

# Providing Development-Based Care in Pediatric Anesthesia

*Stanford Children's Pediatric Anesthesiology*

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# Why teach development-based care?

- The perioperative period is a potentially complex and stressful time for young patients and their families, and much of this is informed and shaped by the child's developmental stage.
- The ACGME requires every anesthesiology resident to provide a minimum of 100 anesthetics to pediatric patients in order to complete their training.
- Most residents have had little to no experience caring for pediatric patients outside of their medical school clerkships, so may not feel prepared to meet the wide spectrum of psychosocial and developmental needs that come with this population.

# Why learn development-based care?

- The anesthesiologist plays a crucial role in the care for pediatric surgical patients, especially during the more sensitive times, including:
  - *preparation for the operative experience*
  - *Consenting/assenting for procedures*
  - *separation from caregivers*
  - *induction of anesthesia*
  - *attending to post-operative needs such as pain or emergence delirium*
- It is important that anesthesiology residents feel equipped to recognize and meet the developmental needs of their patients in order to deliver high quality perioperative care.

# Learning Objectives

## Discuss

Discuss the importance of developmental pediatric principles and how these apply to the practice of pediatric anesthesiology.

## Identify

Identify developmental characteristics by general age groups relevant to the anesthesia resident.

## Demonstrate

Demonstrate skills to assess and provide the perioperative needs of a pediatric patient based on their developmental stage.

# Communication: General Thoughts

- Children benefit when their doctors recognize and respect their interests, families, accomplishments, fears, etc.
- In general, in any interaction with a pediatric patient, the child should receive the first acknowledgement and communication from the physician no matter the age.
  - May be anything from a smile and wave for those who may have stranger anxiety to more formal/direct interactions as the child's age increases.
  - Even a very young child can participate in giving a medical history and talking about the reason for surgery, etc.



# Consent and Assent: Developmental Context

Developmental stage influences a child's ability to understand concepts of illness and treatment.

Although children are not legally considered competent to make medical decisions, it is ethically important to still obtain assent for procedures by engaging them in shared decision making.

The American Academy of Pediatrics outlines four steps for obtaining assent in older children and teens:

Communicate with the patient about their medical condition or procedure at their developmental level.

Explain what the child can expect from medical care, surgery, anesthesia, etc.

Evaluate if the child comprehends what is involved, ascertain if the child is being pressured to accept treatment.

Ask the child to accept the medical recommendations, should discuss alternatives if there are any.

# How much do kids want to know?

- A 2009 study published in *Anesthesia and Analgesia* investigated what perioperative information children want to receive from medical staff.
- 143 children ages 7-17 (ASA I or II) undergoing elective outpatient surgery under GA were enrolled.
- Results indicated that the vast majority of children in this age group had a desire for comprehensive information about their surgery, including information about pain and anesthesia.
  - Interestingly, children who were determined to be more anxious based on a standardized measure endorsed stronger desire for information and lesser tendency to avoid information.
  - Younger children wanted to know what the perioperative environment would look like more than adolescent children.

# Top Questions:

*Topics patients felt they  
"really need to know"*

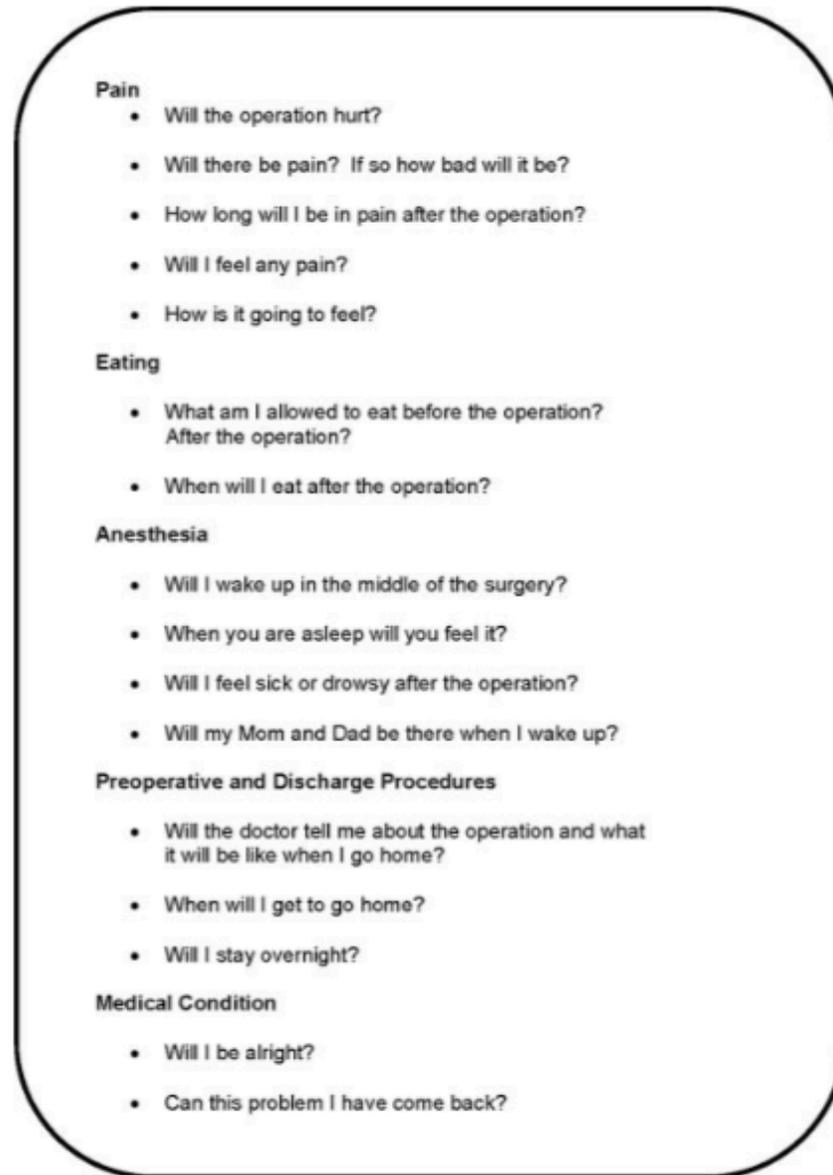
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- Pain**
    - Will the operation hurt?
    - Will there be pain? If so how bad will it be?
    - How long will I be in pain after the operation?
    - Will I feel any pain?
    - How is it going to feel?
  - Eating**
    - What am I allowed to eat before the operation?  
After the operation?
    - When will I eat after the operation?
  - Anesthesia**
    - Will I wake up in the middle of the surgery?
    - When you are asleep will you feel it?
    - Will I feel sick or drowsy after the operation?
    - Will my Mom and Dad be there when I wake up?
  - Preoperative and Discharge Procedures**
    - Will the doctor tell me about the operation and what it will be like when I go home?
    - When will I get to go home?
    - Will I stay overnight?
  - Medical Condition**
    - Will I be alright?
    - Can this problem I have come back?

Figure 1. Recommendations of questions that must be addressed with children before surgery.

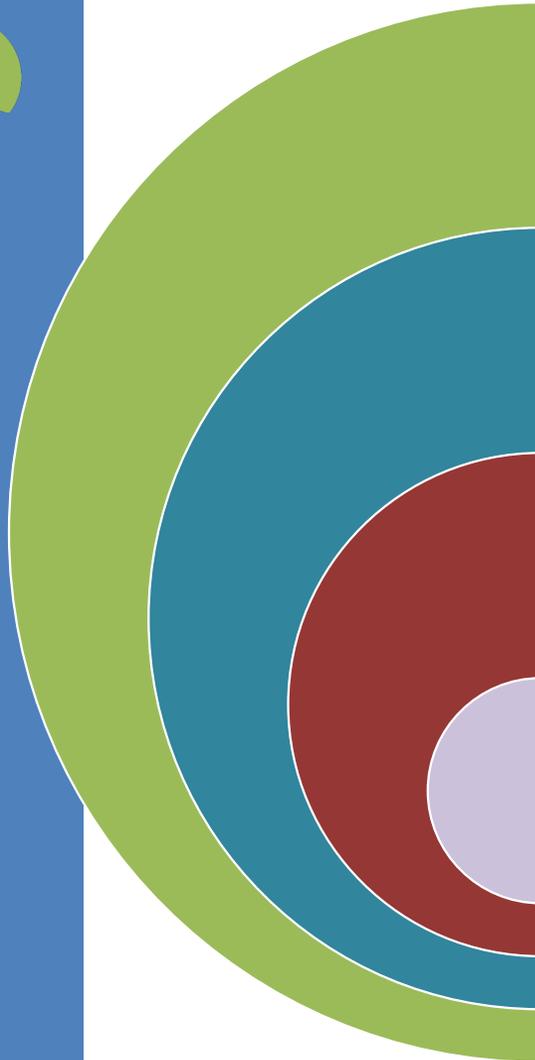
# General Considerations and Tips by Developmental Stage

- The next few slides will address general developmental considerations by age group that can be useful knowledge for the anesthesiologist.
- Along with these considerations, a few practical tips will be included that can be applied to clinical practice.
- Remember: though specific age ranges are provided, developmental stage is not always correlated with numerical age.
  - It is important to pay attention to a child's medical record or parental report to understand what specific developmental needs they may have.



# Infants (0-1 yrs)

## General Developmental Considerations



<p>Even at only a few months old, infants are aware of surroundings and attuned to the emotional state of their caregivers.</p>	
<p>Cannot understand the reason for hospital visits or for not being able to eat or drink. Have limited verbal abilities to convey their emotions or needs.</p>	
<p><b>"Stranger Danger"</b> develops around 8-9 months and may last until ~18 months of age.</p>	<ul style="list-style-type: none"><li>• <i>The principle stressor at this age is generally separation from primary caregivers.</i></li></ul>
<p>Other age-associated stressors include unfamiliar surroundings, unfamiliar attire of perioperative team, impaired basic needs (e.g. being NPO).</p>	



# Infants (0-1 yrs)

## Practical Tips

On greeting the family, initial warm greeting should be directed to the infant as this can send reassuring message to parent.

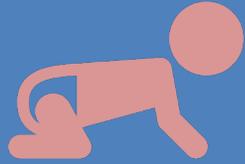
Ease parent stress by educating them about perioperative plan/expectations, unfamiliar medical equipment, etc.

Encourage parent presence and participation in care when able.

- Opt to examine when in parent's arms or lap
- Involve parents in positioning during procedures (to comfort, not restrain)

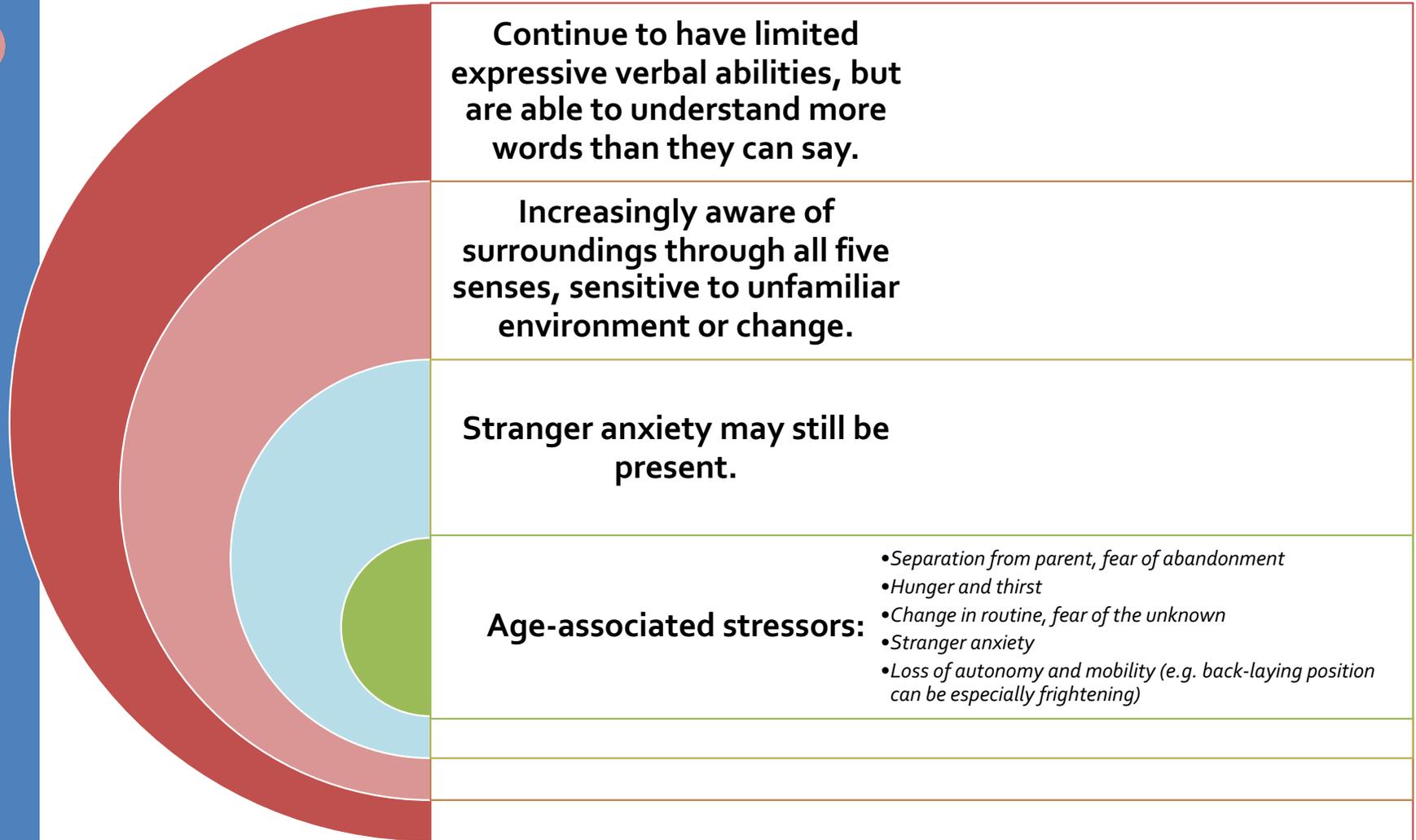
Offer to bring familiar comfort items to the OR (eg pacifier, music, blanket).

Offer to carry an infant to the OR to avoid isolation/placement in unfamiliar hospital crib.



# Toddlers (1-3 yrs)

## General Developmental Considerations





# Toddlers (1-3 yrs)

## Practical Tips

Encourage parent participation, e.g. ask primary caregiver(s) what words or actions the toddler uses to express pain/discomfort.

Direct simple explanations of all actions and unfamiliar equipment toward the child. Use simple and general language to describe the sensory details (feel, touch, smell, etc).

Allow toddlers to explore equipment and mimic actions to increase level of comfort (placing mask on parent's face, holding stethoscope diaphragm to own chest, etc).

Offer choices when possible (choice of comfort item/distraction technique, option to be held vs ride in the hospital crib).

Allow for motor activity as able. If safe, induce in sitting position to avoid back-laying while awake.

To ease parent anxiety, can be helpful to explain that the child's initial response to separation from them may be protest, but this is an expected and healthy response.

# Preschool Age (3-6 yrs)



## General Developmental Considerations



<b>Cognitively, understand the world in subjective/self-referential ways. Do not have capacity for abstract thought.</b>	<ul style="list-style-type: none"><li>•Best understand what they are able to directly experience. Learn through role playing or imitation.</li><li>•Difficulty understanding things that can be undone/reversed</li></ul>
<b>Verbally, vocabulary grows from ~300 words at 3 years to &gt;1200 words at 6 years.</b>	
<b>Overall fear of bodily harm presents in this age group</b> <i>(esp. fascinated with skin integrity, cuts, etc.)</i>	
<b>Use associative logic / "magical thinking"</b>	<ul style="list-style-type: none"><li>• Assign idiosyncratic meanings to illnesses/injuries (e.g. can view surgery or as punishment)</li></ul>
<b>Age-associated stressors:</b>	<ul style="list-style-type: none"><li>•disruption of routine, loss of autonomy</li><li>•fear of unknown, separation anxiety</li><li>•misconceptions due to lack of explanation or understanding</li><li>•heightened fears of pain or bodily harm.</li></ul>



# Preschool Age (3-6 yrs)

## Practical Tips

**Acknowledge the child's autonomy by introducing yourself directly**

**Invite the child to contribute to history taking, etc**

- Studies have shown that children as young as 3 years are able to participate in information exchange and relationship building with a physician.

**Describe what is going to be done directly to the child, use their own language when possible.**

- Avoid metaphoric or vague language such as "put to sleep", "flush" the IV, or
- Correct misconceptions, provide positive reinforcement

**Have the child practice and role play (e.g. holding O<sub>2</sub>mask). Encourage them to touch and examine various medical equipment if interested (stethoscope, monitors, etc).**

**Offer choices (e.g. which stickers/flavor to apply to O<sub>2</sub> mask), allow mobility as safety allows.**

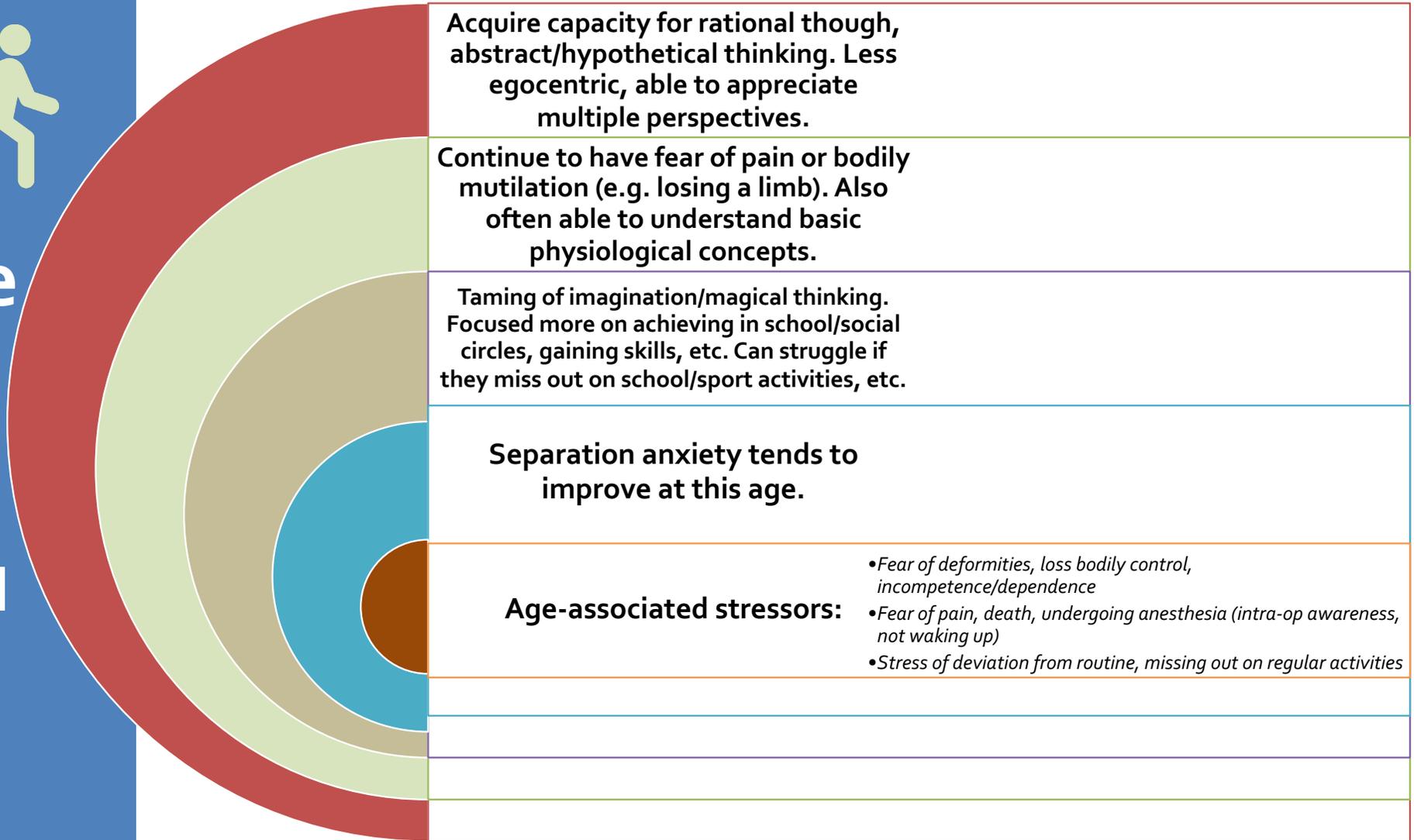
**Familiar comforts should be present (TV show, stuffed animal, game).**

**Use small, clean bandages to cover IV sites, etc.**

# Grade School Age (7-12 yrs)



## General Developmental Considerations





# Grade School Age (7-12 yrs)

## Practical Tips

Give child tasks to help, encourage making choices when possible. Provide activities that foster a sense of accomplishment.

Give specific information about which body part will be affected and how.

Explain what will happen before, during, after surgery. Set realistic expectations for how they may feel after surgery. Avoid threatening language like cut, bleed, etc.

Avoid threats or bribes (e.g. "If you don't hold still, the doctor will need to give you a shot").

Encourage expression of fears or concerns. Be open and answer questions as directly as you can. Identify and correct misconceptions.

Reassure how pain will be addressed.

Can be helpful to explain special privileges after the surgery: TV/video games in the hospital room, ice cream in PACU, etc.



# Adolescents (11-12+ years)

## General Developmental Considerations

	<p><b>Cognitively, this stage is marked by growing proficiency in abstraction.</b></p>	<ul style="list-style-type: none"><li>• <i>Able to hypothesize, test possibilities, use inductive reasoning</i></li></ul>
	<p><b>Peer relationships play a primary role, often self-conscious about how they will be perceived by others.</b></p>	<ul style="list-style-type: none"><li>• <i>Tend to be more concerned with potential impacts on body image, physical appearance, deformity</i></li></ul>
	<p>Generally like to explore independence from parents, but many still want their parents involved in medical decision making.</p>	
	<p>Often desire physicians to respect their autonomy.</p>	
	<p>May not feel comfortable asking all their questions, or expressing that they are nervous/fearful</p>	
	<p><b>Age-associated stressors</b></p>	<ul style="list-style-type: none"><li>• <i>Fear of scarring or altered appearance, fear of restrictions on activities</i></li><li>• <i>Fear of anesthesia (intra-op awareness, death)</i></li><li>• <i>Loss of independence and control</i></li><li>• <i>Loss of peer acceptance/rejection</i></li></ul>



## Adolescents (11-12+ years)

### Practical Tips

Respect autonomy and privacy

Provide honest, clear explanations of perioperative expectations and reassurance (e.g. IV placement, pain/PONV management)

Facilitate choices and control, include them in their plan of care

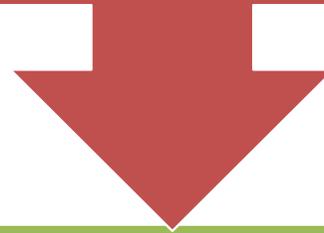
In mid-late teen years, address the patient primarily and include parents when their support is needed.

All adolescents should be offered opportunity to address any personal questions or concerns with parents out of the room.

Normalize fears/preferences (“many teens are nervous about/prefer...”).

## A Quick Note on Young Adults (18 yrs +)

At LPCH, we often care for young adults as many of them are being seen for medical conditions that arose in their childhood and require pediatric subspecialists.



In an environment where parents are usually the ones to make procedural or medical decisions, it is important to be deliberate about ensuring a young adult's autonomy, consent, and privacy.

# References

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Rackley S, Bostwick JM. The pediatric surgeon-patient relationship. *Seminars in Pediatric Surgery* 2013; 22: 124-128.

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Harris T, Sibley A, Rodriguez C, Brandt ML. Teaching the psychosocial aspects of pediatric surgery. *Seminars in Pediatric Surgery* 2013; 22: 161-166.

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Fortier MA, et al. Children's Desire for Perioperative Information. *Anesthesia and Analgesia* 2009; 109: 1085-90.

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Taylor E. Providing Developmentally Based Care for Preschoolers. *AORN Journal* 2008; 88: 267-273.

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Taylor E. Providing Developmentally Based Care for Toddlers. *AORN Journal* 2008; 87: 992-999.

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Taylor E. Providing Developmentally Based Care for School-Aged and Adolescent Patients. *AORN Journal* 2009; 90: 261-267.

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Perrin E, Shipman D. (2018). "Hospitalization, Surgery, and Medical and Dental Procedures". *Developmental-Behavioral Pediatrics*. 4th Ed. Philadelphia, PA: Elsevier Inc, 2009. 329-336. Print.

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Adler AC, Leung S, Lee B, Dubrow S. Preparing Your Pediatric Patients and Their Families for the Operating Room: Reducing Fear of the Unknown. *Pediatrics in Review* 2018; 39: 13-26.