



Emotional support for children and adolescents in ambulatory surgical nursing

NRF Clinical Practice Guidelines™

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Introduction

In Finland, over 56,000 children and adolescents underwent ambulatory surgery in 2023. Ambulatory surgery is considered a safe option for children and adolescents, and, from a service delivery perspective, it is a cost-effective solution that enhances efficiency and competitiveness, and improves access to care^{1,2}. For children and adolescents, ambulatory procedures are recommended, as they reduce separation from close family members and familiar daily routines^{2,3}.

Ambulatory surgical procedures may be associated with emotional insecurities in children and adolescents, such as anxiety and fear⁴. In evidence-based ambulatory surgical nursing, it is essential to identify and implement methods that can alleviate procedure-related anxiety experienced by the child or adolescent and their family members. Emotional support helps maintain and enhance the sense of safety, mitigates adverse emotional effects, and simultaneously strengthens the confidential care relationship⁵.

The original guideline “Emotional Support for Preschool-Aged Children in Ambulatory Surgical Nursing” was published in 2009 and first updated in 2016. In this revised version, the target population was expanded to include children and adolescents aged 0–17, recognising that adolescents, too, require emotional support in ambulatory surgical settings. Accordingly, the guideline has been renamed “Emotional Support for Children and Adolescents in Ambulatory Surgical Nursing”.

This NRF Clinical Practice Guideline™ focuses on the selection of emotional support methods for children, adolescents, and their family members in ambulatory surgical nursing. The clinical setting has been defined as the operating theatre environment, while also considering the different phases of ambulatory surgical care.

Purpose, aim, target group, and key concepts of the guideline

Purpose and aim of the guideline

The purpose of this NRF Clinical Practice Guideline™ is to present evidence derived from systematically collected and critically appraised research, along with corresponding recommendations that guide the actions of social and healthcare professionals in selecting emotional support methods during the various phases of ambulatory surgical care for children and adolescents.

The objective of this guideline is 1) to enhance the competence of professionals in providing emotional support to children, adolescents, and their family members, thereby 2) reducing procedure-related anxiety and fear, thus fostering treatment adherence and a strengthened sense of safety.

Target groups

This NRF Clinical Practice Guideline™ is intended for all social and healthcare professionals involved in the various phases of ambulatory surgical care for children and adolescents, across both public and private service providers. In addition to guiding clinical practice, the guideline can be utilised in nursing leadership, workforce planning, and competence assurance. It also serves as a resource for educational purposes, supporting curriculum development in undergraduate, postgraduate, and continuing education programmes related to paediatric, surgical, perioperative, and intensive care nursing.

Key concepts

Ambulatory Surgery

An ambulatory surgical procedure is defined as a planned surgery requiring anaesthesia beyond local anaesthesia, during which the child or adolescent remains in the surgical unit for no more than 12 hours⁶. In other words, the patient receiving surgical care is admitted and discharged from the unit on the same day^{7,8}. The suitability of a child or adolescent for ambulatory surgery should be assessed based on their functional capacity, and any underlying medical conditions should not prevent the post-surgery discharge^{7,9}.

The care pathway for paediatric and adolescent ambulatory surgery is a broad concept that begins with the identification of the health issue requiring surgical procedure and concludes with discharge from the procedure, including any postoperative follow-up, such as phone calls, visits, or other forms of contact. At the start of the pathway, the need for surgical treatment is assessed, and a referral for further evaluation and planning within the surgical unit is made. The actual

ambulatory surgical procedure can be divided into three phases: preoperative, intraoperative, and postoperative. In the preoperative phase, the child or adolescent and their family arrive at the surgical unit, and preparations for the procedure begin (e.g. ensuring preoperative instructions have been followed and administering premedication if necessary). The intraoperative phase involves the execution of the procedure itself. The postoperative phase begins once the procedure is completed, and it includes monitoring recovery, ending with the child's or adolescent's discharge from the surgical unit. This care pathway transcends organisational and professional boundaries, emphasising the smooth delivery of care and guidance for the child or adolescent and their family throughout the process. It also highlights the need for support at multiple stages, thereby increasing the knowledge of all involved parties regarding the overall care experience of children and adolescents undergoing ambulatory surgery.^{10,11}

In ambulatory surgery, both the preparation and postoperative care are primarily carried out by the child's or adolescent's family members, with the home environment serving as the setting for care instead of the hospital. Family members may also choose to participate in the child's or adolescent's care within the surgical unit¹², offering support in unfamiliar situations. This involvement not only helps the child or adolescent feel more secure, but it also alleviates the family's own anxiety¹³ and contributes to overall satisfaction with the surgical experience^{3,14}. The majority of family members of children and adolescents undergoing ambulatory surgery report feeling adequately prepared for the procedure, although postoperative care at home may increase their concerns¹⁵.

Child

Infancy and toddler age

Infancy encompasses the first year of life. A newborn is entirely dependent on their caregivers and expresses emotions through crying. Crying serves as a means of communication, signalling needs including hunger, discomfort, or the desire to be held. Social development begins soon after birth: infants observe their parents and their facial expressions, and they can distinguish familiar faces from unfamiliar ones. Around the age of 6 to 9 months, the child begins to understand that they are separate beings from their parents, which may lead to stranger anxiety and separation distress. These reactions may manifest as fear of unfamiliar people and crying when parents leave their field of vision.¹⁶ Children under the age of one do not yet comprehend their separation from their parents¹⁷, making secure adult relationships particularly important when preparing for medical procedures.

A toddler (aged 1 to 3 years) is eager to move and explore their surroundings. They begin to trust in their own abilities, and their motor skills develop rapidly. As their language skills progress, the child becomes increasingly capable of understanding their environment and expressing their needs independently. With growing autonomy, toddlers can act on their own for short periods, yet they continue to require strong emotional support — particularly in unfamiliar or stressful situations¹⁶ such as during hospital procedures.

Preschool age

Preschool-aged children (aged 3 to 6 years) are typically characterised by egocentrism, a sense of omnipotence, and concrete thinking. They often perceive events as being caused by themselves and interpret them through external influences. Their imagination is rich and vivid, although logical reasoning is still developing.¹⁸ During this stage, cognitive skills, fine motor abilities, and language development progress rapidly, which is reflected in detailed drawings and inquisitive questioning. Preschoolers enjoy rhyming, nursery rhymes, and listening to stories.¹⁶

For preschool-aged children, the relationship with their family is of central importance, and separation from parents is often experienced as distressing^{18,19,20}. Emotional support prior to an ambulatory surgical procedure is, therefore, essential. Younger preschoolers may feel guilt or shame related to their illness, which may cause fear that the procedure is a punishment for something they have done or thought. Therefore, it is crucial to explain the reasons for the procedure to the child in a clear and empathetic manner. At the same time, preschoolers also take pride in their accomplishments.¹⁶ Older children in this age group have a more developed understanding of cause-and-effect relationships than younger ones²¹. As preschool-aged children vary significantly in their skills and abilities, close collaboration with the child and their family is vital to ensure the child feels as safe and secure as possible.

Primary school age

Children in primary school (aged 6 to 12 years) are increasingly capable of processing information and following instructions independently. Their cognitive and language development enables them to understand cause-and-effect relationships and anticipate events.¹⁸ They are able to take care of their belongings, follow guidance, and learn new things quickly. At this stage, children also begin to negotiate and consider the needs of others.¹⁶ When preparing for an ambulatory surgical procedure, school-aged children benefit from receiving realistic and concrete information about the procedure and its progression. It is important for them to feel a sense of control over the situation, and emotional support plays a key role in reducing uncertainty and fear. If the child struggles to understand the situation or feels they have failed in some way, they may experience feelings of inferiority. Therefore, adults supporting the child should actively reinforce their self-esteem.¹⁷

Adolescent

Pre-adolescence

Pre-adolescence marks the transitional phase from childhood to puberty, typically beginning around the ages of 9 to 12. During this period, physical and psychological changes gradually prepare the young person for adolescence. Although they may still appear childlike, their behaviour may begin to shift — becoming more defiant, clumsy, or distracted. Emotional responses can be more volatile, and they may react more intensely to various situations. In navigating these changes, the young person requires consistent guidance and support from their parents, even as they strive to increase their independence.^{18,16}

In the context of ambulatory surgery, pre-adolescents require substantial concrete support, as they still do not fully comprehend cause-and-effect relationships or manage complex situations independently. However, they are capable of drawing on previously acquired knowledge, making it important to assess and build upon their existing understanding.¹⁸

Early adolescence

Early adolescence (aged 12 to 14) brings significant physical and psychological changes. As puberty begins, the body undergoes transformation, emotions become more intense, and the adolescent starts to detach from their parents. This developmental phase may manifest as conflict, withdrawal, or defiance.¹⁶

In ambulatory surgical care, early adolescents benefit from clear, concrete, and calm communication. Although they strive for independence, they may still require parental support, especially in anxiety-inducing situations, such as hospitalisation. It is important to provide the adolescent with opportunities to participate in their own care, as this can strengthen their sense of control over the situation.¹⁸

Middle adolescence

Middle adolescence (aged 15 to 17) is characterised by the stabilisation of the most intense physical and psychological changes experienced during early adolescence. Emotional regulation and cognitive development progress, and abstract thinking reaches adult levels. During this phase, adolescents are more capable of comprehending cause-and-effect relationships and anticipating future events. Peer relationships become increasingly important, and acceptance by one's social group is highly valued.^{18,16}

Middle adolescents are capable of taking greater responsibility for their own care and understanding the reasons and implications of medical treatment. When preparing for an ambulatory surgical procedure, they require openness and opportunities to be involved in decision-making⁸. Despite appearing independent, they may still experience uncertainty and require emotional support, particularly in unfamiliar or stressful situations. Support from family and healthcare professionals is essential for helping them manage potential fears and anxieties.

A close person

In this guideline, a close person refers to an adult who plays a significant role in the life of the child or adolescent and is actively involved in preparing for the procedure at home, present during the ambulatory surgical process, and engaged in postoperative care at home following the procedure. This person may be, for example, a parent, guardian, caregiver, or relative.

Emotional safety and support

Emotional safety refers to a child's or adolescent's ability to experience trust and an internal sense of security within their developmental environment. This sense of safety may arise, for example, within the family, at school, in friendships, or in patient care relationships. Central to emotional safety is the trust placed in parents, healthcare professionals, or other adults who support the child or adolescent. Furthermore, the individual's own experience of being accepted, understood, and protected is an essential part of emotional safety.²² Emotional safety is fostered by environments such as a secure home where parents provide love and support, or a school with reliable teachers and peers.

Emotional support refers to nursing interventions that maintain and enhance the sense of safety experienced by the child or adolescent and their close persons, while minimising the impact of anxiety-inducing factors. Methods of emotional support include age-appropriate interaction and engagement, such as play, involvement, presence, listening, verbal encouragement, and positive feedback. A lack of support may lead to feelings of loneliness and insecurity.²³ Among children or adolescents and their close persons, emotional support promotes coping²⁴ and treatment adherence⁵, reduces anxiety and fears, and increases trust in healthcare staff²⁴. In addition, emotional support influences the child's or adolescent's emotional and behavioural responses, as well as their future care experiences⁵. Recognising and alleviating anxiety is, therefore, essential, as experiences related to procedures may affect future treatment encounters¹⁸. Fear and anxiety experienced by close adults or siblings may also be reflected in the child or adolescent^{24,25}. Emotional support is an effective and impactful nursing intervention to ease the anxiety of the child or adolescent and their close persons^{24,26}.

The interaction skills of nursing professionals play a key role in enhancing the sense of safety experienced by the child or adolescent and their close persons. Interaction should be unhurried, with individualised encounters and appropriate communication matching the child's or adolescent's developmental level. For example, preschool-aged children interpret words literally and process experiences through play. Interaction may include the use of images, picture cards, and videos, as well as familiar everyday language. A sense of control over one's own care can be supported by involving the child or adolescent through providing information and offering choices in matters where they can make decisions themselves. Using humour during guidance situations helps the child or adolescent to process difficult topics and enables them to ask questions that might otherwise feel embarrassing.²⁷

When a child or adolescent is preparing for an ambulatory surgical procedure, emotional support provided by close persons has been identified to have a greater impact on the child or adolescent than emotional support offered by nursing professionals. Nevertheless, the nursing professional plays an important role as a guide for the child or adolescent and their close persons, and therefore, the professional must be able to interpret the child's or adolescent's emotional states and respond to their emotional support needs. In addition, it is essential that the nursing professional allows space for emotional support between the child or adolescent and their close persons.^{28,29} Children experience an increased sense of safety when parents are

present during different phases of care³⁰. Parents require individualised information about preparations prior to the procedure as well as regarding potential ways of participating in their child's care and supporting them during the procedure^{23,31}. Guidance for the child or adolescent and their close persons is a process linked to their prior knowledge and experiences. Therefore, guidance must always be family-centred and sufficiently comprehensive to meet the needs of the child or adolescent and their close persons^{27,32,33}. This objective necessitates providing guidance and maintaining a sense of togetherness throughout the different stages of care³⁴.

An ambulatory surgical procedure may cause a stress response in a child or adolescent, with symptoms manifesting individually³⁵. Anxiety is characterised by a concern about upcoming events, whereas fear is directed at an immediately perceived stimulus³⁶. Anxiety is a risk factor for perioperative complications, as it may lower the pain threshold, prolong recovery, and increase psychological and behavioural changes³⁷. Preoperative anxiety is a common phenomenon among children and adolescents¹⁸. Severe anxiety has been estimated to occur in over 60% of children prior to anaesthesia, with children under the age of five being at the greatest risk. Contributing factors to anxiety include the child's age, previous hospital experiences, social maladjustment, inadequate coping mechanisms, absence of premedication, and anxiety experienced by close persons. The sources of fear in children can be categorised according to developmental stages, such as those of early childhood.²⁷ The unfamiliar hospital environment, painful and invasive examinations and procedures, uncertainty about the course of the procedure, and separation from parents are among the most significant causes of preoperative anxiety in children³⁸. Children and adolescents with very high levels of anxiety prior to surgery are 3.5 times more likely to exhibit negative behavioural patterns after the procedure compared to those with lower levels of anxiety³⁹.

Pain is a key factor that increases anxiety, and it is essential to confirm adequate pain management. Behavioural changes and difficulties in emotional regulation related to pain are particularly pronounced in children and adolescents. Pain should be assessed regularly, and both adequate pharmacological pain relief and non-pharmacological methods — such as calming, rest, stroking, massage, and distraction — should be offered to children and adolescents⁴⁰. Effective pain management enhances the emotional well-being of the child or adolescent.

Preoperative guidance methods that reduce anxiety in children and adolescents can be categorised into three main groups: preparatory methods, distraction methods, and family-centred methods. Preparatory methods direct the child's or adolescent's attention toward the upcoming procedure, of which they may not have a clear prior understanding. Distraction methods, as the name suggests, shift the child's or adolescent's focus away from the procedure. Through family-centred methods, the presence and involvement of parents provide support to the child or adolescent during the preoperative guidance process.⁴¹

Digital methods

The Ministry of Social Affairs and Health defines digitalisation as the renewal of operational practices and the digitisation of processes and services⁴². According to the World Health Organization (WHO), the concept of eHealth refers to the use of information and communication technology to support health⁴³. In its classification of digital interventions, WHO (2018)⁴⁴ divides interventions into four main groups: those related to the healthcare client, professional, service system, and information system. In this NRF Clinical Practice Guideline, digital methods refer to services and processes provided in electronic form, aimed at emotionally supporting the child or adolescent and their close persons throughout the various stages of ambulatory surgical care. In digital interventions, it is essential to ensure that the content is appropriate and suitable for the child's or adolescent's developmental level.

The COVID-19 pandemic increased the need for and use of various digital services⁴⁵. Digitalisation transforms both the information transfer methods and the roles of interaction. At best, the relationship between the healthcare client and professional becomes more equal, and care is more closely integrated into the client's everyday life⁴⁶. Digital interventions should be theory-based, evidence-informed, interactive, and participatory in nature^{42,43,44,47}

Recommendations

Methods of emotional support reduce anxiety in children and adolescents during ambulatory surgical procedures without the adverse effects associated with pharmacological treatment. The recommendation statements, based on 29 studies, are organised according to the perioperative care process: 1) methods used before the procedure either at home or during the outpatient visit, 2) methods used in hospital before the procedure, 3) methods used during the procedure, and 4) methods used after the procedure. The evidence summaries that form the basis for the recommendation statements are available on the website of the Nursing Research Foundation.

1. Before the day of the procedure – at home or during a clinic visit

Enable parents of the child scheduled for a procedure to receive information both in written and verbal form about the ambulatory surgical procedure, because

- **parents who receive both written and verbal guidance during the outpatient visit the day before the procedure appear to experience less anxiety compared to those who receive conventional verbal guidance⁴⁸. (B)**
 - Written and verbal guidance should be provided on the day before the child's procedure. Parents should be given the opportunity to ask clarifying questions during the guidance.⁴⁸
 - Written instructions provide parents with concrete information about preparing the child for the procedure, the events of the procedure day, and discharge⁴⁸.
 - Written instructions should be illustrative and provide practical information for parents. Written guidance materials allow parents to review the information at home.⁴⁸
 - Verbal guidance enables interactive and individualised encounters with parents, allowing assessment of their guidance needs based on prior knowledge and experiences, and responding to their emotional support needs⁴⁸.

In addition to verbal guidance, offer a preschool- or primary school-aged child an at-home opportunity to watch a video on the ambulatory surgical procedure process, because

- **watching a video about anaesthesia appears to reduce anxiety related to the ambulatory surgical procedure in primary school-aged children⁴⁹. (B)**
 - In the study, children who watched the video also had lower heart rate and blood pressure⁴⁹.

- During the study, the video played on a smartphone before the procedure during the outpatient visit. The approximately five-minute video depicted the anaesthesia process from the child's perspective, from the waiting room to the operating theatre and then to the recovery room.⁴⁸
- Videos may also depict the stages of anaesthesia process and, for example, the moment when the child arrives in the procedure room with a guardian and is placed under anaesthesia⁴⁹.

➤ **watching a video about the ambulatory surgery environment⁵⁰ or the procedure process and hospital stay⁵¹ may reduce the child's anxiety before the ambulatory surgical procedure^{50,51}. (C)**

- In the study, the video was viewed through VR glasses on the parent's phone screen. The video featured 3D-animated characters preparing for the procedure and the course of the procedure day.⁵⁰
- The video may last a few minutes and should ideally be watched at home at least 24 hours before arriving at the hospital. It should be possible to watch the video multiple times, both in advance at home and again while waiting for the procedure at the hospital.⁵⁰

Inform the preschool- or primary school-aged child waiting for the procedure about the possibility of using a guided, game-based mobile application at home, because

➤ **playing an educational mobile game one week before the procedure may reduce the child's anxiety during gameplay, but it does not affect anxiety on the day of or after the procedure⁵². (C)**

- In the evidence-based game, the child followed the course of the procedure day through a small dog character. The game explained the procedure day to the child in an age-appropriate way. The game taught the child various coping strategies to help manage nervousness, anxiety or fear, and to express their emotions. Parents were provided with information about the procedure, coping strategies, and how they could help the child manage anxiety and pain. A link to the game and online educational material was sent to the child's parents by email one week before the procedure.⁵²
- Games that support verbal guidance and help familiarise the child with the hospital and procedure preparations can be available through, for example, the Children's Hospital section (Lastentalo) of Health Village (Terveyskylä). When using readily available games and other materials, confirming the reliability of the content and its suitability for children and adolescents before use is of utmost importance.

Inform parents about the possibility of using a mobile application, because

- **a guided mobile application used by parents for 3–4 weeks before the procedure appears to reduce parents' post-procedure stress⁵³. (B)**
 - In the study, the mobile application was activated 3–4 weeks before the child's ambulatory surgical procedure. Parents were able to use the mobile application before the procedure and for one week after the procedure.⁵³

Enable parents to receive information about the care process digitally before the child's ambulatory surgical procedure, because

- **receiving information about the ambulatory surgery care process digitally (web-based) reduces anxiety in parents of children undergoing ambulatory surgery⁵⁴. (A)**
 - The digital care pathway for paediatric day surgery patients can be explored, for example, in Health Village.

Enable preschool-aged children and parents to practise with an anaesthesia mask at home before the procedure, because

- **anaesthesia mask practice at home with the child may reduce parents' post-procedure anxiety⁵⁵. (C)**
 - Children participating in the study were aged 4–7 years. Anaesthesia masks, instructions, and tracking forms for the exercises were sent by post one week before the procedure. The use of the anaesthesia mask was instructed to be practised at least three times before the procedure.⁵⁵

2. Before the ambulatory surgical procedure in hospital

Use videos to support verbal guidance for preschool- or primary school-aged children on the procedure day, if possible, because

➤ **watching a video about the ambulatory surgical procedure process and hospital stay appears to reduce the child's anxiety before the ambulatory surgical procedure^{50,56,57}. (B)**

- In the study, no difference based on the timing of video viewing (one week before vs. on the procedure day) was observed in children's or parents' anxiety levels or children's cooperation during induction⁵⁸. However, the timing of video played an important role in allowing the child enough time to process the content mentally⁵⁶.
- The instructional video should not be too long⁵⁶.
- Short videos can be used multiple times during the preparation phase and while waiting for the procedure⁵⁰.
- If VR glasses are used for video viewing, it is important to ensure that the glasses are suitable for the child's size and age and sit comfortably on the child's head⁵⁶.
- Shifting the child's attention using a video with enjoyable content and chosen by the child reduces anxiety when moving from the waiting area to induction^{59,60}.
- Preschool-aged children experience stronger anxiety than older children. Children undergoing their first procedure experience more anxiety than those with previous procedure experience.⁵¹
- Watching an instructional video together with the child has no effect on the anxiety of close persons on the procedure day^{58,50,56}. However, previous studies have shown that an instructional video before the procedure reduces parental anxiety immediately after viewing and induction⁶¹.
- There are Finnish-language videos available for familiarisation with the hospital and procedure preparations, which can be found, for example, in the Children's Hospital section of Health Village, and on the YouTube channels and websites of HUS and wellbeing services counties (e.g. koeuusilastensairaala.fi). When using readily available videos and other materials, confirming the reliability of the content and its suitability for children and adolescents before use is of utmost importance.

➤ **watching a short film or animated video depicting the ambulatory surgical procedure day appears to reduce fear in primary school-aged children^{62,63}. (B)**

- In the study, the short film (4–5 minutes) presented surgical preparations, the procedure environment, and recovery after the procedure in a developmentally appropriate way, featuring members of the surgical team. The animated video covered the same topics using animations and a narrator.⁶²

- Children who watched the short film or animated video before the procedure rated their own fear lower than those who received only verbal guidance⁶².
- Parents and nurses also assessed the fear of children who watched the short film or animated video as lower compared to children who received only verbal guidance⁶².
- It is important to offer the opportunity to watch the video in a way that considers the child's developmental level and sparks their interest, for example, via a mobile application⁶².
- Children who experience anxiety related to the procedure are more likely to experience fear as well⁶³.
- When compared to their peers, children who experience strong anxiety are more likely to have difficulties falling asleep, trouble going to bed in the evening, tearfulness or restlessness when left alone, fear of the dark, loss of appetite, and to portray disobedience at home after the procedure⁶².

In addition to verbal guidance, offer a preschool- or primary school-aged child waiting for the procedure the opportunity to use a game-based mobile application, because

- **playing a mobile game during hospital admission appears to reduce the child's preoperative anxiety^{64,65}. (B)**
 - VR glasses were used in the study, and the child could choose either a toy hospital or an operating room environment. In the toy hospital, the child helped the doctor complete various tasks. The game featured five different characters, each with their own task to complete. Completing one task took about five minutes, and the total duration of the game was 25–30 minutes. If the child chose the operating room environment, they watched animated videos of the operating room using VR glasses.⁶⁵
 - Finnish-language games for familiarising with the hospital and procedure preparations are available, for example, in the Children's Hospital section of Health Village. When using readily available games and other materials, confirming the reliability of the content and its suitability for children and adolescents before using them for guidance purposes is of utmost importance.
- **emotional support and relaxation exercises provided through virtual reality characters may reduce the child's anxiety⁶⁶. (C)**

Offer the child, if possible, functional preparation methods in hospital before the ambulatory surgical procedure, because

- **role play, books, and pictures of the operating room combined with breathing, relaxation, and visualisation exercises before cannulation appear to reduce anxiety in children (aged 3–10) before an ambulatory surgical procedure⁶⁷. (B)**
 - In the study, children had the opportunity to play with dolls and doctor toys for at least 15 minutes. In addition, they were offered books and pictures of the operating room to view. Breathing, relaxation and visualisation exercises were guided by a healthcare professional. Parents were involved in the preparation and were given the opportunity to discuss the procedure process and to support the child with staff.⁶⁷
 - In an ambulatory surgery for children and adolescents with special support needs, foot reflexology may be used before and after the procedure, if possible, as it may reduce the child's anxiety before and after the procedure, and during discharge⁶⁸.
 - Instructions and practical tips on how to familiarise a child with medical procedures through play can be found, for example, in the Children's Hospital section (Lastentalo) of Health Village (Terveyskylä). When using readily available materials, confirming the reliability of the content and its suitability for children and adolescents before use is of utmost importance.
- **receiving information about anaesthesia through a functional book may alleviate fear related to anaesthesia induction in children (aged 5–12)⁶⁹. (C)**
 - In the study, children were given a functional book about anaesthesia induction to read. The book was read for 5–10 minutes during the 90 minutes preceding the procedure. It included practical elements related to anaesthesia induction. Children had the opportunity to familiarise themselves with the induction phase through various activities, such as flaps and scratch-and-sniff scented stickers.⁶⁹
- **children (aged 5–12) who received information about anaesthesia through a functional book are estimated to experience similar levels of anxiety as those who received conventional guidance⁶⁹. (C)**
- **anaesthesia mask practice on the procedure day may reduce anxiety in pre-school-aged children⁵⁵. (C)**
- **anaesthesia mask practice combined with video game play before the procedure may reduce anxiety in children (aged 5–11) after the mask practice, during transfer to the procedure, and during induction⁷⁰. (C)**

- **children (aged 2–10) who are transferred to the procedure in an electric toy car may experience similar levels of anxiety as those transferred in a stroller⁷¹. (D)**

Before the ambulatory surgical procedure, offer the child the opportunity to listen to a story or play with colouring books, if possible, because

- **listening to a story and doing colouring tasks may reduce the child's anxiety as effectively as premedication⁷². (C)**
 - In the study, parents told a story to the child (aged 3–8) about a child undergoing a procedure approximately one hour before the procedure. The child received a colouring book containing pictures of instruments and professionals participating in ambulatory surgery. The child was encouraged to ask questions.⁷²
 - Tips on children's books related to doctor visits can be found, for example, in the Children's Hospital section (Lastentalo) of Health Village (Terveyskylä). When using readily available materials, confirming the reliability of the content and its suitability for children and adolescents before use is of utmost importance.

Enable the child to prepare for the procedure through music, because

- **listening to music prior to the procedure appears to reduce anxiety in school-aged children both before and after the procedure⁶⁸. (B)**
 - In the study, children were given the opportunity to listen to music of their choice for ten minutes before and after the procedure⁶⁸.
- **listening to music, or a combination of listening, playing instruments, and singing, may reduce a child's anxiety prior to the procedure⁷³. (C)**
 - In the study, children (aged 0–5 years) could participate in a 15-minute music session, during which they either relaxed while listening to music or actively engaged by playing instruments and singing under the guidance of a music therapist⁷³.
 - In another study, the music therapist sang and played the guitar while encouraging children (aged 2–9 years), their families, and staff to play small instruments, sing, and take part in musical games⁷⁴.
 - The presence of parents during music sessions led by a music therapist may reduce parental anxiety^{73,74,75}.

Enable the presence of a clown during a child's or adolescent's preparation for a procedure, because

➤ **guidance provided by a healthcare professional dressed as a clown prior to the procedure may reduce post-procedural anxiety in preschool-aged children⁷⁵. (C)**

- In the study, a nurse dressed as a clown guided the child and their close person in the hospital for one hour before the procedure. The guidance included a PowerPoint presentation covering the following sections: before the procedure, entering the procedure room, after the procedure, and at home following the procedure. Each section explained what would happen and what the child was encouraged to do. The guidance session took less than eight minutes. Additionally, the close person received written instructions.⁷⁵
- Some children may find clowns uncomfortable and may not feel safe in their presence⁷⁵.
- Guidance provided by the clown may also reduce anxiety in the close person, making their presence during the session advisable⁷⁵.

➤ **the presence of hospital clowns during procedural preparation may reduce anxiety in children and adolescents, although further research is needed⁷⁶. (D)**

- The use of hospital clowns to support children, adolescents, and their close persons while waiting for a procedure and during the insertion of a peripheral intravenous cannula improves their overall care experience⁷⁶.
- The role of hospital clowns is to support the child and family by diverting attention away from the procedure through means such as play, music, magic, pantomime, and soap bubbles⁷⁶.
- Clowns provide distraction before and during painful procedures and introduce positive moments into the day that can be remembered afterwards⁷⁶.
- Tips on how to successfully involve hospital clowns using prepared materials can be found, for example, in the Children's Hospital section (Lastentalo) of the Health Village (Terveyskylä) website. When using readily available materials, confirming their reliability and suitability for children and adolescents before applying them for guidance purposes is of utmost importance.

3. During an ambulatory surgical procedure

Consider offering parents the opportunity to watch a relaxation or informational video during their child's ambulatory surgical procedure, because

- **a relaxation video viewed through VR glasses during the child's procedure may reduce parental anxiety while they wait⁷⁷. (C)**
 - In the study, the video lasted 15 minutes and was viewed on a mobile phone using VR glasses⁷⁷.
- **information and guidance provided via video regarding the procedure is likely to be as effective as written guidance material⁷⁸. (C)**
 - In the study, parents watched the video during their child's procedure. The video included a 13-minute information package covering the procedure itself, the course of the procedure day, and the procedural environment (including the recovery room), as well as postoperative care (wound care, urination, nutrition, and pain management). The video also provided contact details for the procedure unit and information about the follow-up visit after the procedure.⁷⁸

4. After an ambulatory surgical procedure

Enable the child to listen to music after an ambulatory surgical procedure, because

- **listening to music following the procedure appears to reduce anxiety in school-aged children⁶⁸. (B)**
 - In the study, children were given the opportunity to listen to music of their choice for ten minutes before and after the procedure⁶⁸.

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