of parental knowledge and preoperative anxiety, but after surgery, the higher the scores on the knowledge test obtained by the parents, the less need-for-information and anxiety they felt ($p= 0.015$, $r= -0.248$, $n= 94$). After the child's surgery, the education of the parents did have an effect on the knowledge. Significantly lower knowledge about the child's fasting (both study groups: $p= 0.001$) was found in the parents with lower basic education.

In the intervention group the parents did not get new knowledge about the purpose of the child's preoperative fasting, but in the implementation of the child's preoperative fasting and in its effects the increase of knowledge was significant. Similarly, they had also significantly gained new knowledge about the ending of the child's postoperative fast. After the child's surgery, the preoperative need-for-information and anxiety of the parents in the intervention group had decreased (Table 5).

There were no significant differences between the study groups in the scores on the knowledge test before the child's surgery, but after surgery, a significant difference in the effect of implementation of the preoperative fast was found. The knowledge of the parents in the intervention group was significantly higher than the knowledge of the parents in the control group ($p < 0.0001$). The level of total sum score was significantly higher in the intervention group ($p= 0.0004$). Similarly, there were no significant differences between the study groups in the scores of the preoperative need-for-information or anxiety before the child's surgery, but after surgery, a significant difference was found. The parents of the control group felt more need-for-information and anxiety ($p= 0.007$, $p= 0.017$; respectively). (Paper IV)

Table 5. Effect of preoperative fasting information: the increase in parental knowledge and the decrease in preoperative need-for- information and anxiety before and after the child's surgery (p - value) (Paper IV)

	Intervention group (n= 58)	Control group (n= 58)
Knowledge test	<.0001	0.0001
Preoperative fasting		
- purpose	0.647	0.395
- implementation	<.0001	0.0008
- effect of implementation	<.0001	0.902
Postoperative ending of the fast		
- implementation	0.005	0.445
- effect of implementation	<.0001	0.0002
APAIS	0.003	0.367
- need-for-information	0.014	0.360
- anxiety	0.013	0.306

The parents in the intervention group considered the clarity, intelligibility and adequacy of the information about the child's fasting significantly better than the parents in the control group ($p=0.006$, $p=0.022$, $p=0.031$; respectively). The parents in the intervention group considered that they had understood the fasting information, had the appropriate skills to implement the child's fast, and had also succeeded well. However, there were some parents who doubted their own understanding, skills, or success in the child's preoperative fasting. The education level of the parents in neither study group influenced their assessment of the quality of the information. Two mothers in the intervention group had searched for information on the Internet.

5.2.2 Child's implemented preoperative fasting (Paper II, III, V)

The children in the control group fasted preoperatively significantly longer ($p < .0001$) than the children in the intervention group. The children in the intervention group took clear fluids at 4:30 (mean 7.7ml/kg, SD 2.5) and at 7:00 am (mean 8.1ml/kg, SD 2.4). In the control group, in three cases, mothers gave fluids to the child during the night before surgery. No correlation with the children's characteristics and the preoperative fasting times was shown. The parental characteristics did not have an effect, either. The children in both study groups fasted perioperatively equally in solids, but in fluids the perioperative fasting time was significantly longer in the control group ($p = <.0001$). There was no difference in the postoperative fasting times between the study groups. Thus, the long perioperative fasting time in the control group was caused by the longer preoperative fasting of the children.

According to the parents (the intervention group 89%, $n=52$; the control group 86%, $n=50$), the factors that made implementing the child's preoperative fasting easier in both study groups were; telling the child why fasting is necessary, a nourishing evening meal, early admission, the child is not hungry in the morning, and in the intervention group the fluid portions on the morning of surgery (31%, $n=18$). Five children in the intervention group (8.6%) considered early fluid portions hard to take. In the control group, no factors that made fasting more difficult were mentioned.

The children's menu on the previous evening was similar in both study groups, but in the intervention group the parents had offered porridge more frequently [(24%), $n=14$] than in the control group [(5%), $n=3$], and juices [(27.6%), $n=16$] more often than water [(6.9%), $n=4$], which was more commonly consumed in the control group [(31%), $n=18$]. Fifteen (25.9%) children in the intervention group gave their comments about the preoperative fasting; eight of them felt full and seven were thirsty or hungry. In the control group, sixteen children (27.6%) expressed their opinion; eight children said they were thirsty or hungry, and nine children dreamed about postoperative meals and drinks. In the control group no child felt full.

5.2.3 Safety of child's limited preoperative fasting (Paper V)

The safety of the children in neither group was endangered during the surgical process. None of the parents in either study group exceeded the structured portions or timing of the nutrition. The parents in the intervention group had adopted well the knowledge about child's limited preoperative fasting and active preoperative nutrition and followed the structured preoperative nutrition of the child.

All operations of the children in both study groups went well and none of them was cancelled or postponed. There were variation, e.g. in the duration of surgery and in intraoperative blood loss, but no significant differences between the study groups regarding intraoperative registration. None of the children in either study group vomited in the operating room, and no sign of aspiration during anesthesia induction occurred. One child in the intervention group had nausea in the PACU but no one vomited. Some of the children were seeping from the wound in the throat and spat blood, and one child in the intervention group was reoperated because of postoperative bleeding. There were no significant differences between the two study groups in these respects.

5.3 Child's postoperative recovery after limited preoperative fasting (Paper II, III)

At first, in the beginning of the postoperative recovery there was a difference between the study groups in the children's pain but they were not nauseous in either study group. The children in the intervention group were more peaceful and in significantly less pain compared to the children in the control group. Later, the highest scores in pain were reported eight hours, and in nausea and vomiting, four hours postoperatively in both study groups. In the PACU the children were not thirsty or hungry in either group, but in the intervention group the VAS scores remained on a low level during the first 24 postoperative hours. However, there were no significant differences between the groups in the volume of oral intake during the 24 postoperative hours. The characteristics of the respondents did not have a statistically significant effect on the assessments of the child's pain, nausea, thirst or hunger. The assessments of the children and the parents are presented in Figures 5, 6, 7 and 8.

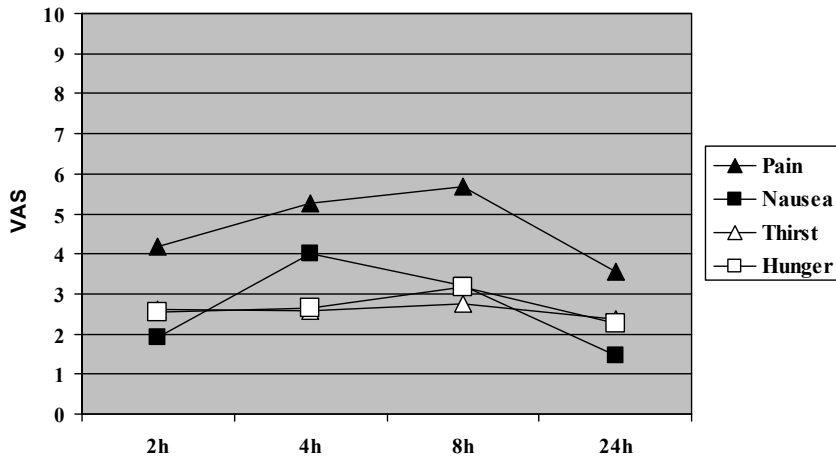


Figure 5. Children's postoperative pain, nausea, thirst and hunger according to the children (n=55) in the intervention group (Papers II, III)

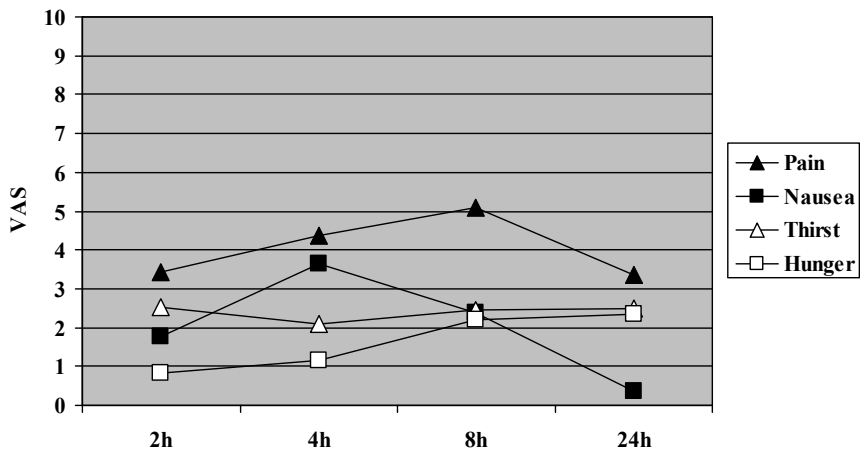


Figure 6. Children's postoperative pain, nausea, thirst and hunger according to the parents (n=55) in the intervention group (Papers II, III)

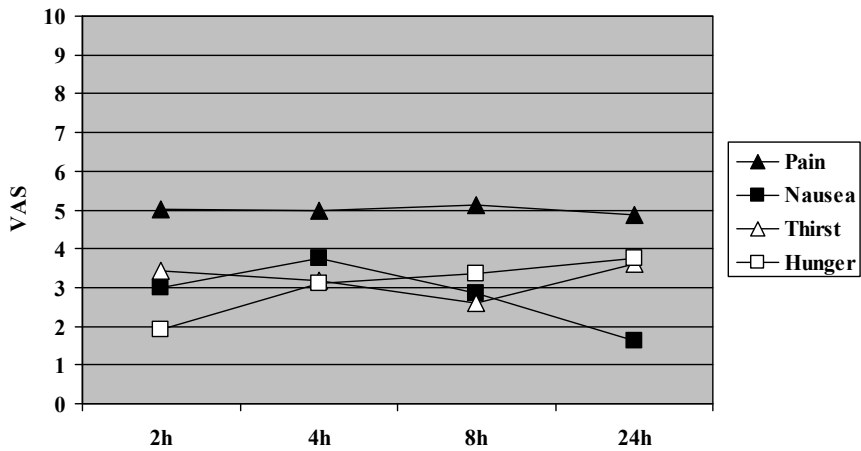


Figure 7. Children's postoperative pain, nausea, thirst and hunger according to the children (n=52) in the control group (Papers II,III)

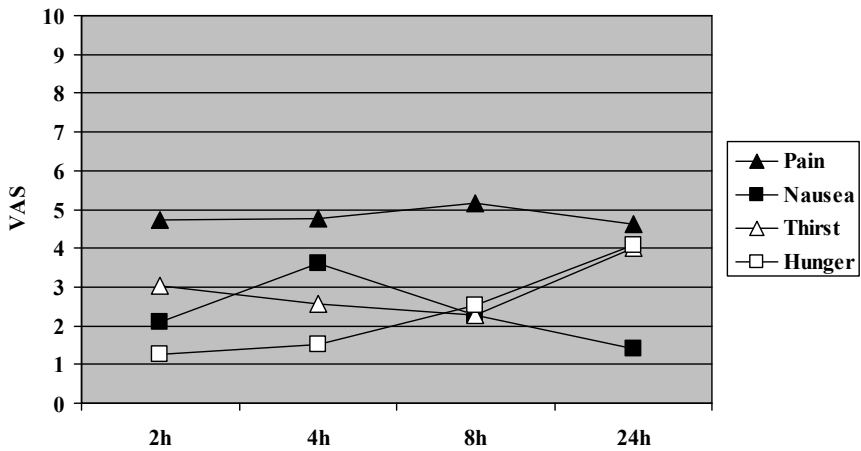


Figure 8. Children's postoperative pain, nausea, thirst and hunger according to the parents (n=52) in the control group (Papers II, III)

5.3.1 Child's recovery in hospital

The children were not significantly nauseous in the PACU but most of the children in both study groups felt pain; the children in the control group significantly more than the children in the intervention group ($p= 0.0002$, $n= 116$). The children in the control group, who had been operated 1 – 5 years previously, were in significantly more pain compared to those children in the intervention group ($p= 0.024$, $n= 34.5\% / 27.5\%$; respectively). In nausea and vomiting, there were no statistically significant differences between the study groups. None of the children vomited in the PACU, but nineteen children spat blood. The children did not feel thirst or hunger in either group. The preoperative fasting time correlated only in the intervention group; the longer the child had fasted in fluids the higher were the pain scores ($p= 0.017$, $r= 0.311$, $n= 58$).

Two hours postoperatively, in the 2nd phase recovery room, mean pain scores were all at the same level as in the PACU, but without significant differences between the study groups. The children in the control group had also calmed down. The pain scores in the control group remained at the same level, whereas in the intervention group they began to increase. In the beginning, in the 2nd phase recovery room, the children were not very nauseous, but the nausea began to increase, and in both study groups. The children were most nauseous four hours after surgery. More than half [$n= 70$ (60.3%)] of the children vomited and most of them vomited blood [$n= 58$ (82.9%)].

In the intervention group, the children were not thirsty or hungry, but the hunger of the children in the control group began to increase. However, there were no significant differences between the groups in the children's postoperative fasting times. Similarly, there was no significant correlation between the postoperative fasting time and the postoperative nausea in either group, but the children in the control group had more difficulties with the first postoperative oral intake in fluids because of pain than the children in the intervention group although the difference was not significant ($p= 0.224$, $n= 35$). According to the parents in the control group, the younger children were more nauseous two hours postoperatively ($p= 0.002$; $R = -0.455$, $n= 41$) and in both study groups, the children with lower weight fasted postoperatively longer than the older children ($p= 0.023$, $r= -0.223$, $n= 103$).

5.3.2 Child's recovery at home

The pain of the children increased after discharge. Pain scores in both study groups were highest at home eight hours after surgery, and there were no differences in the children's behaviour. On the first postoperative morning, the children in the control group were significantly more in pain than the children in the intervention group although the pain was decreased in both study groups (children: $p= 0.047$, $n= 103$; parents: $p=$

0.023, n=101). The children in the control group were also more irritated although the difference was not statistically significant. The nausea and vomiting decreased in both study groups during the evening of surgery, but some of the children vomited still the following morning [n= 6 (5.6%)].

On the evening of surgery and the following morning, the children in the control group were significantly thirstier and significantly hungrier ($p= 0.042$, $n= 103$; $p= 0.006$, $n= 101$; respectively) than the children in the intervention group. According to the parents in the control group, especially the children with lower body weight were significantly hungrier eight hours and 24 hours after surgery ($p= 0.006$, $r= -0.395$; $p= 0.023$, $r= -0.325$; respectively, $n= 52$), and the postoperative nutrition over 24 hours of the smaller and younger children in both study groups was greater in volume ($p= <.0001$, $r= -0.378$; $p= 0.0004$, $r= -0.337$; respectively, $n= 105$) .

According to the parents, postoperative ending of the child's fast in both study groups was complicated by the child's pain and nausea, and lack of willingness to take nutrition (38,3%, $n= 107$). Helpful factors were the child's thirst and hunger, pain medication, and in the intervention group, also the postoperative instructions they had received (36%, $n= 20$). However, no significant correlation between the postoperative fasting time and the postoperative pain, nausea, thirst or hunger was found in either group. As the first oral intake in the hospital the children were offered juice, popsicles and ice cream which were also the most popular dishes at home. However, the children also had a desire to eat saltier alternatives. On the evening of surgery 22 (20,6%) children also ate saltier dishes (Paper III). Fifteen (27.3%) of them in the intervention group. Pain medication relieved in the children's pain on swallowing. Nearly all parents in both groups gave pain medication to their child at least once in the evening of surgery (95%, $n= 102$), and nearly half of the parents twice (46%, $n= 49$) or more than twice (30%, $n= 32$). At night, only 17 (16%) of the children received medication. On the first postoperative morning, most of the parents gave pain medication to the child at least once (85%, $n= 91$) or twice in 28 (26%) cases.

5.4 Summary of the results

The essential results of the study are shown in Table 6.

Table 6. Significance of the beneficial effects of counselling of the parents on the child's limited preoperative fasting

Counselling of the parents on limited preoperative fasting in paediatric ambulatory tonsillectomy: (Intervention group n= 55 / Control group n= 52)	p- value
Knowledge test (Intervention group / Control group): - increase in parental knowledge	<.0001 / 0.902
APAIS: - decrease in parental preoperative need-for-information - decrease in parental anxiety	0.014 / 0.360 0.013 / 0.306
Implementation of the child's limited preoperative fast:	p- value
Safety (Intervention group n= 58 / Control group n= 58): - adequate preoperative fast - mistakes/complications - the child's experience (by the parents): less preoperative irritation and tearfulness at home less postoperative irritation and tearfulness in the PACU less postoperative irritation and tearfulness at home after 24 h	< 0.0001 0 0.289 0.034 0.085
Recovery of the child (Intervention group n= 58 / Control group n= 58): in the PACU (by a nurse) - less postoperative pain - less postoperative nausea - less postoperative thirst - less postoperative hunger	0.0002 0.315 0.256 0.493
2 hours postoperatively (pain, nausea, thirst, hunger by the child/ by the parent): (Intervention group n= 55 / Control group n= 52; 2h- 24h postoperatively) - less postoperative pain - less postoperative nausea - less postoperative thirst - less postoperative hunger - shorter time to the first postoperative oral intake - less difficulties with the first postoperative oral intake (by the parents)	0.261 / 0.061 0.324 / 0.966 0.303 / 0.663 0.362 / 0.457 0.071 0.224
4 hours postoperatively: - less postoperative pain - less postoperative nausea - less postoperative thirst - less postoperative hunger	0.841 / 0.728 0.657 / 0.762 0.547 / 0.257 0.400 / 0.316
8 hours postoperatively: - less postoperative pain - less postoperative nausea - less postoperative thirst - less postoperative hunger	0.336 / 0.726 0.273 / 0.748 0.719 / 0.849 0.685 / 0.421
24 hours postoperatively: - less postoperative pain - less postoperative nausea - less postoperative thirst - less postoperative hunger - increased postoperative oral intake during the first 24 hours	0.047 / 0.023 0.475 / 0.123 0.051 / 0.005 0.042 / 0.005 0.571

6 DISCUSSION

6.1 Validity and reliability of the study

The adequacy of the study process is examined by the validity and reliability of the results. The internal validity assesses the degree to which an instrument measures what it is supposed to measure, and the external validity the representativeness of the sample size and the generalizability of the study. In this study, the internal validity of the instruments was evaluated by content validity, construct validity, and criterion-related validity, and statistical validity by statistical conclusion validity. The reliability describes the consistency of the measurements and the power of the instruments to produce results which are not random. (Polit & Hungler 1999, Burns & Grove 2005.)

Internal validity

Content validity evaluates the operationalization of the concepts, the modifying into measurable form, and exploring whether they are measuring what they are supposed to measure (Polit & Hungler 1999). The questionnaires were developed for this study because former, congruent instruments were not available. Earlier literature related to the topic was examined. Selection of the concepts “counselling”, “knowledge”, “need-for-information”, and “anxiety” is based on the earlier literature where “counselling” has been defined to have a face-to-face dimension (Poskiparta et al.1998), which is an essential factor in the study design. In health counselling, nurses recognize patients’ experiences, knowledge, and skills and offer their own available professional knowledge (Tones et al. 1994, Williams 1995, Poskiparta et al. 1998). In this study, the content of knowledge is the child’ s fasting in surgical care, and the fields and the statements of the knowledge test are based on the results of former studies; facts according to present knowledge. The concepts “need-for-information” and “anxiety” are included in an instrument (AP AIS, Moerman et al. 1996), designed to measure the preoperative state of parents and shown to be valid (Miller et al. 1999, Spencer & Franck 2005). The essential concepts, concerning the child’ s preoperative fasting and postoperative recovery, are also based on former studies and operationalisized according to the used variables. These variables are widely used in assessing child’ s recovery after tonsillectomy. Furthermore, the adequacy of the questionnaires was ensured by a pilot study of ten families and eleven nursing specialists.

Construct validity determines whether the instrument measures the theoretical construct which it is supposed to measure (Burns & Grove 2005). In this study, the measurable variables about the child’ s preoperative fasting and postoperative recovery are based on the evidence- based knowledge of the theoretical construct, as well as on the statements of the knowledge test. However, “knowledge” is an abstract concept and therefore it

may be more difficult to achieve an accurate level of construct validity (Polit & Hungler 1999). In this study, “knowledge” is operationalized to measurable form and there are no degrees of rightness in the answers of the knowledge test; answers are true or false when the scores the parents have received describe their accurate knowledge according to the theoretical construct of the study. The Amsterdam Preoperative Anxiety and Information scale (APAIS, Moerman et al. 1996), which was included in the knowledge test, has been shown to be valid to identify preoperatively anxious parents and parents with a need-for-information (Miller et al. 1999, Spencer & Franck 2005). However, the parents fulfilled the knowledge test at home before and after the child’s surgery and confusing factors may have occurred. Furthermore, the parents helped the child to use his / her own scales which may have, in some cases, influenced to the estimations of the children.

Criterion-related validity describes the connection between the results obtained by the instruments and the present or the future; how predictable the results are, how they reflect the results obtained by another instrument (Burns & Grove 2005). According to the literature search in the present study, parental knowledge about the child’s fasting in surgical care has not been studied, and therefore it seems that there is no other reported instrument for this topic. Thus, conclusions in this respect cannot be drawn. Several studies in this literature search have shown that children who have undergone tonsillectomy are in pain, they suffer from nausea and have difficulties in postoperative oral intake (Kokki & Salonen 2002, Kanerva et al. 2003, Valtonen et al. 2004). This observation is confirmed in the present study. Thus, it seems to be realistic to conclude that the results of studies conducted in the future are, despite the instruments used, similar with the results of this study.

External validity

External validity indicates a representative sample size and generalizability of the results (Burns & Grove 2005). Generalizability of the study is dependent on how the selection of the participants was performed and what kind of participants were selected; how applicable its results are and how feasible the intervention might be (Zwarenstein et al. 2008). In this study, the sample size was determined with power analysis and the required sample size was 104 children (52 children in both groups). However, data collection was extended to 134 because of probable loss of data; in the end, 124 families were allocated into the study groups (62 / 62). When data from 116 (58/58) families were registered before the child’s surgery and 107 (intervention group 55 / control group 52) families returned the questionnaires after discharge, the response rate was 92.2%. Despite the drop-out of participants, the data in both study groups reached the determined group size of 52 children in the last phase of the study.

There was a possibility for bias in the allocation of the families when they were allocated to the study groups in turn after the first blindly randomized family. However, further instructions were sent to the families by an independent person, who was not a member of the study group or health-care team, a fact which decreases the potential possibility of bias. Randomization by a computer was not possible because the participants were not known in the beginning of the study. Furthermore, closed envelopes could not be drawn by the participants because randomization had to happen before the preoperative visit or the day of surgery. Moreover, if the independent person had drawn the closed envelopes or flipped a coin the opportunity for manipulation had been similar as it was in the every other allocation by the independent person. Thus, the every other allocation was as reliable as the closed envelopes or flipping the coin but more distinct without any apparent blinding. The most significant difference between the study groups was in the children: in the control group the participating children were smaller and younger than in the intervention group. The families in the control group may have been younger as a family because in the control group the families had more often only one child. However, neither age and body weight nor number of children in the family had an effect on the outcome variables of the participants.

Blinding in the study design may be difficult to achieve in nonpharmacologic trials which usually test complex interventions involving several components (Boutron et al. 2008). In this study, part of the intervention, implemented by the parents, was directed straight at the children, which means that the parents were aware of their child's study group. This could have had an impact on the estimation of the effect of the intervention (Boutron et al. 2008). On the other hand, the estimations of the parents and the children were at the same level and in the same direction, which confirms the validity of the estimations. Moreover, with regard to the children in the present study, there is a possibility that in the PACU the study group of a child was revealed in some cases. However, the attending nurses in the PACU did not know the length of preoperative fasting time of any child, and in the intervention group, the children's preoperative fasting time correlated positively with the children's pain scores. Thus, this fact seems to support the results of the study.

The results of the study are applicable and feasible in paediatric surgical care concerning parental involvement in child's preoperative fast and its postoperative ending, as the children achieved a better level of nutrition and a more pleasant surgical experience. Also, the results confirm that face-to-face counselling by a nurse is an effective method in patient education, and that parents are able to adopt significant amounts of knowledge being a valuable, active part of the child's health-care. However, when the study was performed in tonsillectomy patients, where the wound is in the throat, there cannot be certainty about all paediatric surgical patients benefiting postoperatively from the limited preoperative fast in terms of postoperative pain. (Zwarenstein et al. 2008.) The eligibility criteria may also influence the generalizability of the results (Boutron et al.

2008) because there are subgroups which are considered to be at risk in surgical care due to possible disturbances in emptying of the stomach. However, shorter preoperative fasting guidelines are generally recommended for all, although with consideration of certain subgroups (RCN 2005).

Statistical conclusion validity

Statistical conclusion validity is concerned with whether the conclusions about relationships or differences in the data are an accurate reflection of the real world. The reasons for the false conclusions are threats to statistical conclusion validity: low statistical power, violated assumptions of statistical tests and an incorrect conclusion that a relationship or difference exists when it does not (Burns & Grove 2005).

Low statistical power may cause error when no statistically significant difference between samples is detected when there actually is a difference (type II error). Sample size or the statistical test to determine difference between the groups may be inadequate (Burns & Grove 2005). In this study, adequate sample size was ensured by extending the data collection and thereby the loss of data did not decrease the valid size of the study groups. The sample size was determined with a power of 90% (Ottenbacher 1989, Uhari & Nieminen 2001) and an error (α) level of 0.05 (Markel 1991). Statistical power analysis was conducted to detect a difference in VAS units between the study groups. However, there were two interventions in the study; preoperative fasting of the children and counselling of the parents. No power analysis to detect a difference in the scores on the parental knowledge test was conducted. On the other hand, the children and the parents had to be members of the same family, and the interventions had to be studied with the same design because the intention was to examine how the parents adopt the counselling and how they implement the instructions they have received. One power analysis was possible; the choice was made by the researcher. The sample of children was chosen because the effect of the child's preoperative fasting was more significant; if children do not benefit from limited preoperative fasting there is no point counselling the parents on it.

The validity of the analysis of statistical data is also based on relevant methods. Violated assumptions of statistical test about the data, e.g. randomization or distributions of variables, may cause inaccurate results in the analysis. (Burns & Grove 2005.) In this study, there was a potential possibility for bias in the random allocation of the families. However, despite the extensive recording of the characteristics of the participants, the study groups were significantly similar. Furthermore, the normality of the distribution of the continuous variables was tested before choosing the final statistical test. Another threat to statistical conclusion validity is concluding incorrectly that a relationship or difference between the study groups is statistically significant when it does not (type I error). The possibility of a type I error is informed by determining the p-value in the

study. In this study, the determined p- value is 0.05, a level which is commonly accepted (Markel 1991).

Reliability

Reliability describes the consistency of the measurements and is defined as the extent to which random errors are minimized (Polit & Hungler 1999). The preoperative nutritional face-to-face counselling was performed by the same nurse in all cases, but the data collection lasted two years, causing probable variation in the presentation of the information (Boutron et al. 2008). However, the instructions, including the essential facts, were also given in written form (Bellew et al. 2002). Furthermore, the participating children also received counselling by the nurse according to their age (Smith & Callery 2004). Because the children were of different ages, this factor may have caused variation in the difficulty of implementing the child's fast. On the other hand, the parents of the intervention group succeeded well.

The counselling occurred one to two weeks before surgery. This time line has been considered adequate to improve parental preoperative knowledge (Spencer & Franck 2005). On the other hand, it may be that the surgical procedure itself confirmed the information the parents had received before the child's surgery. Thus, the results cannot be regarded as a benefit of the preoperative face-to-face counselling only. Moreover, basic education was shown to have an influence on parental knowledge after the child's surgery. However, there was no difference between the study groups regarding the basic education of the parents. Also, the knowledge test was not too difficult or too simple for the parents, according to a group of specialists and parents in the pilot study. Moreover, there were variations in the scores on the knowledge test between the minimum and maximum.

Parental anxiety, according to former studies, is caused by lack of information, and parental knowledge and anxiety can be reduced by preoperative information (Hatava et al. 2000, Bellew et al. 2002, Sjöling et al. 2003). The benefit of preoperative information was also shown in this study, which supports the reliability of the results. On the other hand, the relief the parents felt after the child's surgery probably also decreased their anxiety. However, the surgical procedure in the study was standardized, so the intervention can be assumed to have had an effect on parental knowledge, need-for-information, and anxiety.

The visual analogue scale (VAS) was used by the children to describe their postoperative pain, nausea, thirst and hunger. The visual analogue scale has also been used in assessing many other experiences than pain (Gilbert et al. 1995, Kawana et al. 2000, Hausel et al, 2001). However, age may affect the ability to use the scale (Andrasik et al. 2005, Schields et al. 2005). Nevertheless, some studies have used the scale successfully also in children (e.g. Kokki & Salonen 2002). In this study, the use of the visual analogue scale

was presented to the children before they gave their consent, because the assessment was the most demanding situation for the child in the study. The parents were also instructed not to force the child. However, there is no guarantee that no children felt uncomfortable necessity during their participation, which may have influenced their ratings.

The children assessed their experiences using the visual analogue scale (VAS, 10cm) and the parents by numbers from 0 to 10. Children's self-report ratings and the ratings of the adults together provided a more accurate description of the child's experience (Sutters et al. 2005). The children understood and used the visual analogue scale well. The scores of the children and the adults in both groups were so close to each other that the level of assessments can be considered reliable. The possibilities to assess different variables with the same instrument and directly compare the parental ratings and the ratings of the children were the grounds for choosing the visual analogue scale for the study. It was also easier for the participants to learn and use only one scale in all measurements.

The experimental study design included double intervention; counselling of the parents implemented by a nurse, and limited preoperative fasting of the child implemented by the parents. The reliability of the results requires success in both interventions. If counselling has a significant, educational effect on parental knowledge and anxiety but the parents make mistakes or do not implement the instructions in the child's limited preoperative fasting, counselling is not succeeded. However, the preoperative fasting time in the intervention group was significantly shorter than in the control group and no mistakes occurred in the nutrition of the children. The mean preoperative fasting time in children in the intervention group differed by 40 minutes from the counselled fasting time, whereas the comparable mean difference in fasting time in the control group was 10 hours. Thus, the parents in the intervention group had adopted well the knowledge about the child's limited preoperative fasting.

Content analysis was used when analyzing four open questions about the experiences of the parents and the children: the children were asked about their wishes and opinions about eating and drinking before and after surgery, and the parents, factors which made the child's preoperative fasting and postoperative ending of the child's fast easier or more difficult. The answers to the open questions were expressed in brief and possibilities of different interpretations were weak. The children's answers were documented by the parents, a fact which may have had an influence on the children's answers. However, the data about the child's pre- and postoperative well-being were congruent with the structured measurements of the children and the parents. (Polit & Hungler 1999, Burns & Grove 2005.)

6.2 Ethics of the study

The study had relevant permissions of the involving institutions and the ethical committee to perform the study. The permissions to use the APAIS (Moerman et al. 1996) was also permitted by the copyright owners (24.10.2005 Ovid Technologies, Inc.; 16.6.2009 Lippincott Williams & Wilkins). The ethical considerations: informed consent, right to refuse or withdraw from the study, confidentiality and anonymity of the participants were attended during the research process. The informed consent was confirmed by signature after verbal study information in the preoperative visit or on the day of the child's surgery. The discussion before signed parental consent was performed to make sure that the parents had understood the mailed, written study information.

The children, at increased potential risk were excluded, and the parents of the participating children were informed not to force the child in any phase of the study. Furthermore, the families had the opportunity to discuss with the researcher about the child's further recovery and possible thoughts or questions the study had raised. (Redsell & Cheater 2001, Burns & Grove 2005, Riskin et al. 2006.)

However, a study concerning especially children is worth of further discussion. Ethically, double intervention was most challenging because of the participating children. Safety of the children was essential factor. However, when the children are involved their parents are more vulnerable than in a study concerning themselves, only. Furthermore, when the child is a target of an intervention implemented by his/her parent it may cause additional stress for the parent, a fact which makes the quality of the presented information by nurses more crucial. The intervention has to be implemented correctly because of safety of the child and the parent. In this study the parents had adopted the counselled information well.

Worth of consideration is also the part of double intervention which is targeted directly at the child; is it shown to be safe and beneficial by former studies and is it acceptable for parental implementation. In this study, the part of double intervention which was targeted directly at the child was, according to former studies, safe and beneficial. Moreover, the practice which the intervention included was already prevailing guideline in the research organization, although without preoperative face-to-face counselling.

The parents were principally counselled on the child's preoperative fasting but the children could not be ignored in this respect even though it probably influenced parental actions and implementation of the child's fast and decreased the reliability of the study. Denial of preoperative face-to-face counselling from the children, because of the study design, would have been unethical because of their rights to receive all attention they are eligible (Ellerton & Merriam 1994, Kain et al. 1998, ETENE 2001, Hallström & Elander 2004, Smith & Callery 2004, Pelander 2008).

6.3 Research findings versus earlier studies

The results of the study confirm that an interactive relationship, face-to-face counselling of the parents, enables families to cope better with the child's surgical care in ambulatory settings. The parents were more satisfied and less anxious which has been shown to benefit also the child (Litman et al. 1996). Furthermore, the parents were more independent and active, the children's care had better continuity, and the children recovered more quickly.

In this study, the parents in the intervention group adopted the counselled information about the child's limited preoperative fasting and successfully followed the instructions for the child's preoperative nutrition. No delays or cancellations occurred in the operation schedules because of misunderstood preoperative fasting information, which is in line with the results of former studies (Gilbert et al. 1995, Murphy et al. 2000). Furthermore, no complications occurred and the preoperative fasting times of the children were better controlled and postoperative recovery expedited in the intervention group.

6.3.1 Parental knowledge, need-for-information and anxiety

The parents in both study groups adopted the information during the study process. The level of knowledge about the child's fasting increased in both study groups, but the change was more significant in the intervention group. Moreover, the anxiety of the parents in the intervention group was relieved, which did not happen in the control group. The intervention group also considered the quality of the information they had received better than the control group. These results confirm the effectiveness of the intervention. However, after the child's surgery, in both study groups, higher scores on the knowledge test were associated with less need-for-information and anxiety in the parents. Thus, more information is essential and facilitates the coping of the parents (Bellew et al. 2002, Spencer & Franck 2005, Le et al. 2007), and thereby the coping of their children (Felder-Puig et al. 2002), too. It is worth noticing that only two mothers had searched for more information about the child's fast in surgical care. On the other hand, it seems that parents, in general, are more worried about other things in the child's surgical process than the child's fasting. They do not actively think about implementing the child's preoperative fast and therefore do not seek information about it before the child's surgery. (Wisselo et al. 2004, Boston et al. 2005.) If parents are uncertain at home after the child's surgery, they will consult health-care professionals much more easily (Kanerva et al. 2003).

The factors that made postoperative ending of the child's fast easier or more complicated, according to the parents, were mainly the same in both study groups, but the parents in the intervention group considered the information about the child's postoperative ending of the fast helpful. It seems that the counselled parents in the intervention group had also

realized the connection between coping and information, because both study groups had received the same instructions in this respect. Knowledge about the postoperative ending of the child's fast increased more significantly among the parents of the intervention group than in the control group.

The education of the parents did not influence their assessments of the quality of the information they had been provided, but it seems that the parents whose basic education was lower had gained more benefit from the intervention. According to previous studies (Litman et al. 1996, Wisselo et al. 2004, Spencer & Franck 2005), parents' education level does not have an effect, but according to the results of present study, the education of the parents is worth noticing. The possible lower basic education of the parents should be taken into consideration when designing the information procedures for parents. Similarly, in this study, the level of parental need-for-information and anxiety goes hand in hand with the knowledge about the child's surgical care, a factor which should also be taken into account when the information procedures for parents, are designed. There are former studies showing anxiety even in those parents whose child has earlier been in surgical care (Ellerton & Merriam 1994). However, also in this study, the value of the parents in their child's surgical care was shown and should not be underestimated. They are excellent partners for the health-care professionals in paediatric ambulatory settings (Pendeville et al. 2000).

6.3.2 Child's preoperative fasting

The parents in the counselled intervention group complied well with the instructions for the child's preoperative nutrition. They gave their child at most the allowed portions of clear fluids on the morning of surgery, although some earlier studies have had doubts about the patients' ability to understand the changed fasting instructions (Gilbert et al. 1995, Murphy et al. 2000). The written guidelines for the control group on the timing and the quality of allowed fluids were similar to those of the intervention group. However, nearly all children in the control group were without any nutrition from the previous evening. The probable reason for this is that the parents in the control group did not think about the issue, despite the written instructions, because the child's operation was early in the morning. If the operation of their child had been later in the day, there might have been more variation in preoperative fasting times. In addition, some of the parents may have had fears about implementing the limited preoperative fasting time without verbal information, and give fluids to their child.

6.3.3 Child's safety

The parents in both study groups adopted the information during the study process and followed the instructions for the child's preoperative nutrition. None of the parents made mistakes in the preoperative nutrition of the child and the preoperative fasting times

of the children were well controlled in the intervention group (Castillo-Zamora et al. 2005). However, there were no significant differences between the study groups in the behaviour of the children at home on the morning of surgery.

Despite the limited preoperative fasting time, and the more adequate menu on the previous evening in the children of the intervention group, the children in both study groups were nervous, irritable and tearful on the morning of surgery. Although in the intervention group, the preoperative fasting was shorter and nutrition was successfully carried out according to the instructions, it does not appear to have had an effect on the nervousness, irritability and tearfulness of the children. It seems that the children mostly resigned themselves to the fasting, and only few children in both study groups expressed thirst or hunger, although limited preoperative fasting has been supposed to relieve the child's preoperative experience (Castillo-Zamora et al. 2005).

In this study, the portions of preoperative fluids were determined according to the child's weight, although former studies have confirmed that unlimited amounts of clear fluids are allowed up to two hours before surgery in children (Phillips et al. 1993, Ingebo et al. 1997). The purpose of the exact portions of fluids was to ensure the children's safety in the experimental design. Furthermore, in normal practice, counselling on the child's limited preoperative fasting would be integrated into normal preoperative counselling; it is not meant to be a separate counselling situation as it was in this study design. Thus, the time spent on the intervention does not describe the actual time spent on preoperative counselling on a limited preoperative fast in normal practice. However, the separate counselling situation was used not only to keep the intervention the same as possible in all cases but also to ensure the safety of the participating children in the study. Moreover, the parents in this study were able to follow more restricted instructions than are recommended by the guidelines. Complications, such as aspiration during anesthesia induction, did not occur during the children's surgery. Thus, according to the results of this study, there is no fear of aspiration when using guidelines for limited preoperative fasting times in paediatric tonsillectomy patients even after active preoperative face-to-face counselling of the parents.

6.3.4 Child's postoperative recovery

There were differences in the children's postoperative recovery between the study groups. In both study groups postoperative pain was the most significant problem in the children's recovery during the first 24 hours after tonsillectomy. However, the children in the control group were more restless and significantly more in pain in the PACU compared to the intervention group; especially the children whose previous operation had been over a year earlier. The children in the intervention group had been on a preoperative visit and were possibly therefore more familiar with the situation. Thus, the preoperative visit itself may have influenced the intervention and the children's

postoperative pain. Also, the preoperative interactive counselling may have decreased parental anxiety and, thereby, also the anxiety of the children, so they might have been more peaceful even when the parents were not present (McEven et al. 2007). However, the difference between the groups was so obvious, and since there was no significant correlation with the child's sex, weight or age, it can be concluded that the intervention had an effect on the child's pain after tonsillectomy in the PACU. One of the reasons for this may be that there is less pain when the throat is not as dry as it is in children who have fasted for longer times. Furthermore, the result is even more reliable since the children in neither group had nausea or vomiting as an interfering factor in the PACU.

The nauseousness of the children began to increase in the 2nd phase recovery room. However, despite increasing nausea, the hunger of the children also began to increase. The children started postoperative oral intake 2.5 – 3 hours after surgery, and they were most nauseous four hours postoperatively. More than half of the children vomited, mostly blood. Thus, it seems that the first portions of nutrition increase the need to vomit, especially if there is blood in the child's stomach. Former studies have recommended that drinking is not a criterion for discharge (Nicklaus & Steinie 1995, Messner & Barbita 1997, Tabae et al. 2006) but if the child is nauseous and there is doubt about blood in the child's stomach, it might be beneficial to make the child vomit before discharge. However, drinking before discharge does not have to be a discharge criterion; only a method to expedite the child's recovery when it is needed. The nausea of the children decreased after vomiting and their hunger continued to grow, as did their pain, probably because of vomiting and also swallowing when the children began to eat.

In both study groups, the children were in most pain at home eight hours after surgery. The reason for this may be that the children had vomited which contaminates the wound in the throat. Another probable reason, in addition to vomiting and swallowing, may be that the effect of the medication they had received in hospital had decreased. Thus, the parents should be informed verbally and in written form that the peak in postoperative pain is reached at home, eight hours postoperatively, and that pain medication should then be given by the parents.

The age of the children did not have an effect on the children's pain, but the smaller children in the control group seemed to be thirstier and hungrier on the evening of surgery and on the following morning. That was perhaps because of their longer postoperative fasting caused by nausea. They compensated later for their longer fasting time by taking more nutrition. However, there were also children in both study groups who only received the intravenous fluids in hospital and almost no nutrition during the 24 postoperative hours. According to some previous studies, there is no role for routine intravenous fluid replacement in children undergoing uncomplicated tonsillectomy because dehydration leads to thirst and drinking (Wilson et al. 1990). However, uncomplicated tonsillectomy

does not ensure the child's adequate oral intake after surgery because of pain and nausea, even if the child feels thirst and hunger. This study confirms that dehydration is one of the risk factors after pediatric ambulatory tonsillectomy (Zhao & Berkowitz 2006).

The postoperative fasting time in children may last up to the following morning: the smaller the child the higher the risk of dehydration. On the following morning, the children in this study, had recovered well in the intervention group, but the children in the control group were still significantly in pain, and in addition, thirsty and hungry. They were also more nervous and irritated. The children's pain in the control group had been at the same level during the first 24 hours as if the children and their parents had resigned themselves to the pain. However, the parents reacted to the child's pain and medicated the child at least once during the early morning hours, but only a few children in both groups had received medication during the night. The last assessment of the pain was later in the morning, but an assessment promptly after the child's waking would have given better information about the child's first morning after tonsillectomy (Salonen et al. 2002). However, at this time point, limited preoperative fasting hardly had an effect, anymore, but it seems that the intervention itself had an effect on the parents' and the children's attitudes to their own active role in the counselled intervention group (Kristensson-Hällström et al. 1997; Hatava et al. 2000). This might have been one of the reasons for their better coping on the first postoperative morning. When the parents in the intervention group had considered the information about the postoperative ending of the child's fast as helpful, it seems that they had also been able to benefit from the information better. They seemed to have been more active and independent in the child's care on the evening of surgery.

The parents in the intervention group more regularly offered saltier food alternatives to the child already on the evening of surgery, when the child's hunger was increasing. It seems that there is no benefit in limiting the child's diet after tonsillectomy. In a study by Brodsky et al. (1993), in a "non-restricted" group, the children ate more junk food and spicy food and were less nauseous. Swallowing more compact nutrition may also reduce the pharyngeal muscle spasm and thereby also the pain in the throat. When children are allowed to choose foods associated with their regular diet, this may also decrease their pain and nausea, and thereby improve their oral intake (Hall & Brodsky 1995).

It is worth noticing that after the PACU, the VAS scores of the children did not increase above six, but despite adequate pain medication, nor did they decrease to three, which has been considered a clinically significant level of pain (Finley et al. 1996). Thus, the children's pain after tonsillectomy is not totally avoided; obviously because of the location of the wound. The wound is not allowed to recover in peace because of vomiting and attempts to drink and eat. (Sutters & Miaskowski 1997, Chhibber et al. 1999, Holzmann et al. 2000, Hamers et al. 2002, Alatas et al. 2006, Huth & Broome 2007.)

Most of the children vomited which has also been shown in former studies (Sutters et al. 2005, Kanerva et al. 2003). However, the VAS scores assessing the children's nausea did not increase above four during the first 24 hours, and the highest scores were found four hours after surgery. When the child's stomach was empty of blood, the nausea began to decrease. In this study, the most significant reason for the children's nausea after tonsillectomy seemed to be the swallowed blood. The treatment of choice for nausea is vomiting the swallowed blood when the child is still in hospital. The health-care personnel is able to assess that the vomited blood is not fresh. After vomiting the swallowed blood, the children were ready to be discharged. If the child is premedicated to prevent postoperative nausea and vomiting, the prevention may mask possible postoperative bleeding (Chibber et al. 1999, Kokki & Salonen 2002), although the incidence of primary haemorrhage during the immediate postoperative hours after paediatric tonsillectomy is reported to be relatively low (Prim et al. 2003, Asiri et al. 2006). However, blood loss may be evident when the child vomits at home (Hamid et al 1998).

Postoperative pain and nausea are common in paediatric tonsillectomy patients and these clinical problems have not been satisfactorily solved. No single method has been found to treat the child's posttonsillectomy pain completely, and the reason for posttonsillectomy nausea has been found to be multifactorial. It seems that complementary methods could be valuable. In this study, the child's limited preoperative fast seems to be promising as a potential way to relieve the child's postoperative pain. In addition, the child is less thirsty before surgery, and postoperatively, the throat is less dry. However, although there was no significant effect on postoperative nausea, the child with preoperative nutrition is better prepared for the stress and postoperative vomiting. The children in the intervention group were also postoperatively significantly less irritated than were the children in the control group. However, it seems that the child's adequate postoperative oral intake after tonsillectomy is not only a result of absence of nausea or successful pain relief. The quality and timing of the postoperative oral intake may, in itself, have an influence on the child's postoperative pain and nausea, and thereby promote the child's recovery by helping the child to escape from the circle of pain, nausea and vomiting, thirst and hunger, and poor oral intake.

6.4 Conclusions

The preoperative face-to-face counselling of the parents is an effective way to increase parental knowledge and decrease parental need-for-information and anxiety. When preoperative face-to-face counselling of the parents is provided on the child's limited preoperative fasting and active preoperative nutrition, this will safely relieve the child's experience during the surgical process and promote his/her postoperative recovery after tonsillectomy.

The conclusions of the study according to the research questions:

1. Preoperative nutritional face-to-face counselling by a nurse on the child's limited preoperative fasting and active preoperative nutrition increases parental knowledge, and decreases their need-for-information and anxiety in paediatric ambulatory tonsillectomy?
2. The child's limited preoperative fasting and active preoperative nutrition is safely implemented at home, by the parents, without increasing mistakes in preoperative fasting and complications in paediatric ambulatory tonsillectomy?
3. Preoperative nutritional face-to-face counselling of the parents on the child's limited preoperative fasting and active preoperative nutrition promotes the child's postoperative recovery by reducing pain during the first postoperative hours but not postoperative nausea and vomiting in paediatric ambulatory tonsillectomy. The child's postoperative oral intake is not significantly improved, either. However, counselling of the parents seems to promote their activity in the child's postoperative care and thereby the child's recovery may be expedited towards the following morning.

6.5 Implications for clinical practice

The prime nursing intervention in this study was the preoperative nutritional face-to-face counselling of the parents on the child's limited preoperative fasting and the active preoperative nutrition. The preoperative face-to-face counselling of the parents is an effective way to clarify written information, especially when there is variation in parental education. However, although the parents seemed to have understood the changed guidelines and implemented the instructions well, the primary responsibility remained with the counselling researcher. The same issue should be taken into consideration when the active preoperative nutrition of the child and counselling on it are introduced into nursing practice. However, the child's limited fasting time might have been avoided by the professionals because of fear of confusions in operation schedules. On the other hand, shorter preoperative fasting time may have been the prevailing guideline but its implementation has been passive. Health-care professionals may have been under the illusion that they were carrying out modern fasting guidelines in children.

In this study, the children were operated first in the morning, a fact that decreased the fasting time. If the operation is later, the preoperative fasting time may be as long as 20 hours. Furthermore, younger children may go to sleep earlier and be at risk of fasting even longer than older children. However, children's perioperative fluid fasting can be decreased with preoperative face-to-face counselling on the child's limited preoperative fasting and active preoperative nutrition. In this study, the amounts of fluids given in

the morning were calculated according to the child's weight, but previous studies have confirmed that unlimited amounts of clear fluids are safe in children up to two hours preoperatively (RCN 2005). Clinical practice should take this fact into account, although it may appear to be difficult to maintain limited preoperative fasting for two hours for all children in the operative schedule. However, at the very least, adequate amounts of clear fluids, e.g. in the form of a prescription (Castillo-Zamora et al. 2005), two hours before the beginning of the operations of the day for all children in the operation schedule would make sure that no child's pre- or perioperative fast will last excessively long. Preoperative oral nutrition with a special carbohydrate-rich beverage has been shown to be useful and safe in this respect (Soreide et al. 2005, Nygren et al. 2007). Furthermore, it may be that preoperative nutrition of all children on the morning of surgery could make operation schedules even more flexible when none of the children has fasted since the previous evening. It seems that the children whose operation is later in the day would benefit most from nutrition on the morning of surgery, a fact which ensures the necessity of limiting the child's prolonged preoperative fasting time. It is not crucial that every child fasts preoperatively for exactly only two hours; the most important thing is that none of them fasts for as long as 14 – 20 hours. In clinical practice, implementation of the limited preoperative fasting in pediatric adenotonsillectomy / tonsillectomy patients should be considered more as an opportunity to influence the child's perioperative experience and postoperative recovery. After paediatric tonsillectomy, the experience of the child seems to be better (Derkay et al. 2006), and the tonsillectomy appears to cause less inconvenience if the parents are counselled on the child's limited preoperative fasting (Table 7).

The results of this study are generalizable to children undergoing tonsillectomy. However, the possibility to influence the fluid balance preoperatively and thereby to promote postoperative recovery concerns all surgical patients

Table 7. Practical implications

Practical implications:	
1.	Face-to-face counselling of the parents is an effective way to clarify written information concerning their child's care.
2.	Children's excessive preoperative fasting times can be limited by preoperative face-to-face counselling of the parents.
3.	Postoperative recovery in paediatric tonsillectomy can be promoted by the child's limited preoperative fasting.
4.	Implementation of the child's limited preoperative fast should be taken as an opportunity to influence the child's experience during the surgical process.
5.	Preoperative nutrition of all children two hours before the first operation in the schedule of the day could make schedules more flexible for changes.

6.6 Implications for further research

In this study, the preoperative face-to-face counselling of the parents by a nurse on the child's limited preoperative fasting and active preoperative nutrition has been shown to be an effective and safe method to promote the child's postoperative recovery. However, double intervention is a common setting in normal nursing practice, and therefore, interventions, counselled by a nurse and implemented by the parents, should be examined if they are safe and significantly effective; at least when interventions are raising questions about safety of the children. The level of parental knowledge and capability for acting according to the offered information is crucial for the child's experience and safety.

The following aspects for further research are presented:

1. Intervention which is going to be counselled, has to be examined and shown to be safe which requires wide exploration of former studies, especially if there have been discussions about the adequacy of the intervention. Essential questions might be: Is the intervention suitable for counselling by a nurse? Is the intervention complicated to adopt or difficult to implement? Is the intervention feasible to be implemented by a parent? How feasible is the intervention for counselling of a child? How much a child wants to know about the intervention, and how much is feasible to be counselled?
2. In this study, the method of providing preoperative knowledge was face-to-face counselling with the written instructions. The parents and the children were present and a direct interactive situation was possible between all participants. Furthermore, the parents were able to hear discussions between the child and the nurse which may have relieved their discussions with the child at home. However, situations when information has to be provided without face-to-face counselling will occur and former studies have shown that written instructions only, cannot provide enough knowledge, and the parents need more guidance how to use leaflets directed at the children. Additional methods to provide knowledge to the parents and to the children have to be examined further.
3. The Internet has been investigated as a source of preoperative knowledge in paediatric surgery but directed mainly at the parents. However, it should be examined closer how the child him/herself will gain about information through the Internet without the face-to-face counselling by a nurse. Furthermore, it is worth investigating the following questions: what is the degree of interactive relationship between parents, children and a nurse when the Internet information is used, what is the role of email instead of telephone calls, and is it relevant to use the term counselling in these cases in paediatric surgical care? Furthermore, the number of immigrants from different countries and cultures in health care system

is growing also in ambulatory surgery. This requires skills to provide knowledge in foreign languages, verbal and written. What would be the possibilities of the Internet to provide knowledge to the families in their own language? What would be the possibilities of collaboration of different health care systems, even between different countries, in providing information for immigrant families?

4. Developing and globalizing ambulatory surgery requires good quality of knowledge of nurses. Nurses have to be prepared to counsel the parents and the children or only the parents if they will be the sources of knowledge for their children. What is the level of knowledge of nurses about the intervention and the counselling on it? What is the level of their knowledge about counselling of the parents and the children, or counselling of the parents to offer knowledge to their children? How are they aware of possibilities and use of different methods to provide knowledge? However, achieved knowledge or skills to counsel is not enough. Achieved level to provide knowledge concerning health care of the families and other patients has to be maintained. Benchmarking with other health care systems and occasional questionnaires from the parents and the children about the knowledge they have been offered and from the nurses about the knowledge they have been offering is quality assurance of patient education.

This study highlights the nature of several interventions in ambulatory surgery. Implementation of intervention often has two phases; the actual nursing intervention is counselling but the intervention which is targeted directly at the patient is implemented by others than health-care professionals. This study included double intervention, face-to-face counselling of the parents by a nurse and preoperative nutrition of the child by the parents, which made the study design challenging. Double interventions are teamwork of health care professionals, often between nurses and physicians. Many interventions require providing knowledge to the patients, and nurses may have often more opportunities to counsel of the patients. Developing nursing interventions, counselling and implementation of interventions requires diverse perspectives, so that the care of the patient, especially in the case of children, is safe and leads to an expeditious recovery.

REFERENCES

- Adanir T, Aksun M, Özgürbüz Uğur, Altin F & Sencan A. 2008. Does Preoperative Hydration Affect Postoperative Nausea and Vomiting? A Randomized, Controlled Trial. *Journal of Laparoendoscopic & Advanced Surgical Techniques* 18 (1), 1 – 4.
- Alatas N, San Imran, Cengiz M, Iynen I, Yetkin A, Korkmaz B & Kar M. 2006. A mean red blood cell volume loss in tonsillectomy, adenoidectomy and adenotonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 70, 835 – 841.
- Andrasik F, Powers SW & McGrath J. 2005. Methodological Considerations in Research With Special Populations Children and Adolescents. *Headache* 45, 520 – 525.
- Artinian NT, Froelicher ES & Vander Wal JS. 2004. Data and Safety Monitoring During Randomized Controlled Trials of Nursing Interventions. *Nursing Research* 53 (6), 414 – 418.
- Asiri SM, Abu-Bakr YA & Al-Enazi. 2006. Paediatric ENT day surgery. Is it safe practice? *Ambulatory Surgery* 12, 147 – 149.
- Bastable SB (Ed). 2006. *Essentials of patient education*. Sudbury: Jones and Bartlett Publishers.
- Beaumont W. 1833. *Experiments and Observations on the Gastric Juice and the Physiology of Digestion*. Plattsburgh: FF Allen. http://en.wikipedia.org/wiki/William_Beaumont.
- Bellew M, Atkinson KR, Dixon G & Yates A. 2002. The introduction of a paediatric anaesthesia information leaflet: an audit of its impact on parental anxiety and satisfaction. *Paediatric Anaesthesia* 12, 124 – 130.
- Bernier MJ, Sanares DC, Owen SV & Newhouse PL. 2003. Preoperative Teaching Received and Valued in a Day Surgery Setting. *AORN Journal* 77 (3), 563 – 582.
- Beyer JE, Villarruel AM & Denyes MJ. 1995. *The Oucher: User's manual and technical report*. New Jersey: Association for the Care of Children's Health.
- Bieri D, Reeve RA, Champion GD, Addecoat L & Ziegler JB. 1990. The Bieri pain scale. *Australian Journal of Paediatrics* 16, 23 – 30.
- Boston MM, Ruwe E, Duggins A & Willging P. 2005. Internet Use by Parents of Children Undergoing Outpatient Otolaryngology Procedures. *Archives of Otolaryngology – Head and Neck Surgery* 131, 719 – 722.
- Boutron I, Moher D, Altman DG, Schulz KF, Ravaud P for the CONSORT Group. 2008. *Annals of Internal Medicine* 148, 295 – 309.
- Brewer S, Gleditsch SL, Syblik D, Tietjens ME & Vacik HW. 2006. Pediatric Anxiety: Child Life Intervention in Day Surgery. *Journal of Pediatric Nursing* 21 (1), 13 – 22.
- Brodsky L, Radomski K & Gendler J. 1993. The effect of post-operative instructions on recovery after tonsillectomy and adenoidectomy. *International Journal of Pediatric Otorhinolaryngology* 25, 133 – 140.
- Burns N & Grove S. 2005. *The Practice of Nursing Research. Conduct, Critique and Utilization*. 5th ed. WB. Saunders Company, Philadelphia.
- Carter, B., McArthur, E. & Cunliffe, M. 2002. Dealing with uncertainty: parental assessment of pain in their children with profound special needs. *Journal of Advanced Nursing*, 38 (5), 449 – 457.
- Castillo-Zamora C, Castillo- Peralta LA & Navaocampo AA. 2005. Randomized trial comparing overnight preoperative fasting period Vs oral administration of apple juice at 06:00-6:30 AM in pediatric Orthopaedic surgical patients. *Pediatric Anesthesia* 15, 638 – 642.
- Chhibber AK, Lustik SJ, Thakur R, Francisco DR & Fickling KB. 1999. Effects of Anticholinergics on Postoperative Vomiting, Recovery, and Hospital Stay in Children Undergoing Tonsillectomy with or without Adenoidectomy. *Anesthesiology* 90 (3): 697–700.
- Clatworthy S, Simon K & Tiedeman ME. 1999. Child drawing: Hospital – An instrument designed to measure the emotional status of hospitalized school-aged children. *Journal of Pediatric Nursing* 14, 2 – 9.
- Colreavy MP, Nanan D, Benamer M, Donnelly M, Blaney AW, O'Dwyer TP & Cafferkey M. 1999. Antibiotic prophylaxis post-tonsillectomy: is it of benefit? *International Journal of Pediatric Otorhinolaryngology* 50, 15 – 22.
- Cook JA, Murrant NJ, Evans KL & Lavelle RJ. 1992. A randomized comparison of three post-tonsillectomy diets. *Clinical Otolaryngology* 17, 28 – 31.
- Cook-Sather SD & Litman RS. 2006. Modern fasting guidelines in children. *Best Practice & Research Clinical Anaesthesiology* 20 (3), 471 – 481.
- Coyne I. 2008. Children's participation in consultations and decision-making at health

- service level: A review of the literature. *International Journal of Nursing Studies* 45, 1682 – 1689.
- Crawford M, Lerman J, Christensen S & Farrow-Gillespie A. 1990. Effects of Duration of Fasting on Gastric Fluid pH and Volume in Healthy Children. *Anesthesia & Analgesia* 71, 400 – 403.
- D'Eredita R & Marsh RR. 2004. Contact diode laser tonsillectomy in children. *Otolaryngology Head and Neck Surgery* 131 (5), 732 – 735.
- Derkay CS, Darrow DH, Ewlch C & Sinacori JT. 2006. Post-Tonsillectomy Morbidity and Quality of Life in Pediatric Patients with Obstructive Tonsils and Adenoid: Microdebrider vs Electrocautery. *Otolaryngology – Head and Neck Surgery* 134, 114 – 120.
- EACH (European Association for Children in Hospital) 1988. *European Charter for Children in Hospital*. EACH, Leiden Netherlands. Retrieved 20th March 2008.
- <http://www.each-for-sick-children.org/the-each-charter-with-the-annotations-to-the-charter.html>
- Edwards SJL, Lilford RJ, Thornton J & Hewison J. 1998. Informed consent for clinical trials: in search of the “best” method. *Social Science & Medicine* 47 (11), 1825 – 1842.
- Egeli E, Harputluoglu U, Ozturk O, Oghan F & Kocak S. 2004. Can post-adenotonsillectomy morbidity be reduced by intravenous 24 h hydration in pediatric patients following adenotonsillectomy? *Journal of Pediatric Otorhinolaryngology* 68, 1047 – 1051.
- Elhakim M, Khalafallah Z, El-Fattah HA, Farouk S & Khatlab A. 2003. Ketamine reduces swallowing-evoked pain after paediatric tonsillectomy. *Acta Anaesthesiologica Scandinavica* 47, 604 – 609.
- Ellerton M-L & Merriam C. 1994. Preparing children and families psychologically for day surgery: an evaluation. *Journal of Advanced Nursing* 19, 1057 – 1062.
- Emerson BM, Wrigley SR & Newton M. 1998. Pre-operative fasting for paediatric anaesthesia. *Anaesthesia* 53, 326 – 330.
- Engelhardt T & Crawford M. 2001. Aspiration and regurgitation prophylaxis in paediatric anaesthesia. *Paediatric Anaesthesia* 11 (2), 147 – 150.
- Erickson CJ. 1990. Pain measurement in children: problems and directions. *Developmental and Behavioral Pediatrics* 11 (3), 135 – 137.
- ETENE 2001. Perspectives on medical research conducted in children. Final report of the on Working group Appointed by the National Advisory Board on Health Care Ethics.
- Ewah BN, Robb PJ & Raw M. 2006. Postoperative pain, nausea and vomiting following paediatric day-case tonsillectomy. *Anaesthesia* 61, 116 – 122.
- Farooq M, Tan K & Crowe AS. 2008. Fasting times in caregivers of children presenting for ambulatory surgery. *Pediatric Anesthesia* 18, 820 – 822.
- Fasting S, Soreide E & Raeder JC. 1998. Changing preoperative fasting policies. Impact of a national consensus. *Acta Anaesthesiologica Scandinavica* 42 (10), 1188 – 1191.
- Fazel MR, Yegane-Moghaddam A, Forghani Z, Aghadoost D, Mahdian M & Fakharian E. 2007. The effect of dexamethasone on postoperative vomiting and oral intake after adenotonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 71, 1235 – 1238.
- Felder-Puig R, Maksys A, Noestlinger C, Gadner H, Stark H, Pflugler A & Topf R. 2002. Using a children’s book to prepare children and parents for elective ENT surgery: results of a randomized clinical trial. *International Journal of Pediatric Otorhinolaryngology* 67 (1), 35 – 41.
- Ferrari LR, Rooney FM, Rockoff MA. 2000. Preoperative fasting practices in pediatrics. *Anesthesiology* 90, 978 – 980.
- Finley GA, McGrath PJ, Forward SP, McNeill G & Fitzgerald P. 1996. Parents’ management of children’s pain following “minor” surgery. *Pain* 64, 83 – 87.
- Friesen RH, Wurl JL, Friesen RM. 2002. Duration of preoperative fast correlates with arterial blood pressure response to halothane in infants. *Anesthesia & Analgesia* 95, 1572 – 1576.
- Gilbert SS, Easy WR, Fitch WW. 1995. The effect of pre-operative oral fluids on morbidity following anaesthesia for minor surgery. *Anaesthesia* 50, 79 – 81.
- Gilmartin J & Wright K. 2007. The nurse’s role on day surgery: a literature review. *International Nursing Review* 54, 183 – 190.
- Green CR, Pandit SK, Schork MA. 1996. Preoperative fasting time: is the traditional policy changing? Results of a national survey. *Anesthesia & Analgesia* 83, 123-128.
- Hall MD & Brodsky L. 1995. The effect of postoperative diet on recovery in the first twelve hours after tonsillectomy and adenotonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 31, 215 – 220.

- Hallström I & Elander G. 2004. Decision-making during hospitalization; parents' and children's involvement. *Journal of Clinical Nursing* 13 (3), 367 – 375.
- Hamers JPH & Abu-Saad HH. 2002. Children's pain at home following (adeno)tonsillectomy. *European Journal of Pain* 6, 213 – 219.
- Hamid SK, Selby IR, Sikich N & Lerman J. 1998. Vomiting After Adenotonsillectomy in Children: A Comparison of Ondansetron, Dimenhydrinate, and Placebo. *Society for Pediatric Anesthesia* 86, 496–500.
- Hanif J & Frosh A. 1999. Effect of chewing gum on recovery after tonsillectomy. *Auris Nasus Larynx* 26, 65 – 68.
- Hannallah R, Broadman L, Balman A, Abramowitz M & Epstein B. 1987. Comparison of caudal and ilioinguinal/iliohypogastric nerveblocks for control of post-orchiopey pain in pediatric ambulatory surgery. *Anesthesiology* 66, 832 – 834.
- Hatava P, Olsson GL & Lagerkranser M. 2000. Preoperative psychological preparation for children undergoing ENT operations: a comparison of two methods. *Pediatric Anesthesia* 10, 477 – 486.
- Hausel J, Nygren J, Lagerkranser M, Hellström PM, Hammarqvist F, Almström C, Lindh A, Thorell A & Ljungvist O. 2001. A Carbohydrate-Rich Drink Reduces Preoperative Discomfort in Elective Surgery Patients. *Anesthesia & Analgesia* 93, 1344 – 1350.
- Holt R, Coulthard KP, Sinclair M, Roberts G, van der Walt J, Mackenzie V & Rasmussen M. 2000. Tropisetron plus dexamethasone is more effective than tropisetron alone for the prevention of postoperative nausea and vomiting in children undergoing tonsillectomy. *Paediatric Anaesthesia* 10, 181 – 188.
- Holzmann D, Kaufman T & Boesch M. 2000. On the decision of outpatient adenoidectomy and tonsillectomy in children. *International Journal of Pediatric Otorhinolaryngology* 53 (1), 9 – 16.
- Hulcrantz E, Linder A & Markström A. 1999. Tonsillectomy or tonsillotomy? – a randomized study comparing postoperative pain and long term effects. *International Journal of Pediatric Otorhinolaryngology* 51, 171 – 176.
- Huth MM & Broome ME. 2007. A Snapshot of Children's Postoperative Tonsillectomy Outcomes at Home. *Journal for Specialists in Pediatric Nursing* 12 (3), 186 – 195.
- Ingebo KR, Rayhorn NJ, Hecht RM, Shelton MT, Silber GH & Shub MD. 1997. Sedation in children: Adequacy of two-hour fasting. *The Journal of Pediatrics* 131 (1), 155 – 158.
- James CF, Modell JH & Gibbs CD. 1984. Pulmonary aspiration – Effect of volume and pH in the rat. *Anesthesia & Analgesia* 63, 665 – 668.
- Kaan MN, Odabasi O, Gezer E & Daldal A. 2006. The effect of preoperative dexamethasone on early oral intake, vomiting and pain after tonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 70, 73 – 79.
- Kabalak AA, Akcay M, Akcay F & Gogus N. 2005. Transcutaneous Electrical Acupoint Stimulation Versus Ondansetron in the Prevention of Postoperative Vomiting Following Pediatric Tonsillectomy. 2005. *The Journal of Alternative and Complementary Medicine* 11 (3), 407 – 413.
- Kain ZN, Caramico LA, Mayes LC, Geneviro JL, Bornstein MH & Hofstadter MB. 1998. Preoperative Preparation Programs in Children: A Comparative Examination. *Anesthesia & Analgesia* 87, 1249 – 1255.
- Kanerva M, Tarkkila P & Pitkäranta A. 2003. Day-case tonsillectomy in children: parental attitudes and consultation rates. *International Journal of Pediatric Otorhinolaryngology* 67, 777 – 784.
- Kawana S, Uzuki M, Nakae Y & Namiki A. 2000. Preoperative anxiety and volume and acidity of gastric fluid in children. *Paediatric Anaesthesia* 10, 17 – 21.
- Kearney R, Mack C & Entwistle L. 1998. Withholding oral fluids from children undergoing day surgery reduces vomiting. *Paediatric Anaesthesia* 8 (4), 331 – 336.
- Keidan I, Gozal D, Minuskin T, Weinberg M, Barkaly H & Augarten A. 2004. The effect of fasting practice on sedation with chloral hydrate. *Pediatric Emergency Care* 20 (12), 805 – 807.
- Kim MS, Cote CJ, Cristoloveanu C, Roth AG, Vornov P, Jennings MA, Maddalozzo JP & Sullivan C. 2007. There Is No Dose-Escalation Response to Dexamethasone (0.0625-1.0 mg/kg) in Pediatric Tonsillectomy
- Adenotonsillectomy Patients for Preventing Vomiting, Reducing Pain, Shortening Time to First Liquid Intake, or the Incidence of Voice Change. *Anesthesia & Analgesia* 104, 1052 – 1058.
- Kokki H & Salonen A. 2002. Comparison of pre- and postoperative administration of ketoprofen for analgesia after tonsillectomy in children. *Paediatric Anaesthesia* 12, 162 – 167.
- Korkmaz O, Bektas D, Cobanoglu B & Caylan R. 2008. Partial tonsillectomy with scalpel in children with obstructive tonsillar hypertrophy. *International Journal of Pediatric Otorhinolaryngology* 72, 1007 – 1012.

- Kramer FM. 2000. Patient perceptions of the importance of maintaining preoperative NPO status. *AANA- Journal* 68 (4), 321 – 328.
- Kristensson-Hallström I. 1999. Strategies for feeling secure influence parents' participation in care. *Journal of Clinical Nursing* 8, 586 – 592.
- Kristensson-Hallström I, Elander G & Malmfors G. 1997. Increased parental participation in a paediatric surgical day-care unit. *Journal of Clinical Nursing* 6, 297 – 302.
- Lacarte MPR. 1999. Outpatient tonsillectomy: a prospective 7 years study – complications and comparison with inpatients. *Ambulatory Surgery* 7, 25 – 29.
- Lawhorn CD, Bower C, Brown Jr. RE, Schmitz ML, Kymer PJ, Stoner JA, Vollers JM & Shirey R. 1996. Ondansetron decreases postoperative vomiting in pediatric patients undergoing tonsillectomy and adenoidectomy. *International Journal of Pediatric Otorhinolaryngology* 36, 99 – 108.
- Le T, Drolet J, Parayno E, Rosmus C & Castiglione S. 2007. Follow-up Phone Calls After Pediatric Ambulatory Surgery For Tonsillectomy: Why Can We Learn From Families? *Journal of PeriAnesthesia Nursing* 22, 256 – 264.
- Leino-Kilpi H, Välimäki M, Arnby M, Dassen T, Gasull M, Lemonidou C, Scott PA, Bansemir G, Cabrera E, Papaevangelou H & McParland. 2000. Patient's autonomy, Privacy and Informed Consent. Amsterdam: IOS Press.
- Lewis D. 2003. Computers in Patient Education. *Computers, Informatics and Nursing* 21 (2), 88 – 96.
- Li HC, Lopez V & Lee TLI. 2007. Psychoeducational preparation of children for surgery: The importance of parental involvement. *Patient Education and Counseling* 65, 34 – 41.
- Litman RS, Berger AA & Chhibber A. 1996. An evaluation of preoperative anxiety in a population of parents of infants and children undergoing ambulatory surgery. *Pediatric Anesthesia* 6, 443 – 447.
- Maekawa N, Mikawa K, Yaku H, Nishina K & Obara H. 1993. Effects of 2-, 4- and 12- hour fasting intervals on preoperative gastric fluid pH and volume, and plasma glucose and lipid homeostasis in children. *Acta Anaesthesiologica Scandinavica* 37 (8), 783 – 787.
- Mahajan L, Wyllie R, Steffen R, Kay M, Kitaoka G, Dettorre J, et al. 1998. The effects of a psychological preparation program on anxiety in children and adolescents undergoing gastrointestinal endoscopy. *Journal of Pediatric Gastroenterology and Nutrition* 27, 161 – 165.
- Markel MD. 1991. The Power of a Statistical Test. What Does Insignificance Mean? *Veterinary Surgery* 20 (3), 209 – 214.
- McEwen A, Moorthy C, Quantock C, Rose H & Kavanach R. 2007. The effect of videotaped preoperative information on parental anxiety during anesthesia induction for elective pediatric procedures. *Pediatric Anesthesia* 17, 534 – 539.
- McGrath PA. 1989. Evaluating a Child's Pain. *Journal of Pain and Symptom Management* 4 (4), 198 – 214.
- McGrath PA, Seifert CE, Speechley KN, Booth JC, Stitt L & Gibson MC. 1996. A new analogue scale for assessing children's pain: an initial validation study. *Pain* 64, 435 – 443.
- McGrath PJ, Johnson G, Goodman JT, et al. 1985. CHEOPS: A behavioural scale for rating postoperative pain in children. *Advances in Pain Research and Therapy* 9, 395 – 402.
- Mendelson CL. 1946. The aspiration of stomach contents in the lungs during obstetric anesthesia. *American Journal of Obstetrics and Gynecology* 52, 191 – 205.
- Messner AH & Barbita JA. 1997. Oral fluid intake following tonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 39, 19 – 24.
- Miles, M., & Huberman, A. 1994. Qualitative data analysis, 2nd ed. Thousand Oaks, PA: Sage.
- Miller KM, Wysocki T, Cassady JF, Cancel D & Izenberg N. 1999. Validation of Measures of Parents' Preoperative Anxiety and Anesthesia Knowledge. *Anesthesia & Analgesia* 88,(2), 251 – 257.
- Moerman N, van Dam FSAM & Muller M & Oosting H. 1996. The Amsterdam Preoperative Anxiety and Information Scale (APAIS). *Anesthesia & Analgesia* 82: 445 – 451.
- Moir MS, Bair E, Shinnick P & Messner B. 2000. Acetaminophen Versus Acetaminophen With Codeine After Pediatric Tonsillectomy. *The Laryngoscope* 110, 1824 – 1827.
- Moyao-Garcia D, Corrales-Fernandez MA, Blanco-Rodriguez G, Sanchez-Hernandez E & Nava-Ocampo AA. 2001. Benefits of Oral Administration of an Electrolyte Solution Interrupting a Prolonged Preoperative Fasting Period in Pediatric Patients. *Journal of Pediatric Surgery* 36 (3), 457 – 459.
- Murphy GS, Ault ML, Wong HY & Szokol JW. 2000. The effect of a New NPO Policy on Operating Room Utilization. *Journal of Clinical Anesthesia* 12, 48 – 51.

- Nicklaus P & Steinie E. 1995. Short-Stay Outpatient Tonsillectomy. *Archives of Otolaryngology – Head and Neck Surgery* 121 (5), 521 – 524.
- Nikandish R, Maghsoodi B, Khademi S, Motazedian S & Kaboodkhani R. 2008. Peritonsillar infiltration with bupivacaine and pethidine for relief of post-tonsillectomy pain: a randomized double-blind study. *Anesthesia* 63, 20 – 25.
- Nygren J, Thorell A & Ljungqvist O. 2007. Are there any benefits from minimizing fasting and optimization of nutrition and fluid management for patients undergoing day surgery? *Current Opinion in Anaesthesiology* 20, 540 – 544.
- Ottenbacher KJ. 1989. Satisfied conclusion validity of early intervention research with handicapped children. *Exceptional Children* 55 (6), 534 – 540.
- Ozlugedik S, Genc S, Unal A, Elhan AH, Tezer M & Titiz. 2006. Can postoperative pains following tonsillectomy be relieved by honey? A prospective, randomized, placebo controlled preliminary study. *International Journal of Pediatric Otorhinolaryngology* 70, 1929 – 1934.
- Pandit SK, Loberg K & Pandit UA. 2000. Toast and Tea Before Elective Surgery? A National Survey on Current Practice 90, 1348 – 1351.
- Park AH & Kim H. 2002. Intravenous home hydration in pediatric patients following adenotonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 66, 17 – 21.
- Park A, Proctor MD, Alder S & Muntz H. 2007. Subtotal bipolar tonsillectomy does not decrease postoperative pain compared to total monopolar tonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 71, 1205 – 1210.
- Pelander T. 2008. The Quality of Paediatric Nursing Care – Children’s perspective. *Annales Universitatis Turkuensis, Series D, part 829*. Turku: University of Turku.
- Pendeville PE, von Montigny S, Dort JP & Veyckemans F. 2000. Double randomized study of tramadol vs. paracetamol in analgesia after day-case tonsillectomy in children. *European Journal of Anaesthesiology* 17, 576 – 582.
- Phillips S, Hutchinson S & Davidson T. 1993. Preoperative Drinking does not affect gastric contents. *British Journal of Anaesthesia* 70, 6 – 9.
- Pieper B, Sieggreen M, Freeland B, Kulwicki P, Frattaroli M, Sidor D, Palleschi MT, Burns J, Bednarski D & Garretson B. 2006. Discharge Information Needs of Patients After Surgery. *Wound, Ostomy and Continence Nursing* 33, 281 – 291.
- Polit DF & Hungler BP. 1997. *Essentials of Nursing Research. Methods, Appraisals, and Utilization*, 4th ed. Lippincott, Philadelphia.
- Polit DF & Hungler BP. 1999. *Nursing Research. Principles and Methods*, 6th ed. Lippincott, Philadelphia.
- Pop RS, Manworren RCB, Guzzetta CE, Hynan LS. 2007. Perianesthesia Nurses’ Pain Management After Tonsillectomy and Adenoidectomy: Pediatric Patient Outcomes. *Journal of PeriAnesthesia Nursing* 22 (2), 91 – 101.
- Poskiparta M, Kettunen T & Liimatainen L. 1998. Reflective Questions in Health Counseling. *Qualitative Health Research* 8 (5), 682 – 693.
- Prim MP, De Diego JI, Jimenez-Yuste V, Sastre N & Rabanal I. 2003. *International Journal of Pediatric Otorhinolaryngology* 67, 341 – 344.
- Raidoo DM, Rocke DA & Brock-Utne JG, Marszalek A & Engelbrecht HE. 1990. Critical volume for pulmonary acid aspiration: reappraisal in a primate model. *British Journal of Anaesthesia* 65, 248 – 250.
- Redmon BK (Ed). 2001. *The practice of patient education*. 9th ed. St. Louis: Mosby.
- Redsell SA & Cheater FM. 2001. Methodological issues in nursing research. The data protection act (1998): Implications for health researchers. *Journal of Advanced Nursing* 35 (4), 508 – 514.
- Riskin DJ, Longaker MT & Krummel TM. 2006. The ethics of innovation in pediatric surgery. *Seminars in Pediatric Surgery* 15, 319 – 323.
- Rosbe KW, Jones D, Jalisi S & Bray MA. 2000. Efficacy of Postoperative Follow-up Telephone Calls for Patients Who Underwent Adenotonsillectomy. *Archives of Otolaryngology – Head and Neck Surgery* 126 (6), 718 – 722.
- Royal College of Nursing (RCN) (2005) *Clinical practice guidelines: Perioperative fasting in adults and children*. Royal College of Nursing. London.
- Rømsing J, Østergaard D, Drozdiewicz D, Schultz P & Ravn G. 2000. Diclofenac or acetaminophen for analgesia in paediatric tonsillectomy outpatients. *Acta Anaesthesiologica Scandinavica* 44, 291 – 295.
- Salonen A, Kokki H & Nuutinen J. 2002. The effect of ketoprofen on recovery after tonsillectomy in children: a 3-week follow – up study. *International Journal of Pediatric Otorhinolaryngology* 62, 143 – 150.
- Schildts BJ, Palermo TM, Powers JD, Fernandez SA & Smith GA. 2005. The role of developmental and contextual factors in predicting children’s use of a visual analogue scale. *Children’s Health Care* 34, 273 – 287.
- Schreiner MS, Nicolson SC, Martin T, Whitney L. 1992. Should Children Drink before Discharge

- from Day Surgery. *Anesthesiology* 76, 528 – 533.
- Schreiner MS, Triebwasser A & Keon TP. 1990. Ingestion of liquids with preoperative fasting in pediatric outpatients. *Anesthesiology* 72 (4), 593 – 597.
- Schoenfelder RC, Ponnamma CM, Freyle D, Wang S-M & Kain ZN. 2006. Residual Gastric Fluid Volume and Chewing Gum Before Surgery. *Anesthesia & Analgesia* 102, 415 – 417.
- Semere W, Karamanoukian HL, Levitt M, Edwards T, Murero M, D'Ancona G, Donias HW & Glick PL. 2003. A Pediatric Surgery Study: Parent Usage of the Internet for Medical Information. *Journal of Pediatric Surgery* 38 (4), 560 – 564.
- Senayli Y, Senayli A, Erkorkmaz □, Ozkan F & Kaya Z. 2007. Effects of the preoperative nutritional beverage, water and fasting policies on the gastric acidity levels during surgery: a clinical pilot study at the pediatric age group. *Internet Journal of Anesthesiology* 14 (2). (www.cinahl.com/cgi-bin/refsvc?jid=2142&accno=2009808492)
- Sethi AK, Chatterji C, Bhargava SK, Narang P & Tyagi A. 1999. Safe pre-operative fasting times after milk or clear fluid in children. *Anaesthesia* 54, 51 – 85.
- Simons J, Franck L & Roberson E. 2001. Parent involvement in children's pain care: views of parents and nurses. *Journal of Advanced Nursing* 36 (4), 591 – 599.
- Sjöling M, Nordahl G, Olofsson N & Asplund K. 2003. The impact of preoperative information on state anxiety postoperative pain and satisfaction with pain management. *Patient Education and Counseling* 51, 169 – 176.
- Smith L & Callery P. 2004. Children's accounts of their preoperative information needs. *Journal of Clinical Nursing* 14, 230 – 238.
- Smith BA, Lee H-J, Chol M, Jones DE, Bausell RB & Broome MA. 2008. Quality of reporting Randomized Controlled Trials (RCTs) in the nursing literature: Application of the Consolidated Standards of Reporting Trials (CONSORT). *Nursing Outlook* 56 (1), 31 – 37.
- Smith AF, Vallance H & Slater RM. 1997. Shorter pre-operative fluid fasts reduce postoperative emesis. *British Medical Journal* 314, 1486.
- Sobol SE, Wetmore RF, Marsh RR, Stow J & Jacobs IN. 2006. Postoperative Recovery After Microdebrider Intracapsular or Monopolar Electrocautery Tonsillectomy. *Archives of Otolaryngology – Head and Neck Surgery* 132, 270 – 274.
- Soreide E, Eriksson LI, Hirlekar G, Eriksson H, Henneberg SW, Sandin R & Raeder J. 2005. Pre-operative fasting guidelines: an update. *Acta Anesthesiologica Scandinavica* 49, 1041 – 1047.
- Spencer C & Franck LS. 2005. Giving parents written information about children's anesthesia: Are setting and timing important? *Pediatric Anesthesia* 15, 547 – 553.
- Spielberg C, Gorsuch R, Lushene R, Vagg P & Jacobs G. 1970. State-Trait Anxiety Inventory (STAI). Consulting Psychologists Press Inc., Palo Alto.
- Statistical Yearbook on Social Welfare and Health Care 2008. Stakes (National Research and Development Centre for Welfare and Health). Yliopistopaino Oy. Helsinki.
- STM 2008a. Children have the right to participate. Annual Report 2008 of the Ombudsman for Children. Sosiaali- ja terveystieteiden tutkimuskeskus 2008:20. Helsinki.
- Suhonen R & Leino-Kilpi H. 2006. Adult surgical patients and the information provided to them by nurses: a literature review. *Patient Education and Counseling* 61 (1), 5 – 15.
- Suominen T & Leino-Kilpi H. (toim.). 1997. Lyhytkirurginen potilas terveydenhuollon asiakkaana [Short Term Patient in Health Care System]. Stakes. Raportteja 210. Jyväskylä: Gummerus Kirjapaino Oy.
- Sutters KA & Miaskowski C. 1997. Inadequate Pain Management and Associated Morbidity in Children at Home After Tonsillectomy. *Journal of Pediatric Nursing* 12 (3), 178 – 185.
- Sutters KA, Miaskowski C, Holdridge-Zeuner D, Waite S, Paul SM, Savedra MC & Brent L. 2005. Time-Contingent Dosing of an Opioid Analgesic After Tonsillectomy Does Not Increase Moderate-to-Severe Side Effects in Children. *Pain Management Nursing* 6 (2), 49 – 57.
- Sutters KA, Savedra MC, Miaskowski C, Holdridge-Zeuner D, Waite S, Paul SM & Lanier B. 2007. Children's Expectations of Pain, Perceptions of Analgesic Efficacy, and Experiences With Nonpharmacologic Pain Management Strategies at Home Following Tonsillectomy. *Journal for Specialists in Pediatric Nursing* 12 (3), 139 – 148.
- Tabaee A, Lin JW, Dupiton V & Jones JE. 2006. The role of oral fluid intake following adenotonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 70 (7), 1159 – 1164.
- Telian SA, Handler SD, Fleisher GR, Baranak CC, Wetmore RF & Potsic Wp. 1986. The effect of antibiotic therapy on recovery after tonsillectomy in children. A controlled study. *Archives of*

- Otolaryngology – Head and Neck Surgery 112 (6), 610 – 615.
- Temple RH & Timms MS. 2001. Paediatric coblation tonsillectomy. *International Journal of Pediatric Otorhinolaryngology* 61, 195 – 198.
- Thomas PC, Moore P & Reilly JS. 1995. Child preferences for post-tonsillectomy diet. *International Journal of Pediatric Otorhinolaryngology* 31, 29 – 33.
- Timmins F. 2006. Exploring the concept of “information need”. *International Journal of Nursing Practice* 12, 375 – 381.
- Tones K, Tilford S & Robinson Y. 1994. *Health Education. Effectiveness and efficiency*. London: Chapman and Hall.
- Tourigny J, Chapados C & Pineault R. 2005. Determinants of parental behavior when children undergo day-care surgery. *Journal of Advanced Nursing* 52 (5), 490 – 497.
- Treston G. 2004. Prolonged pre-procedure fasting time is unnecessary when using titrated intravenous ketamine for paediatric procedural sedation. *Emergency Medicine Australasia* 16 (2), 145 – 150.
- Uhari M & Nieminen P. 2001. *Epidemiologia ja biostatistiikka*. Jyväskylä: Gummerus Kirjapaino Oy.
- Valtonen H, Qvarnberg Y & Blomgren K. 2004. Patient Contact with Healthcare Professionals after Elective Tonsillectomy. *Acta Otolaryngologica* 124, 1086 – 1089.
- Veall GR, Floor K & Dorman T. 1995. Prolonged starvation in paediatric surgery. *Anaesthesia* 50 (5), 458 – 460.
- Virtanen H, Leino-Kilpi H & Salanterä S. 2007. Empowering discourse in patient education. *Patient Education and Counseling* 66, 140 – 146.
- Visintainer M & Wolfer J. 1975. Psychological preparation for surgical pediatric patients: The effect on children’s and parents’ stress responses and adjustment. *Pediatrics* 56 (2), 187 – 202.
- Warnock FF & Lander J. 1998. Pain progression, intensity and outcomes following tonsillectomy. *Pain* 75, 37 – 45.
- Werle AH, Nicklaus PJ, Kirse DL & Bruegger DE. 2003. A retrospective study of tonsillectomy in the under 2-year-old child: indications, perioperative management, and complications. *International Journal of Pediatric Otorhinolaryngology* 67, 453 – 460.
- Williams J. 1995. Education for empowerment: Implications for professional development and training in health promotion. *Health Education Journal* 54, 37 – 47.
- Wilson PS, Snow DG, O’Connell J, Proops DW & Barrow M. 1990. Role of routine fluid replacement in children undergoing tonsillectomy. *The Journal of Laryngology and Otology* 104, 801 – 802.
- Windfuhr JP & Chen YS. 2001. Hemorrhage following pediatric tonsillectomy before puberty. *International Journal of Pediatric Otorhinolaryngology* 58, 197 – 204.
- Wisselo T, Stuart C & Muris P. 2004. Providing parents with information before anaesthesia: what do they really want to know? *Pediatric Anaesthesia* 14, 299 – 307.
- Wolfensberger M, Haury J-A & Linder T. 2000. Parent satisfaction 1 year after adenotonsillectomy of their children. *International Journal of Pediatric Otorhinolaryngology* 56, 199 – 205.
- Wong D & Baker C. 1988. Pain in children: comparison of assessments scales. *Pediatric Nursing* 14 (1), 9 – 17.
- World Medical Association Declaration of Helsinki. 2000. *Ethical principles for medical research involving human subjects*. Geneva.
- Zhao YC & Berkowitz RG. 2006. Prolonged hospitalization following tonsillectomy in healthy children. *International Journal of Pediatric Otorhinolaryngology* 70, 1885 – 1889.
- Zwarenstein M, Treweek S, Gagnier JJ, Altman DG, Tunis S, Haynes B, Oxman AD, Moher D, and for the CONSORT and Pragmatic Trials in Healthcare (Practihc) groups. Improving the reporting of pragmatic trials: an extension of the CONSORT statement. *BMJ* 2009. 337; a2390, doi:10.1136/bmj.a2390. Downloaded from bmj.com on 28 January 2009.
- Östman PL, White PF. 2000. Outpatient Anesthesia. In: Miller RD, editor. *Anesthesia*. 5th ed. New York, Churchill Livingstone Inc.

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Seija Klemetti

Appendix 1 page 1 of 22

SUMMARY OF THE PUBLICATIONS IN THE REVIEW OF THE LITERATURE (N= 110)

(TE= tonsillectomy; TEA= adenotonsillectomy; A= adenoidectomy; ENT= ear-, nose and throat; RCT= randomized clinical trial; CT= clinical trial; NPO= nothing per os; RGV= residual gastric volume; PONV= postoperative nausea and vomiting; VAS= visual analogue scale.; RR= blood pressure

AUTHORS	PURPOSE	PATIENTS / INTERVENTION / STUDY GROUPS	METHOD / INSTRUMENTS / VARIABLES	MAIN RESULTS
Preoperative fasting:				
Adamir et al. 2008 (Turkey)	- to investigate the effect of hydration on post-operative vomiting	104 adults - pre- or intraoperative volume replacement	RCT - ratio of the required anti-emetics during 24h	- preoperative replacement of fluid in surgical patients significantly reduced PONV (p= 0.019) compared to intraop. hydration
Castillo-Zamora et al 2005 (Mexico)	- to evaluate the efficacy of clear oral fluids administered at 6:00-6:30 on the morning of surgery to reduce pro-longed preoperative fasting time	100 children (mean 6.6 years) - apple juice 6:00 – 6:30 or over night fasting	RCT <u>Dehydration:</u> - blood glucose - deficit of $\geq 5\%$ of body weight - capillary refill $> 2s$ - absent tears - dry mucous membranes - unwell appearance Irritation: - VAS (0-10)	- children in the fasting group were more irritated and dehydrated (p<0.001; p<0.001, respectively) - oral administration of apple juice is effective and safe to prevent prolonged preoperative fasting time - complications related to aspiration did not occur
Crawford et al. 1990 (Canada)	- to determine the effects of duration of preoperative fasting on gastric pH and volume in children	100 children (1 – 14 years) - three study groups received water 2ml/kg 2h, 4h, 6h before surgery	RCT - gastric fluid was aspirated; pH measured with PHM62 radiometer	- neither gastric fluid pH or volume correlated with the duration of fasting - no aspirations occurred
Emerson et al. 1998 (UK)	- to establish a standard for paediatric preoperative fasting times	110 members of Association of Paediatric Anaesthetists in UK and Ireland	postal survey	- neonates : 2h for clear fluids; 4h for breast milk and formula milk - infants: 2h for clear fluids; 4h for breast milk; 6h for formula milk and solids - children: 2h for clear fluids; 6 h for milk, solids
Engelhardt & Crawford 2001 (UK)	- to asses current practice in aspiration prophylaxis	102 members of Association of Paediatric Anaesthetists	postal survey	Fasting times: - in emergencies 4h for solid/milk and 2h for clear liquids Elective surgery: - 5-6 h for solids / milk and 2h for clear liquids

Appendix 1 page 2 of 22

Fasting et al. 1998 (Norway)	- to compare the clinical practice in departments of anaesthesia before and after shorter fasting guidelines and to evaluate benefits and effects	68 departments	questionnaire	- in 1996 69% had changed guidelines and allowed 2- 4h fasting for clear fluids in children - no increased incidence of aspiration or other complications - more benefits from the changed fasting guidelines (60%), less thirst - variation in fasting patterns, no common consensus
Ferrari et al. 1999 (USA)	- to determine practices for preoperative fasting at major pediatric hospitals	44 institutions in USA and Canada	survey	
Friesen et al. 2002 (USA)	- to determine whether the duration of preoperative fasting effects on the decrease in blood pressure in infants and children during halothane anesthesia	250 children (1 month – 12 years) - halothane anesthesia - 0-4h, 4-8h, 8-12h or <12h fasting	RCT - heart rate - blood pressure	- prolonged preoperative fasting is connected with a greater decrease in blood pressure in infants; no significant differences in the older groups
Gilbert et al. 1995 (UK)	- to investigate the possible effect of preoperative oral fluids on postoperative morbidity	100 adults - water 500-1000ml 3h before surgery or fasting from midnight	RCT - 100mm linear analogue score: thirst, nausea, vomiting, hunger, dizziness, drowsiness, headache	- none of the patients were cancelled or had delayed surgery because of the administration of preoperative (3h) oral fluids - decreased thirst (p= 0.0149) after surgery and better recovery was shown in water drinkers
Green et al. 1996 (USA)	- to evaluate whether policy and practice regarding NPO status before surgery have changed in USA	191 medical institutions	survey	- 69% of anesthesiologists have changed or are flexible in their fasting practices in children; and 41% in adults
Hausel et al. 2001 (Sweden)	- to study the effects of different preoperative oral fluid protocols on preoperative discomfort, residual gastric volume and acidity	252 adults - carbohydrate drink or water 2h before surgery or overnight fasting	RCT - VAS (100mm): anxiety, depression, hunger, thirst, malaise, concentration, nausea, pain, tiredness, unfitness, weakness	- preoperative (2h) CHO significantly reduces patients preoperative discomfort and does not adversely affect gastric contents - patients had less thirst, hunger, anxiety, malaise, and unfitness compared to patients in the other study groups

Appendix 1 page 3 of 22

Kawana et al. 2000 (Japan)	- to clarify whether preoperative anxiety of children and their parents affects acidity and volume of the gastric fluid	43 children (3 – 6 years)	CT - VAS-N (anxiety night before surgery, 0 - 10); VAS-M (anxiety in the morning of surgery, 0-10) - gastric volume and pH	- no difference in pH; volume significantly greater in children with low level of anxiety ($p < 0.05$) - low level of anxiety does not help to decrease volume or acidity of the gastric contents and consequently the risk of aspiration
Keidan et al. 2004 (Israel)	- to assess the effect of the American Academy of Pediatrics/American Society of Anesthesiology fasting guidelines on the efficacy and success of the sedation with chloral hydrate	200 infants - NPO (nulla per os) or no required fasting time	retrospective review - rate to achieve sedation with the first dose - needing higher sedation doses - time to sedation	- longer fasting time was connected with an increased failure to sedate the child ($p = 0.03$) - a hungry child is irritable and more difficult to sedate
Maekawa et al. 1993 (Japan)	- to determine the effect of preoperative fasting on the patients preoperative condition	105 children (1 – 14 years) - fasting for 2h, 4h, or 12h	RCT - gastric fluid, pH and volume - plasma glucose - lipid homeostasis	- 2h fasting prevents an increase in lipolysis during the fasting period without increasing the volume of gastric fluid or decreasing pH ($p < 0.05$)
Moyao-Garcia et al. 2001 (Mexico)	- to evaluate the benefits of oral solution in interrupting a pro-longed preoperative fasting in children	40 children (3 – 12 years) - isomolar solution of electrolytes or over night fasting	RCT - blood glucose - endoscopic examination to obtain the gastric content; volume, pH	- RGV significantly higher and pH lower in the fasted group ($p < 0.05$; $p = 0.05$) - isomolar solution of electrolytes could be beneficial by correcting the deficit in water and electrolytes and reducing the stress
Murphy et al. 2000 (USA)	- to assess the impact of a liberalized preope-rative fasting policy on operating room utilization	5420 outpatients - unlimited clear fluids until 2 to 3 h prior to surgery or overnight fasting	CT - regurgitation, aspiration, frequency of rapid-sequence or awake intubation cancellations, delays	- no increase in cancellations or delays of surgical procedures due to inappropriate oral intake - no episode of aspiration was observed during the study - in the overnight fasting group more rapid-sequence or awake intubation ($n = 119 / 51$; RR 0.409, 95% CI 0.306-0.546)

Appendix 1 page 4 of 22

Pandit et al. 2000 (USA)	- to determine whether institutional policy reflects shorter fasting guidelines - to determine if chewing gum preoperatively increases gastric volume and changes gastric acidity	623 memberships of the Society for Ambulatory Anesthesia 40 children (5 – 17 years) no gum/sugarless gum/sugared gum	623 memberships of the Society for Ambulatory Anesthesia	survey	- new shorter guidelines are mostly recommended both in adults and in children - fasting instructions, should be the same in elective surgery and in ambulatory surgery - may increase gastric volume (p= 0.0001) - may increase pH (p= 0.007) - needs more investigation
Schoenfelder et al. 2006 (USA)	- to evaluate the gastric acidity at pediatric age in three preoperative fasting groups	93 children (mean 53,23 months) - 3 h fasting, water 2h before surgery and beverage 2h before surgery	93 children (mean 53,23 months) - 3 h fasting, water 2h before surgery and beverage 2h before surgery	RCT - gastric pH	- no difference in the gastric acidity between the study groups or periods - no vomiting during induction in any group
Senayli et al. 2007 (Turkey)	- to assess gastric emptying in children and to find guidelines for administration of preoperative feeds	60 children (<5 years) - orange-flavored 17,5% glucose, low fat (3%) milk or breast milk	60 children (<5 years) - orange-flavored 17,5% glucose, low fat (3%) milk or breast milk	RCT - gastric emptying was measured by real time ultrasonography - stomach contents were aspirated and measured	- 3% fat milk and 17.5% glucose can be given (10ml/kg) safely 3h and 2h, respectively, before surgery - preoperative breast milk needs further research
Treston 2004 (Australia)	- to examine the relationship between preoperative fasting time and intra- and postoperative vomiting in children	272 children (1 – 12 years) - sedation with intravenous ketamine	272 children (1 – 12 years) - sedation with intravenous ketamine	CT - data collection form	- a trend towards increased incidence of vomiting with increased fasting time was found (p= 0.08)
Veall et al 1995 (UK)	- to examine the duration of preoperative fasting in day surgery and inpatient settings	285 children - groups 1 – 4 years; 4 – 8 years; over 8 years	285 children - groups 1 – 4 years; 4 – 8 years; over 8 years	prospective survey	- inpatients had a shorter time of preoperative fasting (p< 0.001) - in day surgery mean starvation times decreased with increasing age

Appendix 1 page 5 of 22

Postoperative recovery:					
Alatas et al. 2006 (Turkey)	- to calculate a mean blood cell volume loss / kg in TEA, TE & A	144 children (mean 8 years)	prospective study - blood loss compared to the total blood volume of the child (75ml / kg 2-5yrs; 70ml / kg 6 – 16 yrs)	- bleeding seems to be unavoidable in the intraoperative / postoperative period in context of tonsillectomy Mean blood loss: - A 1.57 ml / kg (SD ± 1.29) - TEA 2.96 ml / kg (SD ± 1.91) - TE 3.02 ml / kg (SD ± 1.66) - the common paediatric ENT procedures, e.g TE and TEA are safe	
Asiri et al. 2006 (Saudi Arabia)	- to evaluate the rate of complications and safety of the day-surgery procedure (ENT)	300 children (11 months – 13 years)	prospective study - heart rate, vomiting, fever, analgesia, bleeding		
Brodsky et al. 1993 (USA)	- to compare different postoperative instructions on postoperative recovery after tonsillectomy	92 children (3 – 14 years) - “restricted” or “non-restricted” postoperative instructions	RCT - 0 – 3 scale: pain, activity, oral intake - diary: medication, diet	- no significant differences between the groups in pain, activity or return to normal diet - no benefits of limited diet or activity instructions	
Chhibber et al. 1999 (USA)	- to evaluate the effect of atrophine and glycol-pyrrolate on postoperative vomiting in children	93 children (3 – 16 years) - atrophine 15 [micro sign] g/kg or 10 [micro sign] g /kg glycopyrrolate with neostigmine	RCT - postoperative emesis - antiemetic therapy - duration of postoperative hospital stay	- the incidence of vomiting reduced within 24h significantly in the atrophine group (p<0.05) compared to the glycopyrrolate group - no difference in the number of patients treated for postoperative emesis or pain - no difference in the discharge times - blood collecting in the stomach may have increased postoperative emesis	
Colreavy et al. 1999 (Ireland)	- to examine the effects of antibiotics on post-operative recovery after tonsillectomy	78 children (2 – 12 years) - amoxicillin and clavulanic acid or no antibiotics	RCT - resuming normal diet, analgesia and VAS (line 0-10) and other complications	- according to diary kept by the parents postoperatively amoxicillin and clavulanic acid reduce significantly postoperative morbidity measured by resumption of normal diet (p= 0.0075) and pain scores (p= 0.0006)	

Appendix 1 page 6 of 22

<p>Cook et al. 1992 (UK)</p>	<p>- to evaluate whether posttonsillectomy dietary advice has any influence on recovery</p>	<p>150 patients (mean 24.5 years) - rough food or soft food or no dietary advice other than to eat regularly</p>	<p>RCT - diet diary for 14 days: pain (scale 1 – 5); analgesics used, haemorrhage</p>	<p>- difference between the diets were not significant - pain scores ($p=0.990$), analgesics ($p=0.327$) were not related to the diet - secondary haemorrhage ($p=0.896$) not related to the diet, but more common if oral intake had been poor ($p<0.001$) - no differences in pain - no significant difference in the time to normal diet - normal activity sooner in the microdebrider group ($p<0.01$) and finishing taking medication ($p<0.0001$) - iv 24h hydration may reduce postoperative pain in the late postoperative period but there is no benefit in other parameters</p>
<p>Derkay et al. 2006 (USA)</p>	<p>- to compare two surgical techniques in tonsillectomy</p>	<p>300 children (mean 5 years) - electrocautery or microdebrider technique</p>	<p>RCT - diary: pain (FACES pain scale, Wong & Baker 1988) medication, time to return to normal diet</p>	<p>- no differences in pain - no significant difference in the time to normal diet - normal activity sooner in the microdebrider group ($p<0.01$) and finishing taking medication ($p<0.0001$) - iv 24h hydration may reduce postoperative pain in the late postoperative period but there is no benefit in other parameters</p>
<p>Egeli et al. 2004 (Turkey)</p>	<p>- to determine the effect of 24h intravenous hydration for pediatric postoperative adeno-tonsillectomy patients</p>	<p>40 children (4 – 18 years) - 24h iv hydration or no iv hydration</p>	<p>RCT - questionnaire - pain(McGrath's face scale, McGrath et al. 1996), nausea, fever, vomiting, odor, bleeding, otalgia, trismus</p>	<p>- time to the first oral intake and duration of iv-hydration significantly shorter, and the quality of oral intake significantly better in the ketamine group ($0<0.05$) throughout the 24h after surgery - no differences in the incidence of vomiting or dreaming</p>
<p>Elhakim et al. 2003 (Egypt)</p>	<p>- to assess the effect of ketamine before surgery on postoperative well being in children</p>	<p>50 children (5 – 12 years) - ketamine or placebo</p>	<p>RCT - pain at rest - pain as swallowing - oral intake</p>	<p>- mild postoperative pain and nausea - fluid administration was beneficial, as the majority of children had fasted for several hours despite written instructions to allow clear fluids until 2 h preoperatively - discharge on the same day requires experienced nursing team - positive experience in day surgery is essential in children and their parents</p>
<p>Ewah et al. 2006 (UK)</p>	<p>- to examine the incidence of complications admitted for elective day case tonsillectomy</p>	<p>100 children (2 – 14 years)</p>	<p>verbal questionnaire by telephone on day 3 following discharge - pain, nausea, vomiting other general comments</p>	<p>- mild postoperative pain and nausea - fluid administration was beneficial, as the majority of children had fasted for several hours despite written instructions to allow clear fluids until 2 h preoperatively - discharge on the same day requires experienced nursing team - positive experience in day surgery is essential in children and their parents</p>

Appendix 1 page 7 of 22

Fazel et al. 2007 (Iran)	- to determine the effectiveness of preoperative intravenous dexamethasone on postoperative emesis after TE	100 children (5 – 15 years) - dexamethasone or saline	RCT - early and late vomiting - time to first oral intake - duration of iv hydration	- decreased postoperative vomiting ($p=0.001$) and shortened the time to first oral intake ($p=0.001$) and the duration of IV therapy ($p=0.001$)
Hall & Brodsky 1995 (USA)	- to compare the effects of postoperative diets on recovery during the first 12 postoperative hours after tonsillectomy	100 children (3 – 17 years) - “restricted” soft foods / liquids diet or “non-restricted” diet	questionnaire - pain (0 – 3), nausea (0 – 3), doing well (0 – 2), emesis (yes/no) diary: medication and foods	- a trend towards decreased nausea and parental perception of a more successful general recovery was noted in the “non-restricted” group: children were able to eat foods more often associated with their regular diet
Hamers et al. 2002 (Netherlands)	- to get insight into the prevalence and severity of postoperative pain after tonsillectomy	161 children (mean 5.5 years) and parents	questionnaire + telephone interview - pain VAS (100mm) - sleeping, eating and fluid intake problems, vomiting and behaviour	- serious pain problem 81%, vomiting 35%, sleeping disturbances 65%, behavior changes 46%, problems regarding eating 63%, problems regarding fluid intake 46% - pain caused most problems in oral intake - 24% urged and 8% forced the child to eat and take fluids
Hanif & Frosh 1999 (UK)	- to investigate the role of promoting mastication after tonsillectomy	102 children (mean 10.7 years) - administration of chewing-gum or not given chewing-gum	RCT - resumption to a normal diet	- chewing of gum delayed the return to normal diet ($p=0.032$) - frequent swallowing is stimulated causing pain ($p=0.041$)
Holzmann et al. 2000 (Switzerland)	- to compare benefits of outpatient and inpatient TE in children	114 children (2 – 15 years)	- prospective non-randomized study	- children older than 3years had more emesis after TEA ($p=0.0997$) - emesis and poor oral intake are significant postoperative problems
Huth & Broome 2007 (USA)	- to describe well being of the children at home 24 h after tonsillectomy and adenoidectomy	76 children (7 – 12 years) - audio- and video tape with booklets about relaxation, distraction and imagery or no audiovisual instruments	RCT - The Oucher Pain Scale (Beyer et al. 1995) and 0-100 numeric scale: pain - diary: medication use, fluid intake, and emesis	- no differences between the study groups - 31% vomited at home - 46-56% of the children had according to their parents difficulties in drinking because of pain

Appendix 1 page 8 of 22

<p>Kaan et al. 2006 (Turkey)</p>	<p>- to evaluate the effect of preoperative dexamethasone on postoperative recovery after tonsillectomy</p>	<p>62 children (4 – 12 years) - preoperative dexamethasone (0.5mg/kg iv) or placebo</p>	<p>RCT - oral intake, pain, and vomiting</p>	<p>- oral feeding started 2h postoperatively - decreased time to the first oral intake ($p < 0.05$) and to the time to discharge ($p < 0.05$) - reduces postoperative pain ($p = < 0.05$) - no effect on vomiting incidence</p>
<p>Kearney et al. 1998 (Canada)</p>	<p>- to evaluate the effect or withholding oral fluids on the incidence of postoperative vomiting</p>	<p>317 children (mean 6.8) - oral fluids allowed or oral fluids withheld for 4-6 h postoperatively</p>	<p>RCT - vomiting</p>	<p>- withholding postoperative oral fluids reduces postoperative vomiting ($p < 0.004$) - withholding postoperative oral fluids (4 – 6h) is well tolerated by the children</p>
<p>Kim et al. 2007 (USA)</p>	<p>- to compare the effects of lowest and highest dose of dexamethasone on postoperative recovery after tonsillectomy</p>	<p>125 children (mean 4.3 years) - dose 0.0625, 0.125, 0.25, 0.5, or 1mg /kg</p>	<p>RCT - the Objective Pain Scale: pain (Hannallah et al. 1987) - diary: pain medication, nausea and vomiting, time and volume of oral liquid and soft food, voice changes</p>	<p>- there were no differences between the study groups - lower dose is as effective as higher dose of dexamethasone</p>
<p>Lacarte 1999 (Spain)</p>	<p>- to compare the incidence of complications in inpatient and outpatient TE</p>	<p>426 children 313 inpatient 113 outpatient (3 – 15 years)</p>	<p>- prospective comparative study</p>	<p>- complications were few and not dependent on age - complications in inpatients 1.65% and in outpatients 1.76% - Te is safe in children >3 years - discharge is possible 4h after surgery - primary bleeding 0.95% in all children</p>
<p>Lawhorn et al. 1996 (USA)</p>	<p>- to compare antiemetics to ondansetron in the occurrence of nausea and vomiting after TE</p>	<p>165 children (2 – 12 years) - ondansetron, droperidol or placebo</p>	<p>RCT - postoperative vomiting</p>	<p>- dose of ondansetron after induction significantly more effective than droperidol in reducing emesis after discharge ($p < 0.025$)</p>
<p>Messner & Barbita 1997 (Canada)</p>	<p>- to evaluate whether required oral intake prior to discharge is advantageous after tonsillectomy</p>	<p>200 children (mean 6.1 years) - liquids required to drink 20cc/kg before discharge or not required drinking</p>	<p>non-randomized cohort study - nursing records and follow up calls: fluid intake, vomiting, hemorrhage, dehydration</p>	<p>- “required group” took significantly more liquids ($p = 0.0001$) - length of hospital stay was longer in “required group” ($p = 0.0001$) - 60% vomited at least once following surgery - fever in not drinkers vomited less ($p = 0.12$) - discharge before normal oral fluid intake is safe</p>

Appendix 1 page 9 of 23

Nicklaus & Steinie 1995 (USA)	- to determine the risk of complications after a short (<6h) period of postoperative observation after tonsillectomy	233 children (2 – 17 years)	retrospective review - bleeding, emesis, dehydration, readmissions	- average fluid intake after arrival to the recovery room and before discharge 201 ml iv fluids (40 – 1800ml) and 52ml of oral fluids (15 – 350ml) - greatest risk is bleeding (n= 4, 1.7% primary bleeding; n= 10, 4.3% secondary bleeding), emesis the other (n= 6, 2.5%) - dehydration in 3 patients (1.3%) - no greater risks of complications than in patients who are observed longer; children are safely discharged after shorter observation - there were no differences between the study groups
Nikandish et al. 2008 (Iran)	- to evaluate the effect of the preoperative peritonsillar injection on postoperative pain	80 children (7 – 15 years) - bupivacaine and pethidine or saline	RCT - VAS: pain (100mm line) - drinking liquid, eating soft diet, nausea and vomiting	
Ozlugedik et al. 2006 (Turkey)	- to compare the effectiveness of acetaminophen versus acetaminophen and honey following pediatric tonsillectomy and adenoidectomy	60 children (mean 6.5 years) - acetaminophen or acetaminophen and honey	RCT - VAS: pain - medication	- oral honey administration following tonsillectomy may reduce (p<0.001) the need for analgesics via relieving postoperative pain within the first postoperative days
Park & Kim 2002 (USA)	- to determine the feasibility, safety and efficacy of intravenous hydration at home for pediatric patients	47 children (<18 years) - iv hydration at home or not home iv hydration	CT - pain, swallowing, activity, oral intake, dysphagia, urination	- hydration group had more pain in swallowing (p= 0.008) and less activity (p= 0.02) - no significant difference in ability to take fluids or solids or quantity of oral intake between the study groups
Park et al. 2007 (USA)	- to examine how two different surgical techniques will improve postoperative outcome in TE	39 children (2 – 12 years) - a subtotal bipolar adenotonsillectomy or a total tonsillectomy	RCT - pain (VAS), time to oral intake, activity level, emesis, retching	- no differences in postoperative oral intake in amounts or first doses of liquids - no differences in pain, activity, emesis or retching

Appendix 1 page 10 of 22

<p>Pop et al. 2007 (USA)</p>	<p>- to evaluate the effects of post-anesthesia analgesic treatments after tonsillectomy</p>	<p>92 children (3 – 18 years) - iv fentanyl, iv fentanyl+oral analgesic, iv morphine, iv morphine+oral analgesic</p>	<p>descriptive-comparative study - pain, incidence of nausea and vomiting, and amount of oral fluid intake</p>	<p>- no significant differences in oral intake between the study groups - no relation between pain and oral intake in the total group - no association with the amount of oral intake and the amount of medication administered</p>
<p>Prim et al. 2003 (Spain)</p>	<p>- to assess the incidence of unexpected postoperative bleeding in paediatric TE/TEA</p>	<p>1516 children [mean 5.3 (0.8 – 13.9 years)]</p>	<p>medical records</p>	<p>-13 children (0.8%) experienced postoperative bleeding</p>
<p>Schreiner et al. 1992 (USA)</p>	<p>- to compare the effects of mandatory postoperative drinking to voluntary postoperative drinking</p>	<p>989 children (1 month – 18 years) - mandatory drinking or voluntary drinking</p>	<p>RCT - vomiting, time to discharge, time interval between the completion of surgery and discharge</p>	<p>- no difference in the incidence of vomiting - 14% of the elective and 23% of the mandatory drinkers vomited in the day surgery unit (p=0.001) and mandatory drinkers were observed longer (p< 0.001) - no admissions or readmissions because of vomiting or dehydration - mandatory drinking is not necessary</p>
<p>Sobol et al. 2006 (USA)</p>	<p>- to assess the postoperative recovery in patients undergoing two different surgical methods</p>	<p>74 children (3 – 7 years) - microdebrider intracapsular or monopolar electrocautery tonsillectomy</p>	<p>RCT - surgery time, blood loss - checklist for 10 days: pain (Faces Pain Scale, Wong & Baker 1988), resumption of normal diet and activity</p>	<p>- surgery time (p= 0.001) and blood loss (p= 0.01) greater in microdebrider intracapsular group but possible advantage in the resumption of normal diet (p=0.04)</p>
<p>Sutters & Miaskowski 1997 (USA)</p>	<p>- to determine the intensity of pain and type of side effects after pediatric tonsillectomy</p>	<p>84 children (3 –12 years)</p>	<p>telephone interview - pain, medication, sleeping and activity, oral intake, bleeding and emesis</p>	<p>- 56% had difficulties in taking oral fluids because of pain - 26% had one or more episodes of emesis - 62% had restless sleep, 75% behavior changes</p>

Appendix 1 page 11 of 22

Sutters et al. 2007 (USA)	- to document children's descriptions of their pain management at home after tonsillectomy	88 children (6 – 15 years) - acetaminophen -codeine 1. with standard postoperative instruction or 2. with standard postoperative instruction except dosing frequency or 3. with nurse coaching	audio-taped interview	- cold liquid/food by moth provided pain relief - children felt they have more pain than they had expected in all study groups - children cope better if they have a realistic preoperative impression of what is going to happen
Tabaee et al. 2005 (USA)	- to compare the incidence of complications in patients (TE) who are encouraged to drink fluids postoperatively versus patients who drink on a voluntary basis	93 children (2 – 12 years) - encouraged fluids postoperatively or voluntary drinking	RCT - oral liquids, emesis and vomiting, duration of stay, other complications	- no difference in emesis; higher in both groups when the volume of 240 ml oral intake was met - no differences in complications including dehydration - postoperative mandatory oral fluid intake is not a necessary requirement for discharge
Telian et al. 1986 (UK)	- to study the ability of antibiotics to reduce postoperative morbidity after tonsillectomy	85 families - postoperative ampicillin or placebo	RCT - check list: fever, pain, mouth odor, oral intake, activity	- the study group had less pain ($p=0.05$) and took solid food and usual diet earlier ($p<0.01$); also less periods of fever ($p<0.05$) and better activity ($p<0.05$)
Thomas et al. 1995 (USA)	- to record children's specific food preferences for 2 post-tonsillectomy diets in the immediate 24 h postoperative day	100 children (2 – 18 years) - standard breakfast or revised breakfast	survey	- liquid and soft foods are preferentially consumed rather than rough food - encouragement of oral fluids is better than forced consumption - unrestricted diet with small, frequent oral intake enforces food consumption

Werle et al. 2003 (USA)	- to review the experience with tonsillectomy in <2-year-old children	94 children (12 months – 23 months)	medical records	<ul style="list-style-type: none"> - 5% took longer than 24h to resume oral intake - 61% were identified as having taken sufficient oral intake in less than 4h - 2% experienced significant nausea and vomiting after surgery - 4% of younger than 2 years old required treatment for dehydration after discharge
Wilson et al. 1990 (UK)	- to determine the role of routine fluid re-placement in children undergoing TE	50 children (2 – 14 years) iv infusion or no iv infusion	RCT - weight, analgesic, blood loss, well being (scale 1 – 10), length of stay, pyrexia	<ul style="list-style-type: none"> - length of stay longer in the iv infusion group - no other differences between the groups
Windfuhr & Chen 2001 (Germany)	- to evaluate if the incidence of bleeding is associated with certain age group in TE	2330 children (<12 years) 1467 (<6 years) 863 (6 – 12 years)	retrospective analysis	<ul style="list-style-type: none"> - TE can be performed safely in children under 6 yrs with no increased risk of postoperative bleeding - recurrent episodes of postoperative hemorrhage may be a sign of excessive bleeding
Zhao & Berkowitz 2006 (Australia)	- to determine the incidence and factors influencing pro-longed hospitalization in healthy children after tonsillectomy	1129 children (<18 years) - children discharged within 24 h (n=1056) or children with unexpected admission (n=73)	retrospective analysis - duration of stay, indication for operation, type of operation, postoperative complications, readmission to hospital	<ul style="list-style-type: none"> - the most common reasons for admission: poor oral intake (53%) and fever (15%) - young age is a risk factor (p= 0.0046) - children may tolerate oral intake better at home because of parental influence, food choices and surroundings - the use of iv fluids immediately after surgery helps in reducing postoperative morbidities
Counselling of the families:				
Bellew et al. 2002 (UK)	- to address preoperative anxiety and to facilitate informed parental consent	122 parents	questionnaire	<ul style="list-style-type: none"> - parents expect adequate preoperative information but do not in certain form - parental satisfaction with information is increased when it is given in written and verbal form

Appendix 1 page 13 of 22

Boston et al. 2005 (USA)	- to determine the prevalence of internet medical information of parents prior to their child's surgery and does it influence to their decisions	204 parents whose child was going to undergo ENT procedure	survey - questionnaire	- according to parents opinion Internet information was understandable 95%, helpful 96%, 23 (38%) discussed the information child's surgery, 47 (77%) agreed that information influenced their decision about child's surgery - most interesting things: procedure (62%), risks and complications (62%), recovery and postop. care (36%), indications (34%)
Brewer et al. 2006	- to determine if children prepared for day surgery by a child life specialist exhibits less anxiety	142 children (5 – 11 years) - preparation by a child life specialist / no intervention	RCT - anxiety (the "Child Drawing Hospital"- instrument, Clatworthy et al. 1999)	- anxiety scores increased in the control group - the children did benefit postoperatively from preoperative preparation - preparing families provides them with the knowledge to support their child in the surgical process
Carter et al. (2002) UK	- to explore the ways in which parents of children with profound special needs assess and manage their children's pain	15 parents of 12 children (5 – 16 years)	interview	- the parents felt they had developed skills which went beyond mothering/fathering and they draw on some professional assessment skills - skills had not been actively acquired from professionals but the parents had absorbed them from professionals themselves
Coyne 2008 (Ireland)	- to critique the research literature on children's, parents and health care professionals' experiences of children's participation in consultations and decision making	not mentioned - Medline, Cinahl, PubMed, PsycLit: 1993 – 2007 - "children" / "young people" / "parents" / "healthcare professionals" / "consultations" / "decision making" / "involvement" / "participation"	a literature review	- children do not actively participate - parents and healthcare professionals have the power to facilitate or constrain children's participation - some professionals seem to have doubts about the appropriateness of sharing health related information and decision with children - children learn not to interrupt parents and health care professionals' communication interaction

Appendix 1 page 14 of 22

<p>D'Eredita & Marsh 2004 (Italy and USA)</p>	<p>- to compare two different surgical techniques in tonsillectomy</p>	<p>58 children (2 – 8 years) - contact diode laser or monopolar cautery</p>	<p>RCT - diary: pain (The Wong-Baker FACES pain scale, Wong & Baker 1988), medication, diet, voice, activity, other complications recorded</p>	<p>- according to the diary of the parents, contact diode laser causes less postoperative pain and discomfort measured as pain ($p < 0.0001$), medication needed ($p < 0.001$), awakenings in the night ($p < 0.001$), voice changes ($p = 0.02$)</p>
<p>Ellerton & Merriam 1994 (Canada)</p>	<p>- to evaluate a preoperative programme to prepare children and their families for day surgery</p>	<p>76 children (3 – 15 years) - programme group or non programme group</p>	<p>interview +FACES scale (child's anxiety; Bieri et al. 1990) +VAS(0-7; parental anxiety)</p>	<p>- preoperative preparation and information of both, children and parents, by health care professionals decreases their anxiety and increases their ability to act in the child's surgical process</p>
<p>Faroog et al. 2008 (Ireland)</p>	<p>- to audit the fasting times of caregivers when their child is coming to day surgery</p>	<p>479 parents</p>	<p>questionnaire</p>	<p>- 257 fasted for 0-6h and 223 for 6h; 140 fasted for 7-12h and 109 between 13-19h - several parents are fasting with their child</p>
<p>Felder-Puig et al. 2002 (Austria)</p>	<p>- to evaluate the effects of a children's book on pre- and postoperative anxiety and distress in children (ENT) and mothers</p>	<p>400 children (2 – 10 years) and mothers -preparation book or without book</p>	<p>RCT - a feeling states check list and the state anxiety scale of the State and Trait Anxiety Inventory (Spielberg et al. 1970)</p>	<p>- mothers in the experimental group felt better informed ($p < 0.01$), co-operated better ($p < 0.01$) and were prior to surgery less anxious ($p < 0.01$), similarly were also their children ($p = 0.01$)</p>
<p>Gilmartin & Wright 2007 (UK)</p>	<p>- to synthesize the evidence in day surgery, demonstrate its usefulness</p>	<p>20 publications - the RCN library, BNI, Cinahl, Medline, 1990 – 2005: "day surgery and technological advantages", "financial/economic benefits", "patient experiences / satisfaction", "day surgery"/ "international comparisons", "day surgery and developing countries"</p>	<p>a literature review</p>	<p>- day surgery is cost-effective and patients' satisfaction high - patients: effective information provision and psychological preparation helped them cope with the experience - poor information and preparation caused more anxiety - nurses in the developing countries should not be hindered by technological and economic limitations</p>

Appendix 1 page 15 of 22

Hatava et al. 2000 (Sweden)	- to determine if the retrieval of information could be increased and anxiety reduced prior to ENT surgery	160 families - conventional verbal information or specific information including role-play	questionnaire - experience of premedication, operation theatre, iv- needle insertion, induction - anxiety and satisfaction	- improvement of the preoperative acquisition of knowledge in all age groups, especially with younger children (p< 0.05) - parents reported more satisfaction and less anxiety after specific information and preoperative preparation (p< 0.001)
Holt et al. 2000 (Denmark)	- to evaluate the effect of adding dexamethasone to tropisetron in tonsillectomy	125 children (mean 6.1 years) - tropisetron (0.1mg/kg up to 2mg) or tropisetron and dexamethasone (0.5mg/kg up to 2mg)	RCT - emesis, vomiting, satisfaction, headache - gastrointestinal problems - diary for the parents: vomiting, nausea, pain, fever, diet, analgesics, the child's condition - phone call on the 6 th day	- in tropisetron group more nausea (p= 0.02), vomiting (p= 0.002) and abdominal pain (p= 0.04) - according to the diary the parents kept for 5 days postoperatively tropisetron plus dexamethasone is more effective than tropisetron alone: delayed vomiting (p= 0.025) and return to normal diet (p= 0.09)
Hultcrantz et al. 1999 (Sweden)	- to compare tonsillectomy with CO2 laser and regular tonsillectomy	41 children (3.5 – 8 years) - CO2 laser or regular tonsillectomy or tonsillectomy	RCT - pain VAS (faces, Hultcrantz et al 1999) first 24 h, after that a three graded scale, analgesics and eating (amount and quality)	- according to form by the parents tonsillectomy is less painful and children recovered sooner: -pain in first day (p< 0.01) - children painless earlier (p< 0.01) - tonsillectomy children lost weight (mean 800g) during 7 – 9 postoperative days (p= 0.01)
Kabalak et al. 2005 (Turkey)	- to evaluate the efficacy and side-effects of transcutaneous electrical acupoint stimulation (TEAS) and ondansetron in tonsillectomy	90 children (4 – 12 years) - transcutaneous electrical acupoint stimulation (TEAS) or ondansetron	RCT - retching and vomiting	- according to postoperative telephone calls with the parents TEAS is an effective method for prophylaxis of postoperative retching and vomiting and the children did not remember anything about acupuncture after 24h: - emesis (p< 0.001); satisfactory scores (p< 0.05)

Appendix 1 page 16 of 22

<p>Kanerva et al. 2003 (Finland)</p>	<p>- to determine parents' attitudes to child's tonsillectomy procedure</p>	<p>100 children and parents (3 – 16 years)</p>	<p>prospective study -peri- and postoperative complications -parental opinions about surgery and consultations during recovery time -parents were phoned the next day and 1 – 4 months later</p>	<p>-13% of the children were taken to a doctor during recovery time and 17% of the parents called health care personnel -reasons for consultations: earache, fever, poor oral intake, medication -on the day of surgery all parents thought that it is better to be discharged; when asked later 5 parents had changed their minds</p>
<p>Korkmaz et al. 2008 (Turkey)</p>	<p>- to compare two surgical techniques in tonsillectomy</p>	<p>81 children (2 – 14 years) - partial tonsillectomy with scalpel or total classical tonsillectomy</p>	<p>RCT - pain (VAS 0 – 5, Hultcrantz et al 1999), analgesics, nausea, vomiting, fever, quality of life of the child and daily activities</p>	<p>- according to the form the parents filled out diary 9 postoperative days; partial tonsillectomy with scalpel causes less postoperative pain, less analgesics used ($p < 0.05$); no differences in pain scores ($p > 0.05$) - no other differences</p>
<p>Kristensson-Hallström 1999 (Sweden)</p>	<p>- to investigate parental safety and level of participation</p>	<p>224 parents</p>	<p>questionnaire</p>	<p>- parents are representatives of their child - participation of the parents means that they receive sufficient information, and their role in child's care is clarified</p>
<p>Kristensson-Hallström et al. 1997 (Sweden)</p>	<p>- to assess benefits of increasing parental involvement in the child care in a day surgery unit</p>	<p>180 parents</p>	<p>- pain, pain medication, complications, first oral intake, child's behavior - Manifest Upset Scale & Cooperation Scale (Visintainer & Wolfer 1975) - STAI (Spielberg et al. 1970) - Faces Scale (McGrath et al. 1985)</p>	<p>- well informed parents are taking part in child's care more actively than usual - problems in child's care can be reduced by counselling and participating of the parents</p>
<p>Le et al. 2007 (USA)</p>	<p>-to describe families' response regarding the adequacy of the pre-operative preparation, and the necessity of two follow-up phone calls after pediatric ambulatory TE</p>	<p>90 families</p>	<p>questionnaire of: -concerns -use of recourses -adequacy of preoperative teaching -necessity of the two preoperative phone calls</p>	<p>-concerns at the first call: a sore throat because of poor oral intake, vomiting, fever -concerns at the second call (9-10 postop-day): a sore throat, earache, vomiting - most consulted was physician on call for the otolaryngology service; -87% considered information adequate; -94% consider-red the first call necessary and 68% the second call</p>

Appendix 1 page 17 of 22

Lewis 2003 (USA)	- to examine research related to computer-based patient education	32 publications - Medline, Cinahl: 1971 – 2001 - “computer”, “patient education”	a literature review	- effective way to present information and improve health care knowledge and clinical outcomes - can be tailored to the individuals according to age and specific learning needs
Li et al. 2007 (China)	- to examine the effects of therapeutic play intervention in children undergoing day surgery	203 children (7 – 12 years) - therapeutic play intervention / routine information preparation	RCT - CSAS-C (the State Anxiety Scale for Children, Mahajan et al. 1998)	- after play intervention anxiety scores in children and their parents were lower in pre- and postoperative periods - parental involvement in the preparation of children is essential
Litman et al. 1996 (USA)	- to identify predictors of preoperative anxiety of the parents in paediatric outpatient surgery	417 parents	questionnaire	- parental anxiety may increase child's preoperative anxiety, especially in the parents of smaller children - child's surgery in the past relieves parental anxiety
McEwen et al. 2007 (UK)	- to determine whether audiovisual information could reduce anxiety in parents before induction of the their child	111 parents	questionnaire +APAIS, Amsterdam preoperative anxiety and information scale (Meurman et al. 1996)	- videotape has also been shown to be an effective way to provide preoperative information for the parents - any intervention which reduces parental anxiety will reduce also a child's anxiety
Miller et al. 1999 (USA)	- to evaluate the effect of a videotape about pediatric anesthesia	85 parents	questionnaire Amsterdam Preoperative Anxiety and Information scale (APAIS) and the Standard Anesthesia Learning Test (SALT)	- parents of children experience greater level of anxiety and need-for-information than adults which are undergoing surgery themselves - parents who saw the video has less anxiety and decreased need-for-information
Moir et al. 2000 (USA)	- to compare the effectiveness of acetaminophen versus acetaminophen with codeine after tonsillectomy/adenoidectomy	51 children (3 – 12 years) - acetaminophen or acetaminophen with codeine	RCT - pain (The Wong- Baker FACES scale, Wong & Baker 1988), medication, night awakenings, nausea, abdominal pain, constipation and oral intake	- according to the postoperative diary the parents kept for 10 days: -no difference in pain scores ($p > 0.05$) but postoperative oral intake was better in the group of acetaminophen only ($p < 0.05$) - nausea, emesis and constipation more in codeine group (not sign.)

Appendix 1 page 18 of 22

<p>Pendeville et al. 2000 (Belgium)</p>	<p>- to compare postoperative analgesia, provided with paracetamol / paracetamol or tramadol, after tonsillectomy</p>	<p>50 children (2 – 9 years) - paracetamol / paracetamol or tramadol</p>	<p>RCT - pain (Cheops, 5 point scale, McGrath et al. 1985), pain in swallowing, sleep during night time, nausea and vomiting, other adverse events</p>	<p>- according to postoperative phone call on the next day: -postoperative pain of tramadol in the group was lower ($p < 0.0001$) and rescue analgesic use was significantly lower in the tramadol group ($p = 0.0115$) slightly more nausea ($p = 0.0501$) - no case in this blinded study was lost due to unco-operative parent</p>
<p>Pieper et al. 2006 (USA)</p>	<p>- to examine the research literature about information needs of patients before their discharge</p>	<p>16 publications - PubMed, Cinahl: 1990 – 2004 - “patient discharge”, “hospital discharge”, “patient teaching”</p>	<p>a literature review</p>	<p>- it is critical that nurses identify patients’ informational needs and find ways to meet them - patients who have not been educated may return to the hospital for additional care - written and verbal information are recommended - effective communication and teaching strategies need continual attention - nurses need to find a way to obtain feedback from patients in order to strengthen their teaching skills - family involvement influences positive behavioral changes for the patient</p>
<p>Poskiparta et al. 1998 (Finland)</p>	<p>- to explore questions that nurses ask patients in order to awaken reflection on their behavior in health counseling</p>	<p>38 counseling situations</p>	<p>video-observation</p>	<p>- reflective conversation began with check-up questions about patients situation, followed by questions about patients’ feelings - nonverbal communication supported discussion - reflective questions tended to ensure patient-centered conversation and might improve effectiveness of health counseling</p>
<p>Rosbe et al. 2000 (USA)</p>	<p>- to evaluate the efficacy and cost-effectiveness of post-operative follow-up calls in TEA</p>	<p>130 children (4 – 18 years)</p>	<p>questionnaire - telephone call 3-4 week postoperatively</p>	<p>- cost effective method of postoperative evaluation without compromising child’s safety - parents were satisfied with this form of follow up</p>
<p>Rømsing et al. 2000 (Denmark)</p>	<p>- to compare the analgesic efficacy of oral diclofenac and high dose acetaminophen on pain after TE</p>	<p>48 children (5 – 15 years) - oral diclofenac or high dose acetaminophen</p>	<p>RCT - pain, analgesics, bleeding and nausea/vomiting</p>	<p>- according to records by the parents three days postoperatively diclofenac is not more effective than high dose acetaminophen for analgesia, but resulted in a lower incidence of nausea ($p < 0.05$)</p>

Appendix 1 page 19 of 22

Schreiner et al. 1990 (USA)	- to examine the effects of liberal intake of clear liquids up to 2h prior to induction of anesthesia, on gastric fluid volume and pH - to determine parents use of the Internet for information relating child's health	121 children (1 – 18 years) - liberal intake or routine preoperative fasting	RCT - gastric volume and pH - child's irritation (a linear analogue scale) - preoperative experience (a linear analogue scale) survey	- no differences between groups in the volume of gastric fluid ($p= 0.77$) - parents of the study group rated their feeding instructions as easy than did the parents of the control group ($p< 0.001$) and children in the study group were less irritable ($p<0.001$) - 98% found the information comprehensive - 68% trusted and 32% somewhat trusted to the information - 52% were influenced by the information - using Internet as a main source of information needs to be explored because of potential misleading knowledge - parents and nurses: involvement of the parents was passive in nature - nurses did not invite the parents to be actively involved - despite of obvious need-for-information the parents did not approach the nurses - some parents indicated that they received inadequate information but were careful and avoided criticizing staff
Semere et al. 2003 (Netherlands)		150 parents		
Simons et al. 2001 (UK)	- to investigate the views of parents and nurses about the involvement of parents in their child's care during 48h after surgery	20 nurses / 20 mothers	interview	
Sjöling et al. 2003 (Sweden)	- to test whether specific preoperative information can relieve postoperative pain and the impact of preoperative information on state and trait anxiety, satisfaction on pain management and nursing care	60 knee arthroplasty patients - specific information / routine information	prospective experimental study - VAS	- the degree of preoperative state anxiety was lower and patients more satisfied with the postoperative pain management - the amount of information may be extensive and the individual person may remember only a fraction of it - combination of verbal and written information and repetition is desirable - the role of nurse-patient interaction is crucial and leads to better self-care.

Appendix 1 page 20 of 22

<p>Smith & Callery 2004 (UK)</p>	<p>- to explore the information need of children</p>	<p>9 children (7 – 11 years)</p>	<p>interview</p>	<ul style="list-style-type: none"> - children need need information about their own care - information should be presented also directly to children - children may not receive information from health care professionals - sources of their preoperative information may be television, friends and relatives
<p>Spencer & Franck et al. 2005 (UK)</p>	<p>- to examine the effects of a preoperative information leaflet</p>	<p>40 parents - leaflet sent by post 1 week after the preoperative visit and before surgery or leaflet given at the preoperative visit 2 weeks before surgery</p>	<p>RCT - questionnaire - knowledge (SAL.T, standard anesthetic learning test, Miller et al. 1999), anxiety (APAIS, Meurman et al. 1996; Amsterdam preoperative anxiety and information scale and numeric scale about intensity 0-10) and satisfaction (Likert 0-5)</p>	<ul style="list-style-type: none"> - leaflet given at the clinic visit or within 2 weeks preoperatively regardless the way it was delivered <ul style="list-style-type: none"> - 10% better knowledge - the most common errors in knowledge: methods for calming down the child; who an anesthetist is; what a pulse oximeter does - the greatest improvement related to why children should fast before surgery and purpose of an intravenous line - no difference in anxiety/satisfaction in timing or method they received information with
<p>Suhonen & Leino-Kilpi 2006 (Finland)</p>	<p>- to explore what is known of surgical patients' informational need, opinions about the provision of information and the effect of individualized information</p>	<p>69 publications - the Cochrane Database of Systematic Reviews; the Cochrane Central Register of Controlled Trials: 1994 – 2004 - “information”, “surgical patient adult”, “nursing”</p>	<p>a literature review</p>	<ul style="list-style-type: none"> - surgical patient have specific informational needs during the perioperative period - the patients may not be given the information they need - individually developed learning and teaching strategies are needed - individualized information to certain patient characteristics has important role for surgical patients: it enables patient to take more control over their health care and comply with medical treatment

Appendix 1 page 21 of 22

Temple & Timms 2001 (UK)	- to explore difference in recovery after tissue coblation compared to standard bipolar dissection (TE)	38 children (4 – 12 years) - tissue coblation or standard bipolar dissection	RCT - pain (VAS, 1 – 10), return to normal diet	- according to postoperative diary the parents kept for 9 days: - after tissue coblation children had less pain ($p < 0.0001$) and returned earlier to a normal diet ($p = 0.0001$)
Timms 2006 (Ireland)	- to explore the concept of information need	90 publications - Cinahl, PubMed, ERIC - “information needs”, learning needs”, “educational needs”	a literature review	- true information needs are expressed spontaneously by the client/family - families have active information-seeking behaviors and express of need for information - nurses aim is to provide not only information, but to improve client knowledge that improves health outcomes
Tourigny et al. 2005 (Canada)	- to investigate the nature and strength of parental beliefs about their participation in child’s day surgery and demonstrate parental behaviors during the immediate postoperative period	220 parents	descriptive correlative design (Parents’ Beliefs Questionnaire/Self-Administered Questionnaire on Care/Parental Behaviours Inventory, Tourigny et al. 2005) video-observation	- parents can be valuable partners in day surgery settings - parents should be informed and supported in their partnership in their child’s care
Virtanen et al. 2007 (Finland)	- to describe the nature of empowering discourses between patient and nurse	316 publications - Medline: 1/1995 – 10/2005 “empower”, “power”, “resource”, “participant”, “facilitate”, “negotiate”, “communicate”, “interact”, “dialog”, “discourse”, “discuss”, “encounter”, “conversation”, “nurse-patient relations”	a systematic literature review	- by empowering discourses nurses are able to facilitate individual patient learning - patients’ real needs are able to be met by providing advice and guidance, by taking levels of their knowledge, abilities, attitudes and values into account

Appendix 1 page 22 of 22

<p>Wisselo et al. 2004 (Netherlands)</p>	<p>- to evaluate what parents, which are information-seekers or information-avoiders, want to know about child's surgical procedure</p>	<p>100 parents</p>	<p>questionnaire: - what they would like to be better informed about - what they are most concerned about - timing of the preoperative information</p>	<p>- better information was wanted about: induction (81%), side-effects (81%), emergence from anesthesia (79%) and pain relief (79%) - most concerned the parents were about postoperative pain (88%), anesthesia (79%), emergence from anesthesia (78%), nausea (78%), induction (70%) - wanted timing of information was at least a week before surgery - no statistical difference in answers between avoiders and seekers - 90% wanted a leaflet, 80% a preoperative visit, 24% a meeting with play specialist, 18% an information morning</p>
<p>Wolfensberger et al. 2000 (Switzerland)</p>	<p>- to assess the expectations of the parents before tonsillectomy and satisfaction after one year</p>	<p>576 parents</p>	<p>questionnaire - list of symptoms from which they expected relief and to assess the subjective benefit 1 year later</p>	<p>- response rate 87% (invited 664) - 91% were satisfied - if at least some of the additional symptoms, in addition to the main reason for tonsillectomy, were not improved the parents were not necessary satisfied</p>

<p>BOOKS:</p>			
<p>Bastable SB (Ed).</p>	<p>2006</p>	<p>Essentials of patient education</p>	<p>Studbury: Jones and Bartlett Publishers.</p>
<p>Leino-Kilpi et al.</p>	<p>2000</p>	<p>Patient's autonomy, Privacy and Informed Consent</p>	<p>Amsterdam: IOS Press.</p>
<p>Miller RD (Ed) 5th ed.</p>	<p>2000</p>	<p>Anesthesia</p>	<p>New York, Churchill Livingstone Inc</p>
<p>Redmon BK (Ed) 9th ed</p>	<p>2001</p>	<p>The practice of patient education</p>	<p>St. Louis: Mosby</p>
<p>Suominen T & Leino-Kilpi H. (toim.)</p>	<p>1997</p>	<p>Lyhytkirurginen potilas terveydenhuollon asiakkaana [Short Term Patient in Health Care System]</p>	<p>Stakes. Raportteja 210. Jyväskylä: Gummerus Kirjapaino Oy.</p>

Turun yliopisto
Hoitotieteen laitos

Hyvä _____ vanhempi / vanhemmat

Tervetuloa _____ kanssa _____ / _____ - _____ klo _____

tutustumaan Turun yliopistollisen keskussairaalan korva-, nenä- ja kurkkutautien klinikan päiväkirurgiseen yksikköön, U- sairaala 3. krs, ja keskustelemaan lapsenne toimenpiteeseen liittyvistä asioista. Jos edellä mainittu aika ei teille sovi tai teillä on kysyttävää, pyydän teitä ottamaan yhteyttä numeroon 0400 536 066, Seija Klemetti.

Ystävällisin terveisin

Seija Klemetti
TtM, Esh, TtT- opiskelija

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Turun yliopisto
Hoitotieteen laitos

PÄIVÄKIRURGISEEN NIELURISALEIKKAUKSEEN TULEVAN LAPSIPOTILAAN NESTEYTTÄMINEN ENNEN LEIKKAUSTA

Leikkaushoitoon liittyvän paaston tarkoitus on vähentää pahoinvointi- ja oksennusriskiä sekä estää aspiraatiota, vatsan sisällön joutumista hengitysteihin. Tutkimusten mukaan päiväkirurgiseen leikkaukseen tulevat lapset paastoavat kuitenkin tarpeettoman pitkään ennen leikkausta vaikka kirkkaiden nesteiden on todettu nimenomaan edistävän vatsan tyhjenemistä. Tutkimus on myös osoittanut, että pitkittynyt paasto ennen leikkausta voi aiheuttaa lapselle pahoinvointia leikkauksen jälkeen ja lisätä hänen herkkyyttään kivulle. Tällöin lapsen ravinnon ja nesteen otto myös leikkauksen jälkeen voi olla rajoittunutta ja lapsen paasto jatkuu aiheuttaen lapselle epämukavuutta ja elimistön kuivumista. Toisaalta, jos lapsi on saanut nesteitä ennen leikkausta, voi juomisen aloittaa leikkauksen jälkeen rauhallisemmin, kunnes lapsi itse haluaa. Lasten leikkaushoitoon liittyvät paaston suositukset ovatkin muuttuneet. Lapselle riittää neljän tunnin paasto, kirkkaita nesteitä lapsi voi juoda kaksi tuntia ennen leikkausta.

Tämän ohjeen tavoitteena on valmistaa lasta turvallisesti nielurisaleikkaukseen siten, että pahoinvointi ja kipuherkkyys leikkauksen jälkeen olisivat mahdollisimman vähäisiä, tai jos niitä esiintyy, lapsen valmiudet ja yleiskunto kohdata ongelmat olisivat paremmat.

Edellinen ilta:

Antakaa lapsellenne tavallista runsaampi iltapala leikkausta edeltäneenä iltana ennen nukkumaan menoa, esimerkiksi puuro, muroja, leipää ja maitoa tms. sekä runsaasti juotavaa. **Lapsi ei kuitenkaan saa syödä tai juoda maitoa 4:än tuntiin ennen nukumista eli aamulla klo 5 jälkeen.**

Leikkauspäivän aamu:

Lapsi saa juoda kirkkaita nesteitä aamu klo 7 asti. Kirkkaita nesteitä ovat:

**MEHUT, JOISSA EI OLE ”HEDELMÄLIHAA” TAI –PALOJA,
ESIM. OMENAMEHU, ”TRIP-MEHUT”
MYÖS MEHUIJÄÄ ON SALLITTU**

Antakaa lapselle juotavaa seuraavasti:

Appendix 3 page 2 of 2

KLO	MÄÄRÄ:
klo 4.30	ml = lasillista mehua
klo 7	ml = lasillista mehua

Älkää kuitenkaan pakottako lasta, jos hän ei ehdottomasti halua juoda tiettyä ajankohtana suostuttelunkaan jälkeen.

Jos mielessänne herää kysymyksiä tai jokin asia on epäselvä ja askarruttaa Teitä, ottakaa yhteyttä TYKS:n korva-, nenä- ja kurkkutautien päiväkirurgiaan (puh. 02 313 2553) tai seuraavaan henkilöön:

Seija Klemetti

TtM, esh, TtT -opiskelija

Korva-, nenä- ja kurkkutautien klinikka

Päiväkirurgia

TYKS

puh. 02 313 2553 tai 0400 536 066

email: seija.klemetti@tyks.fi tai seija.klemetti@utu.fi

Crawford M, Lerman J, Christensen S & Farrow-Gillespie A (1990) Effects of duration of fasting on gastric fluid pH and volume in healthy children. *Anesthesia & Analgesia* 71 (4), 400 – 403.

Emerson BM, Wrigley SR & Newton M (1998) Pre-operative fasting for paediatric anaesthesia. A survey of current practice. *Anaesthesia* 53 (4), 326 – 330.

Ferrari LR, Rooney FM & Rockoff MA (2000) Preoperative fasting practices in pediatrics. *Anesthesiology* 90 (4), 978 – 980.

Green CR, Pandit SK & Schork MA (1996) Preoperative fasting time: is the traditional policy changing? Results of a national survey. *Anesthesia & Analgesia* 83 (1), 123 – 128.

Maekawa N, Mikawa K, Yaku H, Nishina K & Obara H (1993) Effects of 2-, 4- and 12 hour fasting intervals on preoperative gastric fluid pH and volume, and plasma glucose and lipid homeostasis in children. *Acta Anaesthesiologica Scandinavica* 37 (8), 783 – 787.

Schreiner MS, Triebwasser A & Keon TP (1990) Ingestion of liquids compared with preoperative fasting in pediatric outpatients. *Anesthesiology* 72 (4), 593 – 597.

Soreide E, Eriksson LI, Hirlekar G, Eriksson H, Henneberg SW, Sandin R & Raeder J. 2005. Pre-operative fasting guidelines: an update. *Acta Anesthesiologica Scandinavica* 49, 1041 – 1047.

Splinter WM & Schaefer JD (1990) Unlimited clear fluid ingestion two hours before surgery in children does not affect volume or pH of stomach contents. *Anaesthesia & Intensive Care* 18 (4), 522 – 526.

Splinter WM, Stewart JA & Muir JG (1989) The effect of preoperative apple juice on gastric contents, thirst and hunger in children. *Canadian Journal of Anaesthesia* 36 (1), 55 – 8.

Veall GR Floor K & Dorman T (1995) Prolonged starvation in paediatric surgery. *Anaesthesia* 50 (5), 458 – 460.

Appendix 4

Korva-, nenä- ja kurkkutautien klinikka

Teille on varattu aika Turun yliopistollisen keskussairaalan Korva-, nenä- ja kurkkutautien poliklinikalle
_____ **leikkaukseen.**

_____ klo _____

Toimenpiteen suorittaa lääkäri _____

Korva-, nenä- ja kurkkutautien poliklinikka sijaitsee U-sairaalan 3. kerroksessa.

Ilmoittautukaa sisääntuloaulan korva- ja silmätautien ilmoittautumispisteessä (3.krs, rakennus 3). Päiväkirurginen käyntimaksu on 83,90 euroa. Käynnistä saatte postitse laskun kotiin. Asiakasmaksumuutokset ovat mahdollisia.

TYKS toimii opetussairaalanana, joten on mahdollista, että toimenpiteessä on mukana lääketieteen/sairaanhoidon opiskelijoita.

Käyttämättä ja peruuttamatta jääneestä poliklinikka-ajasta peritään 15 vuotta täyttäneeltä potilaalta 31,50 euron maksu. Mikäli ette voi saapua Teille varattuna aikana, Teidän tulee ilmoittaa siitä viimeistään edellisenä päivänä puoleen päivään mennessä.

Jos varattu aika ei sovi Teille, tai jos olette sairastunut tarttuvaan tautiin, voitte soittaa p. (02) 313 1527 arkisin klo 10.00–12.00.

Huom! Mikäli olette ollut osastohoidossa tai toimenpiteissä ulkomailla, pääkaupunkiseudulla tai Pirkanmaalla vuonna 2001 tai sen jälkeen, ilmoittakaa asiasta yllä olevaan puhelinnumeroon, jotta voimme ennakkoon sopia tarvittavien seulontanäytteiden ottamisesta. (Ottakaa myös yhteyttä, jos olette viimeisen vuoden aikana olleet em. sairaaloissa/hoitolaitoksissa opiskelemassa tai työssä.).

Ottakaa mukaanne:

- Kutsukirje ja sairausvakuutuskortti
- Halussanne olevat käyntiin liittyvät röntgenkuvat
- Käytössä olevien lääkkeiden reseptit

Tutkimuksianne ja hoitoanne koskevat tiedot kirjataan potilaskertomukseen. Henkilökunnaltamme saatte myös muuta potilaskertomusta koskevaa tietoa. . Polikliinisen hoidon yhteenveto lähetetään lähettävälle lääkärille ja/tai jatkohoidosta vastaavalle lääkärille sekä teille itsellenne tai haluamallenne taholle esim. omalääkärille. Jos haluatte, että toimimme toisin, ilmoittakaa siitä henkilökunnallemme.

____ / ____ 200____

Päiväkirurgiseen toimenpiteeseen tulevalle / lapsi (T)

Potilasohje / i / korva-, nenä- ja kurkkutaudit / TYKS

[på svenska](#) [in english](#)



Vain yksi päivä sairaalassa

Turun Yliopistollisen Keskussairaalan korva-, nenä- ja kurkkutautien klinikassa tehdään päiväkirurgista leikkaustoimintaa. Tämä tarkoittaa sitä, että tietyt pienehköt leikkaustoimenpiteet on mahdollista suorittaa yhden päivän aikana. Tällöin sairaalan poliklinikalle tullaan kotoa aamulla ravinnotta toimenpidettä varten. Vanhemmat jättävät lapsen poliklinikan leikkausosastolle, jossa toimenpide suoritetaan aamupäivällä. Lapsen siirtyessä takaisin lepäämään vanhemmat ovat lapsen seurana. Kotiutuminen tapahtuu noin klo 12 - 15 välisenä aikana.

Ravinnotta

Toimenpiteen takia on tärkeää, että mahalaukku on tyhjä. **Neljä tuntia ennen toimenpidettä pitää olla syömättä ja kaksi tuntia ennen juomatta.** Vettäkään ei saa juoda. Rajoitus koskee myös pastilleja, karamelleja ja purukumia. Vain välttämättömät lääkkeet saa ottaa

pienen vesimäärän kera.

Nukutus

Toimenpide suoritetaan nukutuksessa; kesto noin 1/2-1 tuntia.

Kotiin paluu

Jos menette kotiin omalla autolla, on saattajan ja autonkuljettajan oltava eri henkilö. Tarvittaessa käyttäkää taksia.

Juomat ja ruoka

Lepäämössä annetaan lapselle jo juomista ja jäätelöä. Kotiin kannattaa varata mehua, virvoitusjuomia, jäätelöä, jogurttia, viiliä ym. kylmää nestemäistä ruokaa.

Lääkitys

Toimenpiteen jälkeen mahdollisesti tarvittavasta lääkityksestä annetaan reseptit mukaan kotiin lähettäessä.

Lapsen sairausloman pituus _____ vuorokautta

Jälkitarkastus _____

Osoite: Turun Yliopistollinen Keskussairaala, korva-, nenä- ja kurkkutautien poliklinikka, U-sairaala 3. kerros, Kiinamylynkatu 4-8, 20520 TURKU, puh: 02-313 1527

Appendix 6 page 1 of 2

TYKS/korva-, nenä- ja kurkkutautien klinikka/päiki

Pvm ___/___/20__

KOTIHOITO-OHJEET NIELURISALEIKKAUKSEN JÄLKEEN

Nielurisat sijaitsevat molemmin puolin nielun sivuilla kielenkannan takana. Parin päivän kuluessa leikkauksesta haavapintaan ilmestyvät harmahtavat peitteet. Ne irtoavat itsestään 1-2 viikon kuluttua leikkauksesta, jolloin nielu kipeytyy uudelleen pariin päiväksi. Tällöin voi ilmetä pientä tihkuvaa verenvuotoa.

Toipuminen nielurisaleikkauksesta tapahtuu vähitellen. Leikkauksen seurauksena nielun lihakset ärsyntyvät, minkä takia kurkku on kipeä 1-2 viikkoa leikkauksen jälkeen. Hankalin kipu on niellessä, koska haavapinta liikkuu ja ruoka kulkeutuu leikkausalueen kautta. Kipulääkettä on käytettävä aluksi säännöllisesti, jotta olo olisi parempi, ja juominen ja syöminen helpompaa.

Leikkauspäivänä kannattaa aluksi juoda vain kylmää vettä ja myöhemmin mehua tai muuta energiapitoista juomaa, esim. mustikkasoppaa. Nesteiden saaminen on toipumisen kannalta tärkeää, joten juomiseen on kiinnitettävä huomiota. Jos on nälkä, voi syödä jäätelöä, viiliä, jogurttia ja pehmeää haaleaa ruokaa. (Lisää ruokailuohjeita kääntöpuolella.)

Sairausloma työstä on kaksi viikkoa. Sairausloman ajan on vältettävä saunomista, kuntourheilua ja muuta ruumiillista ponnistusta. Lasten on syytä olla viikko poissa koulusta tai päivähoidosta ja kaksi viikkoa koululiikunnasta.

Jälkitarkastus ei yleensä ole tarpeellinen.

Pientä lämpöä ja kivun säteilyä korviin voi esiintyä muutamana päivänä leikkauksen jälkeen.

Ottakaa yhteys, jos

- ilmenee runsasta verenvuotoa tai vuoto ei asetu n. ½ tunnin sisällä
- pahoinvointi on jatkuvaa ja oksentelu toistuvaa

Puh. (02) 3131 559 arkisin klo 8.00–15.00 päiväkirurgia
(02) 3131 525 päivystys korvapoliiklinikka

HYVÄÄ VOINTIA toivottavat:

Lääkäri

ja

Sairaanhoitaja

HUOM! AIKUISET!

Olette saanut leikkauksen aikana rauhoittavia lääkkeitä, jotka voivat olla vaarallisia yhdessä alkoholin tai autoilun kanssa. Lääkkeet voivat myös alentaa arvostelukykyyänne, joten älkää allekirjoittako tärkeitä sopimuksia tai tehkö muita päätöksiä seuraavan 24 tunnin aikana.

RUOKAILUVIHJEITÄ:

Kuorsaus- ja nielurisaleikkauksen jälkeen nieleminen on vaikeaa ja tuottaa kipua.

Kipulääkettä kannattaa ottaa annettujen ohjeiden mukaan syömisen ja juomisen helpottamiseksi.

Huuhtokaa suu hyvin ennen ja jälkeen aterian.

Toimenpidepäivänä kannattaa yrittää ainakin juoda runsaasti kylmää. Seuraavana päivänä voi siirtyä huoneenlämpöiseen, pehmeään ravintoon ja aloittaa määrätietoisemman "tankkauksen".

Vältä kuumaa, kirpeää, karkeaa ja kuivaa ruokaa.

Kokeilkaa esim.

- puuroja, vellejä ja liemiruokia
- sose- ja mehukeittoja, mietoja mehuja, kiisseleitä, hyytelöitä ja vanukkaita
- munakkaita, peruna-, kasvis- ja hedelmäsoseita (esim. lasten tölkkiruuat)
- jäätelö-, marja- ja banaanipirtelöitä

Viikon kuluttua toimenpiteestä voitte siirtyä vähitellen normaaliin ravintoon. Pureskelkaa ruoka kuitenkin hyvin: nielemishaittoja voi ajoittain vielä esiintyä.

Appendix 7 page 1 of 5

Turun yliopisto
Hoitotieteen laitos

Mittari 1a/ preop
Nro:

PÄIVÄKIRURGISEN LAPSIPOTILAAN LEIKKAUSHOITON LIITTYVÄ PAASTO /
vanhemman kyselylomake

Tämän kyselyn tarkoituksena on selvittää vanhempien tietoa päiväkirurgisen lapsipotilaan leikkaushoitoon liittyvästä paastosta. Tavoitteena on kerätä tietoa vanhempien ohjauksen kehittämiseksi. Lomakkeessa on lasta ja lapsen paastoa koskevia väittämiä, joiden oikeellisuutta toivomme Teidän arvioivan. Merkitkää ympyröimällä tietoa vastaava vaihtoehto: oikein, väärin. Toivomme, että kyselyyn vastaa henkilö, joka huolehtii lapsenne valmistelusta ennen leikkausta ja hoidosta leikkauksen jälkeen.

VANHEMMAN TAUSTATIEDOT:

1. Kyselyyn vastaaja Puh:	ÄITI 1	ISÄ 2	MUU 3 kuka:
2. Ikä:	v.	v.	v.
3. Peruskoulutus: kansa-/keskikoulu/peruskoulu lukio/ylioppilas muu, mikä:	1 2 3	1 2 3	1 2 3
4. Ammattikoulutus ei ammattikoulutusta kouluasteen tutkinto opistoasteen tutkinto korkeakoulututkinto muu, mikä:	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
5. Työtilanne töissä työtön muu, mikä:	1 2 3	1 2 3	1 2 3
	ei	kyllä	
6. Onko perheessä terveyden- huollon edustajaa?	1	2	kuka ja missä ammatissa:
7. Lasten lukumäärä perheessä:	8. Minkä ikäisiä lapset ovat?		

9. Oletteko itse ollut aikaisemmin toimenpiteessä, joka on vaatinut paastoa?

(Green et al. 1996, Fasting et al. 1998, Ferrari et al. 2000)

kyllä en

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Toimenpide:	Vuosi:

Kokemuksenne paastosta? _____

10. Onko joku perheestänne ollut aikaisemmin toimenpiteessä, joka on vaatinut paastoa?

(Green et al. 1996, Fasting et al. 1998, Ferrari et al. 2000)

kyllä ei

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Kuka:	Toimenpide:	Vuosi:

Kuinka paasto onnistui? _____

11. Oletteko aikaisemmin saanut muualta tietoa lapsen leikkaukseen liittyvästä paastosta?

(Green et al. 1996, Fasting et al. 1998, Ferrari et al. 2000)

kyllä en

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Keneltä:	Missä:	Vuosi:

Minkälaista tietoa? _____

Appendix 7 page 3 of 5

LAPSEN PAASTO ENNEN LEIKKAUSTA:

1.	Paaston tarkoitus on, että lapsen vatsa on tyhjä nukutuksen alkaessa.	oikein	väärin	Emerson et al. 1998 Östman & White 2000
2.	Paastolla ennen leikkausta pyritään estämään lapsen oksentamista leikkauksen aikana.	oikein	väärin	Emerson et al. 1998 Östman & White 2000
3.	Paastolla ennen leikkausta pyritään vähentämään lapsen pahoinvointia leikkauksen jälkeen.	oikein	väärin	Green et al. 1998 Östman & White 2000
4.	Elimistön nesteiden ja suolojen mahdollisimman tasaisella määrällä ennen leikkausta pyritään edesauttamaan elimistön häiriötöntä toimintaa.	oikein	väärin	Crawford et al. 1990 Emerson et al. 1998 Friesen et al. 2000
5.	Kuinka kauan alle 10 -vuotiaan lapsen tulee olla syömättä ennen leikkausta? (merkitkää arvionne viereiseen ruutuun)			Emerson et al. 1998 Fasting et al. 1998
6.	Kuinka kauan alle 10 -vuotiaan lapsen tulee olla juomatta ennen leikkausta? (merkitkää arvionne viereiseen ruutuun)			Crawford et al. 1990 Emerson et al. 1998
7.	Sitä parempi, mitä kauemmin lapsi on ollut syömättä ja juomatta ennen leikkausta.	oikein	väärin	Schreiner et al. 1990 Fasting et al. 1998 Moyao-Garcia et al. 2001
8.	Hyvä nestetasapaino edellyttää, että elimistö saa nesteitä mahdollisimman paljon ennen leikkausta	oikein	väärin	Crawford et al. 1990
9.	Hyvä nestetasapaino edellyttää lapsen säännöllistä juomista ennen pakollisen paaston alkamista	oikein	väärin	Crawford et al. 1990 Emerson et al. 1998
10.	Lapsen syöminen ja juominen ennen leikkausta ovat yhtä tärkeitä.	oikein	väärin	Emerson et al. 1998
11.	Lapsen vatsa on sitä tyhjempi, mitä kauemmin hän on ollut syömättä	oikein	väärin	Schreiner et al. 1990 Östman & White 2000
12.	Huono nestetasapaino voi aiheuttaa lapselle pahoinvointia ennen leikkausta.	oikein	väärin	Emerson et al. 1998 Keidan et al. 2004
13.	Lapsen säännöllinen juominen ennen leikkausta voi vaikuttaa lapsen toipumiseen leikkauksen jälkeen	oikein	väärin	Schreiner & Nicolson 1992 Green et al. 1998

14.	Lapsi voi olla pahoinvoiva leikkauksen jälkeen, jos hän on ollut pitkään ilman ravintoa ennen leikkausta.	oikein	väärin	Appendix 7 page 4 of 5 Schreiner & Nicolson 1992 Green et al. 1998
15.	Lapsen nestetasapainolla ei ole merkitystä leikkauksen aikana, koska hän saa nestettä suonensisäisesti.	oikein	väärin	Friesen et al. 2000
16.	Vatsansisällön runsaus vaikuttaa lapsen oksentamisherkkyyteen.	oikein	väärin	Crawford et al. 1990 Maekawa et al. 1993
17.	Vatsansisällön happamuus vaikuttaa lapsen oksentamisherkkyyteen.	oikein	väärin	Crawford et al. 1990 Maekawa et al. 1993
18.	Oksennuksen joutuminen lapsen hengitysteihin leikkaushoidon yhteydessä on harvinaista.	oikein	väärin	Crawford et al. 1990 Fasting et al. 1998

LAPSEN PAASTON LOPETTAMINEN LEIKKAUKSEN JÄLKEEN:

19.	Hyvä nestetasapaino edellyttää, että elimistö saa nesteitä mahdollisimman paljon leikkauksen jälkeen	oikein	väärin	Messner & Barbita 1997
20.	Hyvä nestetasapaino edellyttää lapsen runsasta juomista leikkauksen jälkeen	oikein	väärin	Messner & Barbita 1997
21.	Lapsen tulee juoda mahdollisimman pian leikkauksen jälkeen.	oikein	väärin	Messner & Barbita 1997
22.	Lapsen tulee juoda mahdollisimman pian leikkauksen jälkeen vaikka hänellä olisikin pahoinvointia.	oikein	väärin	Messner & Barbita 1997
23.	Verenvuotoriski kasvaa, jos lapsi aloittaa juomisen pian leikkauksen jälkeen.	oikein	väärin	Holzmann et al.2000
24.	Lapsen ei tarvitse juoda leikkauksen jälkeen ennen kuin hän itse haluaa.	oikein	väärin	Messner & Barbita 1997
25.	Lapsen ei tarvitse syödä leikkauksen jälkeen ennen kuin hän itse haluaa.	oikein	väärin	Messner & Barbita 1997
26.	Lapsen on pystyttävä juomaan ennen kotiin lähtöä.	oikein	väärin	Messner & Barbita 1997
27.	Lapsen on pystyttävä syömään ennen kotiin lähtöä.	oikein	väärin	Messner & Barbita 1997
28.	Lapsen juominen ja syöminen ovat yhtä tärkeitä leikkauksen jälkeen	oikein	väärin	Schreiner & Nicolson 1992

				Appendix 7 page 5 of 5
29.	Mahdollisimman hyvä nestetasapaino nopeuttaa lapsen toipumista leikkauksesta	oikein	väärin	Green et al.1998
30.	Mahdollisimman hyvä nestetasapaino vähentää lapsen kipuherkkyyttä	oikein	väärin	Green et al. 1998
31.	Huono nestetasapaino voi aiheuttaa lapselle pahoinvointia leikkauksen jälkeen.	oikein	väärin	Green et al. 1998
32.	Lapsen lämpöily leikkauksen jälkeen voi johtua liian vähäisestä juomisesta	oikein	väärin	Holzmann et al. 2000

	ei ollenkaan			hyvin paljon	
	1	2	3	4	5
1. Olen huolissani nuketuksesta.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Nukutus on koko ajan mielessäni.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Haluaisin tietää nuketuksesta mahdollisimman paljon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Olen huolissani leikkauksesta.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Leikkaus on koko ajan mielessäni.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Haluaisin tietää leikkauksesta mahdollisimman paljon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Kiitos vastauksistanne!

Turun yliopisto
Hoitotieteen laitos

Hyvät lapsen vanhemmat / vanhempi

Olette vastannut jo kolmeen kyselylomakkeeseen tutkimuksessa, jonka aiheena on lapsen leikkaukseen liittyvä paasto ja lapsen toipuminen päiväkirurgisen nielurisaleikkauksen jälkeen. Tämä neljäs kyselylomake (Mittari 1b: vihreä) on viimeinen ja toivomme teidän vastaavan väittämiin tämän hetkisen tietonne perusteella. Postittakaa tämä ja edellinen, lapsen toipumista selvittävä lomake (punainen ja lapsen kasvomittarit), mukana seuraavalla valmiilla palautuskuorella mahdollisimman pian lomakkeen täyttämisen jälkeen.

Teille soimitaan kotiin viikon kuluessa lapsen leikkauksesta, jolloin Teillä on mahdollisuus keskustella lisää mm. tutkimukseen liittyvistä asioista, varsinkin jos jokin asia on jäänyt painamaan mieltänne.

Osallistumisestanne kiittäen ja lapsellenne pikaista toipumista toivottaen

Turussa / 2005

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Appendix 8 page 2 of 5

Turun yliopisto
Hoitotieteen laitos

Mittari 1b/ postop
Nro:

PÄIVÄKIRURGISEN LAPSIPOTILAAN LEIKKAUSHOITON LIITTYVÄ PAASTO /
vanhemman kyselylomake

Pyydämme Teitä vastaamaan uudelleen alla oleviin väittämiin nykyisen tietonne perusteella. Toivomme, että kyselyyn vastaahenkilö, joka on huolehtinut lapsenne valmistelusta ennen leikkausta ja hoidosta leikkauksen jälkeen.

LAPSEN PAASTO ENNEN LEIKKAUSTA:

1.	Paaston tarkoitus on, että lapsen vatsa on tyhjä nukutuksen alkaessa.	oikein	väärin	Emerson et al.1998 Östman & White 2000
2.	Paastolla ennen leikkausta pyritään estämään lapsen oksentamista leikkauksen aikana.	oikein	väärin	Emerson et al.1998 Östman & White 2000
3.	Paastolla ennen leikkausta pyritään vähentämään lapsen pahoinvointia leikkauksen jälkeen.	oikein	väärin	Green et al. 1998 Östman & White 2000
4.	Elimistön nesteiden ja suolojen mahdollisimman tasaisella määrällä ennen leikkausta pyritään edesauttamaan elimistön häiriötöntä toimintaa.	oikein	väärin	Crawford et al. 1990 Emerson et al. 1998 Friesen et al. 2000
5.	Kuinka kauan alle 10 -vuotiaan lapsen tulee olla syömättä ennen leikkausta? (merkitkää arvionne viereiseen ruutuun)			Emerson et al. 1998 Fasting et al. 1998
6.	Kuinka kauan alle 10 -vuotiaan lapsen tulee olla juomatta ennen leikkausta? (merkitkää arvionne viereiseen ruutuun)			Crawford et al. 1990 Emerson et al. 1998
7.	Sitä parempi, mitä kauemmin lapsi on ollut syömättä ja juomatta ennen leikkausta.	oikein	väärin	Schreiner et al. 1990 Fasting et al. 1998 Moyao-Garcia et al.2001
8.	Hyvä nestetasapaino edellyttää, että elimistö saa nesteitä mahdollisimman paljon ennen leikkausta	oikein	väärin	Crawford et al. 1990
9.	Hyvä nestetasapaino edellyttää lapsen säännöllistä juomista ennen pakollisen paaston alkamista	oikein	väärin	Crawford et al. 1990 Emerson et al. 1998
10.	Lapsen syöminen ja juominen ennen leikkausta ovat yhtä tärkeitä.	oikein	väärin	Emerson et al. 1998

				Appendix 8 page 3 of 5
11.	Lapsen vatsa on sitä tyhjempi, mitä kauemmin hän on ollut syömättä	oikein	väärin	Schreiner et al. 1990 Östman & White 2000
12.	Huono nestetasapaino voi aiheuttaa lapselle pahoinvointia ennen leikkausta.	oikein	väärin	Emerson et al. 1998 Keidan et al. 2004
13.	Lapsen säännöllinen juominen ennen leikkausta voi vaikuttaa lapsen toipumiseen leikkauksen jälkeen	oikein	väärin	Schreiner & Nicolson 1992 Green et al. 1998
14.	Lapsi voi olla pahoinvoiva leikkauksen jälkeen, jos hän on ollut pitkään ilman ravintoa ennen leikkausta.	oikein	väärin	Schreiner & Nicolson 1992 Green et al. 1998
15.	Lapsen nestetasapainolla ei ole merkitystä leikkauksen aikana, koska hän saa nestettä suonensisäisesti.	oikein	väärin	Friesen et al. 2000
16.	Vatsansisällön runsaus vaikuttaa lapsen oksentamisherkkyyteen.	oikein	väärin	Crawford et al. 1990 Maekawa et al. 1993
17.	Vatsansisällön happamuus vaikuttaa lapsen oksentamisherkkyyteen.	oikein	väärin	Crawford et al. 1990 Maekawa et al. 1993
18.	Oksennuksen joutuminen lapsen hengitysteihin leikkaushoidon yhteydessä on harvinaista.	oikein	väärin	Crawford et al. 1990 Fasting et al. 1998

LAPSEN PAASTON LOPETTAMINEN LEIKKAUKSEN JÄLKEEN:

19.	Hyvä nestetasapaino edellyttää, että elimistö saa nesteitä mahdollisimman paljon leikkauksen jälkeen	oikein	väärin	Messner & Barbita 1997
20.	Hyvä nestetasapaino edellyttää lapsen runsasta juomista leikkauksen jälkeen	oikein	väärin	Messner & Barbita 1997
21.	Lapsen tulee juoda mahdollisimman pian leikkauksen jälkeen.	oikein	väärin	Messner & Barbita 1997
22.	Lapsen tulee juoda mahdollisimman pian leikkauksen jälkeen vaikka hänellä olisikin pahoinvointia.	oikein	väärin	Messner & Barbita 1997
23.	Verenvuotoriski kasvaa, jos lapsi aloittaa juomisen pian leikkauksen jälkeen.	oikein	väärin	Holzmann et al.2000
24.	Lapsen ei tarvitse juoda leikkauksen jälkeen ennen kuin hän itse haluaa.	oikein	väärin	Messner & Barbita 1997
25.	Lapsen ei tarvitse syödä leikkauksen jälkeen ennen kuin hän itse haluaa.	oikein	väärin	Messner & Barbita 1997

				Appendix 8 page 4 of 5
26.	Lapsen on pystyttävä juomaan ennen kotiin lähtöä.	oikein	väärin	Messner& Barbita 1997
27.	Lapsen on pystyttävä syömään ennen kotiin lähtöä.	oikein	väärin	Messner & Barbita 1997
28.	Lapsen juominen ja syöminen ovat yhtä tärkeitä leikkauksen jälkeen	oikein	väärin	Schreiner et al. 1992
29.	Mahdollisimman hyvä nestetasapaino nopeuttaa lapsen toipumista leikkauksesta	oikein	väärin	Green et al.1998
30.	Mahdollisimman hyvä nestetasapaino vähentää lapsen kipuherkkyttä	oikein	väärin	Green et al. 1998
31.	Huono nestetasapaino voi aiheuttaa lapselle pahoinvointia leikkauksen jälkeen.	oikein	väärin	Green et al. 1998
32.	Lapsen lämpöily leikkauksen jälkeen voi johtua liian vähäisestä juomisesta	oikein	väärin	Holzmann et al. 2000

	ei ollenkaan				hyvin paljon
	1	2	3	4	5
1. Olen huolissani nukutuksesta.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Nukutus on koko ajan mielessäni.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Haluaisin tietää nukutuksesta mahdollisimman paljon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Olen huolissani leikkauksesta.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Leikkaus on koko ajan mielessäni.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Haluaisin tietää leikkauksesta mahdollisimman paljon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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1. Arvioikaa tämän tutkimuksen aikana saamaanne lapsen leikkaukseen liittyvää paastoa koskevaa ohjausta. Merkitkää rasti viivalle kokemustanne vastaavaan kohtaan.

Ohjaus oli mielestäni

- 1a. ei lainkaan _____ selkeää
selkeää
- 1b. ei lainkaan _____ ymmärrettävää
ymmärrettävää
- 1c. ei lainkaan _____ riittävää
riittävää

Osasin toimia ohjeiden mukaan

- 1d. en lainkaan _____ erittäin hyvin

Ymmärsin lapsen leikkaukseen liittyvän paaston tarkoituksen ja toteutuksen

- 1e. en lainkaan _____ erittäin hyvin

Yhteistyö lapseni kanssa paaston toteutuksen suhteen onnistui

- 1f. ei lainkaan _____ erittäin hyvin
hyvin

2. Oletteko saanut tämän tutkimuksen aikana muualta tietoa lapsen leikkaukseen liittyvästä paastosta? kyllä en

--	--

Keneltä:	Missä:

Minkälaista tietoa? _____

Kiitos vastauksistanne!

Turun yliopisto
Hoitotieteen laitos

Hyvät lapsen vanhemmat / vanhempi

Olette antanut suostumuksen osallistumisellenne tutkimukseen, jonka aiheena on lapsen leikkaukseen liittyvä paasto ja lapsen toipuminen päiväkirurgisen nielurisaleikkauksen jälkeen. Olette myös vastannut jo yhteen kyselylomakkeeseen lapsen leikkaukseen liittyvästä paastosta. Tämän kyselylomakkeen (Mittari 2a: sininen) saatte täytettäväksi tulohaastattelun yhteydessä. Lomake sisältää lapsen taustatiedot ja selvittää lapsen paaston toteutumista ja lapsen vointia ennen leikkausta.

Osallistumisestanne kiittäen

Turussa / 2005

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Turun yliopisto
Hoitotieteen laitos

Mittari 2a
Nro:

PÄIVÄKIRURGISEN LAPSIPOTILAAN LEIKKAUSHOITON LIITTYVÄ PAASTO ENNEN LEIKKAUSTA / vanhemman kyselylomake

Tämän kyselylomakkeen tarkoituksena on selvittää, kuinka lapsenne paasto on toteutunut ennen leikkausta. Lomakkeessa on lastanne ja lapsenne paastoa koskevia kysymyksiä, joihin toivomme Teidän vastaavan.

LAPSEN TAUSTATIEDOT:

1. Sukupuoli : tyttö 1 poika 2	2. Ikä: _____ vuotta
3. paino:	4. pituus:
5. Allergiat:	6. Säännöllinen lääkitys:
7. Perussairaudet:	

8. Lapsen aikaisemmat toimenpiteeseen liittyvät paastot:

a. Toimenpide / vuosi

b. Kuinka paasto onnistui?

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

LAPSEN PAASTO ENNEN LEIKKAUSTA:

9. Lapsi on juonut/syönyt leikkauspäivää edeltävänä iltana klo 20 jälkeen:

Lapsen syöminen / Ruoka	määrä	klo
Lapsen juominen/ Juoma	määrä	klo

10. LAPSI ON OLLUT: a. KOKONAAN SYÖMÄTTÄ KLO _____ LÄHTIEN.

b. KOKONAAN JUOMATTA KLO _____ LÄHTIEN.

11. Onko lapsenne leikkauspäivän aamun aikana ollut: (laittakaa x lapsenne vointia kuvaaviin ruutuihin)

	kyllä	ei		kyllä	ei
kivulias			kuumeinen		
pahoinvoiva			levoton		
janoinen			rauhallinen		
nälkäinen			virkeä		
oksenteleva			nukkunut		
jännittynyt			virtsanut		
itkuinen			Muuta:		
ärtyinen					
väsänyt					
hikinen					

(Keidan et al 2004)

12. Onko lapsellanne ollut leikkauspäivän aamun aikana erityisiä toivomuksia / mielipiteitä syömisen tai juomisen suhteen?

(Green et al. 1996)

kyllä ei

--	--

Jos kyllä, millaisia? _____

13. Onko lapsenne paasto ennen leikkausta ollut mielestänne vaikea toteuttaa?

(Green et al 1996)

kyllä ei

--	--

Jos kyllä, mitä ongelmia oli lapsenne paaston toteuttamisessa? _____

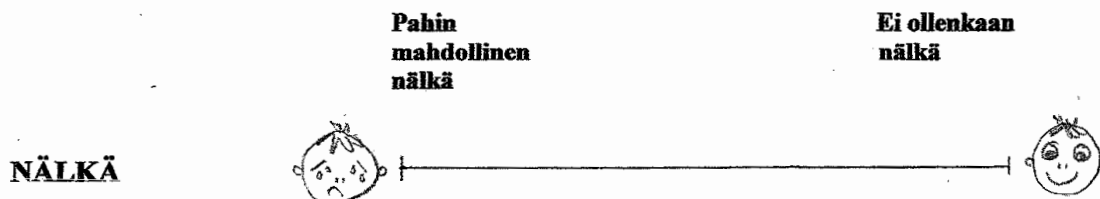
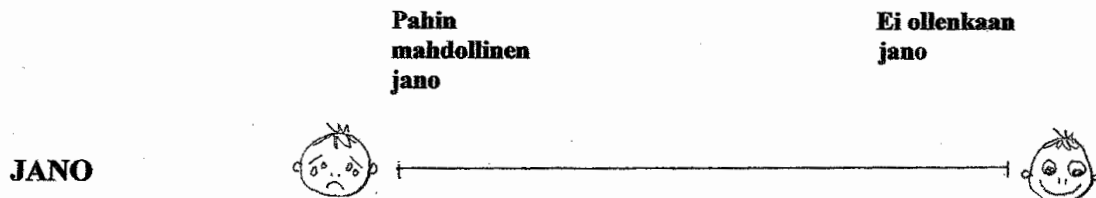
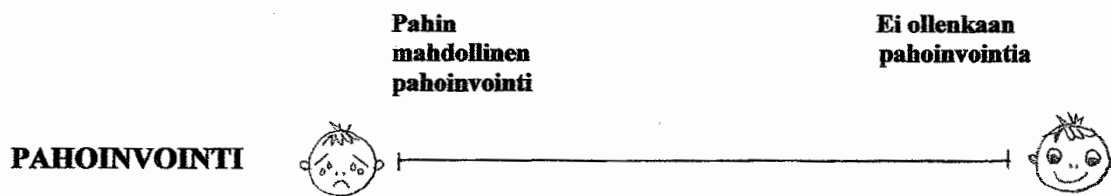
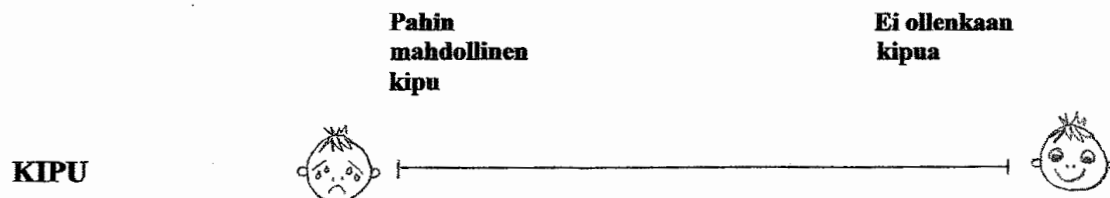
mitkä asiat erityisesti helpottivat lapsenne paaston toteuttamista? _____

Kiitos vastauksistanne!

Appendix 10

Mittari 2c / LAPSEN KOKEMUS klo _____

Nro:



Appendix 11

Turun yliopisto
Hoitotieteen laitos

Mittari 2b
Nro:

INTRAOPERATIIVINEN MITTAUS (anestesiaalomake, tutkija kerää tiedot)
(Wilson et al. 1990, Friesen et al. 2002, Keidan et al. 2004, Treston 2004)

1. Preoperatiivisen paaston pituus: t /min
2. Leikkaus: TE 1 TEA 2
3. Leikkaus alkoi klo
4. Leikkauksen kesto (min)
5. Sivutoimenpiteet
6. RR ja pulssi -seuranta 5min välein leikkauksen aikana
7. Vuoto (ml)
8. Iv-nesteet
9. Standardista poikkeavat lääkkeet/tapahtumat leikkauksen aikana:
10. Muut huomiot leikkauksen aikana
11. Siirto heräämööön klo

Heräämö

12. Heräämöseuranta (klo, oire, toimenpide, tulos, pulssi 10 min välein)

13. Onko lapsi heräämöseurannan aikana ollut:
(x lapsen vointia kuvaaviin ruutuihin, heräämöhoitajan arvio)

	kyllä	ei		kyllä	ei
kivulias (vas 0-10)			kuumeinen		
pahoinvoiva (vas 0-10)			levoton		
janoinen (vas 0-10)			rauhallinen		
nälkäinen (vas 0-10)			virkeä		
oksenteleva			nukkunut		
jännittynyt			virtsanut		
itkuinen			syllkenyt verta		
ärtyinen			oksentanut verta		
väsynyt			Muuta:		
hikinen					

(Moir et al. 2000, Elhakim et al. 2003, Keidan et al. 2004)

14. Siirto lepäämööön klo

Lepäämö:

15. Oksennus lepäämössä:

kertaa / mitä:

16. Kotiutus klo

Turun yliopisto
Hoitotieteen laitos

Hyvät lapsen vanhemmat / vanhempi

Olette vastannut kahteen kyselylomakkeeseen tutkimuksessa, jonka aiheena on lapsen leikkaukseen liittyvä paasto ja lapsen toipuminen päiväkirurgisen nielurisaleikkauksen jälkeen. Tämä kolmas kyselylomake (Mittari 2c: punainen) selvittää lapsen toipumista nielurisaleikkauksen jälkeen. Mittari sisältää myös osion, jossa lapselta itseltään kysytään hänen tuntemuksiaan leikkauksen jälkeen. Ensimmäiset mittaukset tapahtuvat vielä sairaalassa ollessanne, joten Teillä on hyvin aikaa oppia henkilökunnan avustuksella lapsen avustaminen mittarin käytössä.

Kiitos!

Turussa / 2005

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Turun yliopisto
Hoitotieteen laitos

Mittari 2c
Nro:

LAPSEN TOIPUMINEN PÄIVÄKIRURGISEN NIELURISALEIKKAUKSEN JÄLKEEN /
vanhemman kyselylomake

Tämän kyselylomakkeen tarkoituksena on selvittää, kuinka lapsenne on toipunut päiväkirurgisesta nielurisaleikkauksesta. Lomakkeessa on lastanne ja lapsenne toipumista koskevia kysymyksiä, joihin toivomme Teidän vastaavan.

LAPSEN YLEISVOINTI:

1. Arvioikaa, ennen kuin kysytte lapselta itseltään, kaikki lapsenne vointia kuvaavat vaihtoehdot kellonaikoina, jotka on merkitty lomakkeeseen (2t, 4, 8t ja 24t lapsen leikkauksesta); käytäkää *kivun, pahoinvoinnin, janon ja nälän kohdalla asteikkoa 0 – 10, jossa esim. 0=ei kipua ja 10=pahin mahdollinen kipu, muissa kohdissa riittää x tai -*.

Leikkauksesta kulunut aika Onko lapsenne:	(2t) klo	(4t) klo	(8t) klo	(24t) klo		(2t) klo	(4t) klo	(8t) klo	(24t) klo
<i>kivulias (0-10)</i>					kuumeinen				
<i>pahoinvoiva (0-10)</i>					levoton				
<i>janoinen (0-10)</i>					rauhallinen				
<i>nälkäinen(0-10)</i>					virkeä				
oksenteleva					nukkunut				
jännittynyt					virtsanut				
itkuinen					sylkenyt verta				
ärtyinen					oksentanut verta				
väsänyt					noussut sängystä				
hikinen					alkanut toimia aktiivisesti (esim. leikkiä, lukea tms.)				
Muuta:									

(Moir et al.2000, Elhakim et al.2003,)

2. Olette saanut lapsenne omaa mielipidettä kysyvän mittarin, joka käsittää jokaiselle mittauskerralle erivärisen lomakkeen, *punainen on 2t, vihreä 4t, keltainen 8t ja sininen 24 t leikkauksesta*. Antakaa lapsenne merkitä mittarin kasvojanalle kohta, jonka hän itse arvioi kuvaavan hänen sen hetkistä tuntemustaan *kivusta, pahoinvoinnista, janosta ja nälästä*.

(Sutters & Miakowski 1997, Kearney et al. 1998, Werle et al. 2003)

Appendix 12 page 3 of 5

LAPSENNE RAVINNON OTTO:

3. LAPSI JOI ENSIMMÄISEN KERRAN : klo _____ mitä? _____
 (Veall et al. 1995, Friesen et al. 2002)
kuinka paljon? _____

Kuinka juominen onnistui? _____

4. LAPSI SÖI ENSIMMÄISEN KERRAN: klo _____ mitä? _____
 (Veall et al. 1995, Friesen et al. 2002)
kuinka paljon? _____

Kuinka syöminen onnistui? _____

5. Merkitkää seuraavaan taulukkoon lapsenne saamat lääkkeet, mitä lapsenne on juonut ja syönyt sekä kuinka lääke on auttanut, juominen ja syöminen onnistunut leikkauksen jälkeen.
 (Brodsky et al. 1993, Hall & Brodsky 1994, Messner & Barbita 1997, Moir et al. 2000)

(jos tila loppuu kesken, voitte jatkaa paperin toiselle puolelle)

klo	Lapsen saama lääke	Määrä	Seuraus (esim. auttoi, oksensi, aih.kipua)

Appendix 12 page 4 of 5			
klo	Lapsen juominen / juoma	Määrä	Seuraus (esim. auttoi, oksensi, aiheutti kipua)
klo	Lapsen syöminen / ruoka	Määrä	Seuraus (esim. auttoi, oksensi, aiheutti kipua)

Appendix 12 page 5 of 5

6. Onko lapsellanne ollut erityisiä toivomuksia / mielipiteitä lääkityksen, juoman ja ruoan suhteen leikkauksen jälkeen? (Brodsky et al. 1993, Hall & Brodsky 1994, Messner & Barbita 1997)

kyllä ei

--	--

Jos kyllä, millaisia? _____

7. Onko lapsenne paaston lopettaminen leikkauksen jälkeen ollut mielestänne vaikeaa?

(Brodsky et al. 1993)

kyllä ei

--	--

Jos kyllä, mitä ongelmia oli lapsenne paaston lopettamisessa? _____

mitkä asiat erityisesti helpottivat lapsenne paaston lopettamista? _____

Kiitos vastauksistanne!

Turun yliopisto
Hoitotieteen laitos
Tiedonantajan suostumus

Appendix 13 page 1 of 2

Hyvät lapsen vanhemmat / vanhempi

Olen jatko-opiskelijana Turun yliopiston lääketieteellisen tiedekunnan hoitotieteen tutkijakoulussa. Tutkimukseni aiheena on lapsen leikkaukseen liittyvä paasto ja lapsen toipuminen päiväkirurgisen nielurisaleikkauksen jälkeen. Tutkimuksen tarkoituksena on selvittää hoitokäytäntöjen vaikuttavuutta päiväkirurgisen lapsipotilaan toipumiseen. Tavoitteena on löytää keino lapsen toipumisen edistämiseksi sekä lisätä lapsen paastoon liittyvää tietoa vanhempien ohjauksen kehittämiseksi. Tutkimuksen suorittamiselle Turun yliopistollisen keskussairaalan korva-, nenä- ja kurkkutautien klinikan päiväkirurgiassa on saatu lupa. Väitöskirjani ohjaajat ovat professori Helena Leino-Kilpi (02-3338404, e-mail: heleiki@utu.fi) Turun yliopiston hoitotieteen laitokselta ja LT, erikoislääkäri Ilpo Kinnunen (02-3131556, e-mail: ilpo.kinnunen@tyks.fi) Turun yliopistollisen keskussairaalan korva-, nenä- ja kurkkutautien klinikalta.

Kohteliaimmin pyydän Teitä osallistumaan tutkimukseen. Osallistuminen tarkoittaa Teille vastaamista kahteen kyselylomakkeeseen ennen lapsen leikkausta ja kahteen lapsen leikkauksen jälkeen. Kaksi ensimmäistä lomaketta koskevat lapsen leikkaukseen liittyvää paastoa ja lapsen vointia ennen leikkausta ja kaksi jälkimmäistä lapsen leikkaukseen liittyvää paastoa ja lapsen vointia leikkauksen jälkeen. Tutkimukseen osallistuvat lapset jaetaan satunnaisesti kahteen ryhmään, joista toisen ryhmän lasten vanhemmat saavat lapsen paastoa koskevan nykyisen käytännön mukaisen ohjauksen ja toisen ryhmän vanhemmat lapsen paastoa koskevan tehostetun ohjauksen. Tutkimuksen tarkoituksena on selvittää näiden käytäntöjen vaikuttavuutta päiväkirurgisen lapsipotilaan toipumiseen nielurisaleikkauksen jälkeen. Eri ryhmiin kuuluminen ei vaikuta lapsen hoitoon tai sen laatuun eikä myöskään vanhempien kohteluun. Molemmat ryhmät saavat yhtä hyvän hoidon.

Tutkimusasetelma pyritään toteuttamaan siten, että lapsen näkökulmasta ylimääräisiä toimenpiteitä ei tehdä; esimerkiksi verinäytteitä ei oteta. Lapsi merkitsee tutkimuksen aikana neljä kertaa ”kasvo” –mittariin sen hetkisen tuntemuksensa kivusta, pahoinvoinnista, nälästä ja janosta, kaksi kerta sairaalassa ollessa ja kaksi kertaa kotona. Mittaustilanteet ohjataan leikinomaisesti lapsen ikä huomioiden. Suostumus tutkimukseen kysytään sekä vanhemmalta että lapselta, jolloin osallistuminen on vapaaehtoista ja voitte keskeyttää osallistumisenne tutkimuksen kaikissa vaiheissa. Tutkimukseen osallistuminen ei myöskään aiheuta teille lisäkustannuksia ja tietosuojastanne huolehditaan.

Appendix 13 page 2 of 2

Tämän kirjeen mukana saatte lapsen leikkausajan lisäksi ensimmäisen kyselylomakkeen (Mittari 1a: keltainen) lapsen leikkaukseen liittyvästä paastosta. Suostuessanne tutkimukseen pyydän Teitä palauttamaan paastoa koskevan lomakkeen täytettynä mukana seuraavalla palautuskuorella. Jos ette ole halukas osallistumaan tutkimukseen, palauttakaa lomake täyttämättömänä joka tapauksessa. Molemmissa tapauksissa palautettuanne lomakkeen, saatte jatko-ohjeet muutaman päivän sisällä.

Tutkimuksen informaatio kerrataan Teille ja lapsellenne suullisesti ennen suostumuksen allekirjoittamista, jolloin Teillä on mahdollisuus kysyä ja keskustella yksityiskohdista. Tämän kirjeen liitteenä on malli allekirjoitettavista kirjallisista suostumuksista ja lapsen ”kasvo” –mittarista. Tutkimukseen osallistuminen on vapaaehtoista ja luottamuksellista eikä tutkimuksesta kieltäytyminen vaikuta lapsenne hoitoon tai kohteluunne sairaalassa. Aineistoa säilytetään ja käsitellään salassapidon kannalta asianmukaisesti. Aineisto ei sisällä tutkimukseen osallistuneiden henkilötietoja.

Lasten leikkaushoitoon liittyvien hoitokäytäntöjen tutkiminen on tärkeää ja siksi toivon, että Teillä on mahdollisuus osallistua tutkimukseen ja siten auttaa lasten päiväkirurgisen hoidon kehittämisessä.

Turussa 28.12.2005

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Turun yliopisto
Hoitotieteen laitos
Tiedonantajan suostumus

Appendix 14 page 1 of 2

Suostumus osallistumisesta tutkimukseen

Olen saanut TtT –opiskelija Seija Klemetin lapsen leikkaukseen liittyvää paastoa ja lapsen toipumista päiväkirurgisen nielurisaleikkauksen jälkeen koskevan tutkimuksen informaation ja ymmärtänyt sen sisällön. Tiedän myös, että osallistuminen on vapaaehtoista ja minulla on oikeus keskeyttää oma ja lapseni osallistuminen tutkimuksen kaikissa vaiheissa eikä keskeyttäminen vaikuta minun tai lapseni kohteluun sairaalassa.

Lapsen nimi ja syntymäaika: _____

Annan suostumukseni antamieni tietojen käyttämiseen aineistona TtT –opiskelija Seija Klemetin Turun yliopiston hoitotieteen laitoksella tekemään väitöskirjatutkimukseen lapsen leikkaukseen liittyvästä paastosta ja lapsen toipumisesta päiväkirurgisen nielurisaleikkauksen jälkeen.

Vanhemman/vanhempien suostumus:

Paikka _____

pvm ___/___/___

nimen selvennys

syntymäaika:

osoite:

nimen selvennys

syntymäaika:

osoite:

Suostumuksen vastaanottaja:

Päiväys ___/___/___ _____

nimen selvennös:

Suostumuslomakkeet jäävät ainoastaan tutkijan käyttöön.

Turun yliopisto
Hoitotieteen laitos
Lapsen suostumus

Appendix 14 page 2 of 2

PVM



HEI, !

OLEN SAIRAAHOITAJANA SAIRAAALASSA, JOHON OLET TULLUT HOIDETTAVAKSI. LASTEN HYVÄ OLO ON MEILLE TÄRKEÄÄ JA HALUAISIMME TIETÄÄ, KUINKA VOIT SAIRAAALASSA OLLESSASI JA SEN JÄLKEEN TOIPUESSASI KOTONA.

TOIVOMME, ETTÄ VASTAISIT NELJÄ KERTAA YHDESSÄ VANHEMPIESI KANSSA VOINTIASI KOSKEVIIN KYSYMYKSIIN. APUNASI ON TÄMÄN PAPERIN TOISELLA PUOLELLA OLEVA "KASVO" – MITTARI, JONKA VIHVALLE VOIT PIIRTÄÄ RASTIN SIIHEN KOHTAAN, JOKA KERTOO SEN, MILTÄ SINUSTA SILLÄ HETKELLÄ TUNTUU.

SINUN EI OLE PAKKO OSALLISTUA TÄHÄN KYSELYYN, JOS ET HALUA JA VOIT KESKEYTTÄÄ SEN MILLOIN TAHANSA. OLISI KUITENKIN KIVA, JOS VOISIT VASTATA NÄIHIN KYSYMYKSIIN TOIPUMISESI AIKANA. JOS VOIT SEN TEHDÄ, KIRJOITA NIMESI TAI PIIRRÄ JOKIN KUVA SEURAAVALLE VIHVALLE.

nimen selvennys
syntymäaika:
osoite:

Seija Klemetti
sairaanhoitaja