

Pediatric anesthesia



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Fasting guidelines

On the day of surgery, solid food (incl. chewing gum, candy, etc.) and dairy or other non-clear liquids may be consumed **only up to 6 hours prior to surgery**. Clear, sweetened fluids such as tea, syrup, and water may be consumed **up to 1 hour prior to the scheduled intervention. Nothing may be consumed thereafter**. If you do not observe these guidelines, you run the risk that your child vomits and that the vomit enters your child's lungs. This may lead to life-threatening pneumonia.

These guidelines must be strictly observed.



Dear Parents, dear patient

A surgical intervention has been scheduled for you or your child. In order to perform the surgery successfully and without pain, anesthesia will be administered. As a first step, we would like to provide you with information on this subject now. This will allow you to better understand what you or your child can expect and give you peace of mind.

Within the context of a telephone interview or anesthesia consultation, your anesthesiologist will discuss with you which type of anesthesia is best for your intervention.

Types of anesthesia

There are basically two types of anesthesia:

- _ **General anesthesia**
- _ **Regional anesthesia**

In this brochure, we describe **general anesthesia** and **caudal anesthesia used in urological interventions (regional anesthesia)**.



General Anesthesia

General anesthesia is a state similar to deep sleep.

For children, an anesthesia gas is administered via a facemask until sleep is attained. Only then is venous access established so that anesthesia can be continued with medication that is administered via infusion. Parents are encouraged to stay with their child until he or she has fallen asleep.

During the falling asleep phase, children often exhibit movements of which they are not aware (involuntary movements).

For teens and adults, venous access is generally established while awake. After injection of the narcotic/anesthetic (medication that induces artificial unconsciousness), sleep is attained in approx. 30 seconds.

During general anesthesia, breathing must generally be supported. In interventions of short duration, this may be achieved via a facemask. For procedures of longer duration, or if required by the surgery itself, patient ventilation is ensured via placement of a laryngeal mask, or insertion of a thin tube through the mouth - or through the nose as is often the case in dental procedures – into the trachea (intubation). Air supplemented with oxygen can thus be consistently and adequately administered via facemask, laryngeal mask, or tube.

At the end of the intervention, administration of the narcotic/anesthetic is stopped, and the child awakes within a few minutes. Thereafter, the child is monitored until he or she feels well enough to be discharged home. The child must be accompanied by an adult on the way home.



_ Safety of general anesthesia

Modern anesthesia is very safe and poses few risks. All vital functions such as breathing, circulation, and cardiac function are continually monitored by the anesthesia team. Significant incidents or complications are therefore very rare in all modern procedures. Risks associated with general anesthesia depend primarily on the age, lifestyle, and prior diseases of the patient as well as the type of surgery and duration of the intervention.



_ General side effects and complications

Occasionally, the following complications may arise:

- _ Hematoma (bruise) at the insertion site of the canula/venous access for infusion**
- _ Difficulty swallowing or mild hoarseness due to intubation**
- _ Irritation/injury of mucosa with nose bleeding or bleeding in the throat due to intubation through the nose (nasal intubation)**
- _ Sensation of cold, chills**

In rare occurrences, the following complications may arise:

- _ Nausea and vomiting: although nausea and vomiting are rare with the anesthetic agents used today, there is a small risk of these symptoms as blood may enter the stomach during an intervention in the nasopharyngeal area. This may potentially lead to vomiting. Generally, the patient feels well after vomiting once and only in rare cases does the patient vomit again.**



In rare occurrences, the following complications may arise:

- Vomiting during anesthesia induction: during the course of this procedure, there is a risk of stomach acid entering the lungs and development of pneumonia. **This complication can occur if the fasting guidelines (please see page 3) are not strictly observed and, consequently, the stomach was not empty.** It is important to note that ingestion of clear fluids (tea with sugar, syrup, water) up to 1 hour prior to the intervention promotes optimal stomach emptying and supports fluid balance.
- Hypersensitivity or allergic reactions to narcotics, anesthetics, local anesthetics, other medications used, or latex articles: these may occur in the form of pruritus (itchiness), rash, swelling of the lips or face, drop in blood pressure, slowing heart rate, or possibly an asthma attack and are immediately treated by the anesthesia team.
- Injury to skin or nerves: pressure or pulling during positioning of the patient may sometimes negatively affect nerve function or – in very rare cases – result in a permanent deficit.
- Injury to pharyngeal tonsils: this is possible during advancement of the tube in nasal intubation, especially in children.



_ Disease history and previous illnesses

The patient history provides important information on specific serious illnesses, certain genetic diseases, and other complicating factors. This information allows the anesthesia team to modify anesthesia processes, medications, and the entire infrastructure accordingly. For an elective intervention, surgery may be postponed or cancelled altogether. This also applies to non-compliance with fasting guidelines or other instructions from your physician.

Specific, but rare side effects and complications associated with general anesthesia:

- Damage to teeth during intubation – especially of upper incisors – and to dental work are very rare.
- Negative impact on breathing and ventilation during anesthesia may occur due to prior illness and depends on the severity of the prior illness. This is particularly important for children, as their airways are highly sensitive to prior illnesses (cold, cough, bronchitis) and may narrow directly upon manipulations (e.g. anesthesia induction, intubation, other external irritants). In cases of acute disease or illnesses that have only recently run their course, surgery may be postponed. In the event of chronic respiratory disease, a report from the family physician for precise assessment of patient's capacity to undergo anesthesia is very important.
- Feared complications such as cardiac, circulatory, or pulmonary failure with potential injury to vital organs, especially the brain, or even death are very rare today. Generally, potential complications are recognized early enough so they can be avoided.



Regional Anesthesia

Regional anesthesia is different from local anesthesia. In local anesthesia (LA), pain suppression is achieved through injection of a medication (local anesthetic) into the immediate area of the surgical site and is generally administered by the surgeon. In regional anesthesia, pain suppression is achieved through injection of an anesthetic near a nerve or nerve plexus. In this manner, pain sensation is turned off only in the segment of the body that will be surgically treated.



Regional anesthesia for children particularly includes:

Caudal anesthesia for urological interventions

Application:

for children, caudal anesthesia is the most-commonly-used regional anesthesia process worldwide for interventions below the umbilicus (urological interventions). In this process, a local anesthetic is injected into the spinal canal at the level of the sacrum following induction of anesthesia. This provides several hours of pain reduction.

Risks:

With all regional anesthesia procedures, there is a risk of inadequate effectiveness, for example, due to incomplete distribution of the injected anesthetic. Occasionally, a hematoma (bruise) may develop in the area of the injection site, especially if the patient suffers from a coagulation disorder. Infections, injuries, and nerve damage are very rare. Likewise, cardiopulmonary complications and cramping episodes are also extremely rare occurrences; continuous monitoring of the patient by the anesthesia team ensures a quick response to these situations.



Additional Information



_ Registration form

Please fill out the registration form for anesthesia – provided to you in electronic or paper form – and give detailed answers to the health questions. For prior illnesses and/or prior major surgeries, we require a written report from your pediatrician. An uncertain health status must be cleared prior to surgery. This is primarily for the safety of your child.



_ Consultation

If you would like to speak with one of our anesthesiologists in a consultation prior to an intervention, please contact us:

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|---|--|
| » Limmatklinik Zürich | Tel: 044 448 30 30 |
| » NE Switzerland and Zürich-Winterthur | Tel: 052 320 01 20 |
| » Central and NW Switzerland | Tel: 041 379 70 30 |
| » Tessin | Tel: 091 980 44 04 |
| » Email | info-winterthur@narkose.ch |

Should an anesthesia consultation become necessary based on your answers on the health questionnaire or files submitted by your family physician/pediatrician, we will take the liberty to invite you or you and your child for an appointment with us.



_ Telephone interview

The anesthesiologist will discuss your planned anesthesia with you prior to the intervention and will be happy to address any question you may have. Please take notes. The physician will contact you within two days prior to the intervention (if the surgery is scheduled after a holiday or on a Monday, within two days prior to the holiday or weekend).

To make contacting you easier, please note your availability on the registration form (best time to reach you, telephone/mobile phone number, etc.).



_ Before the day of surgery

Provide an age-appropriate explanation of the planned intervention to your child. Inform your child that he or she may have a bandage following surgery; for dental procedures, explain that his or her mouth will feel differently after tooth extraction. Please bring a favorite toy, pacifier, or blanket for your child.

So that you can concentrate exclusively on your child who is undergoing surgery, it is recommended that you arrange babysitting services for the other siblings on the day of surgery.



_ At home in the first 24 hours after anesthesia

Your child should not be left home alone so that you can provide immediate assistance if any emergencies arise (for example, sudden onset of feeling unwell, weakness, or dizziness).



_ General remarks about the medications

For many years, medications that have been used routinely in anesthesia for adults have also been successfully administered to children, even though manufacturers of the medication have not approved them for use in children. Worldwide experience to date shows that these medications can also be safely deployed in children. However, heretofore unknown risks cannot be completely ruled out.



_ Billing

Generally, you will receive a separate invoice from narkose.ch for the anesthesia that was carried out, unless other arrangements have been made with the surgeon, surgery center, or clinic. Should you have any questions regarding billing, please contact us anytime.



_ Your satisfaction is important to us

Please notify us if you were not satisfied with our work or aspects thereof. Your feedback allows us to continually improve. Of course, your praise also motivates us to do our best.

You can provide us feedback via phone, mail, or email at the addresses listed below. We strive to process your feedback as soon as possible, to pass the information on to the respective quality control personnel, and to respond back to you.

You can contact narkose.ch at the following locations:

<p>narkose.ch Huobmattstrasse 3 6045 Meggen / LU Tel.: 041 379 70 30 info-meggen@narkose.ch</p>	<p>narkose.ch Riedhofstrasse 67 8408 Winterthur Tel.: 052 320 01 20 info-winterthur@narkose.ch</p>	<p>narkose.ch Via Senago 42 6912 Lugano-Pazzallo Tel.: 091 980 44 04 info-ticino@narkose.ch</p>
<p>Limmatklinik Hardturmstrasse 133 8005 Zürich Tel.: 044 448 30 30 info@limmatklinik.ch</p>		