VIDEOS IN CLINICAL MEDICINE
SUMMARY POINTS

Managing Procedural Anxiety in Children

Baruch S. Krauss, M.D., Benjamin A. Krauss, and Steven M. Green, M.D.

The following text summarizes information provided in the video.

OVERVIEW

When children need medical care, the situation can be stressful for both the parent and the child. Pain, fear, and unfamiliar surroundings can lead to a high level of anxiety, which may make accurate assessment and treatment challenging. When anxiety is alleviated, children are more likely to engage with clinicians and follow instructions, which makes it easier for the clinician to perform the procedure or physical examination and to obtain accurate and complete diagnostic information. This video describes and interprets the signs of acute anxiety in children and demonstrates approaches to interacting with children that minimize anxiety and maximize cooperation.

From the Division of Emergency Medicine, Boston Children's Hospital (B.S.K.), and University of Massachusetts Boston (B.A.K.), Boston; and the Department of Emergency Medicine, Loma Linda University Medical Center and Children's Hospital, Loma Linda, CA (S.M.G.). Address reprint requests to Dr. Baruch S. Krauss at the Division of Emergency Medicine, Boston Children's Hospital, 300 Longwood Ave., Boston, MA 02115, or at baruch.krauss@childrens.harvard.edu.

N Engl J Med 2016;374:e19.
DOI: 10.1056/NEJMvcm1411127

INDICATIONS

The physical examination of children and the performance of common minor procedures such as venipuncture, intravenous cannulation, immunization, and laceration repair typically involve minimal pain but can be frightening to children. Consequently, the physical examination and these types of procedures may be difficult for the clinician to perform.

PATIENT ASSESSMENT

An accurate evaluation of a child's emotional state is one of the most critical components of managing procedural anxiety (Fig. 1). The underestimation or misjudgment of a child's emotional state can lead to interactions that may cause further distress. The child's anxiety level, the parent's anxiety level, and previous medical experiences are important determinants of the child's ability to respond positively to a physical examination or medical procedure. The clinician can make a rapid assessment of a child's emotional state by continuously observing behavioral cues, such as the position of the child relative to the parent and the child's responsiveness and willingness to engage with the clinician.

Figure 1. Assessing the Child's Emotional State.

OBSERVATIONS BEFORE ENTERING THE EXAMINATION ROOM

You can gather clues about the baseline anxiety level of the child and the parent before entering the examination room. Look into the room and observe the position of the child in relation to the parent. A child who is playing independently probably has a lower level of anxiety level than a child who is holding onto the parent or is huddled in the parent's lap. Observe whether the child is sitting quietly or is continuously moving. If it will be necessary for the child to be in a particular position during the procedure or examination, try to gauge whether he or she will be able to maintain that position. Scrutinize the facial expressions and posture of the child and the parent, noting whether they appear to be relaxed or tense. Observe what the child and the parent are doing. The more engaged the child is in an activity, the lower the child's anxiety level.

OBSERVATIONS WHEN ENTERING THE EXAMINATION ROOM

After you have briefly observed the child and the parent, enter the room slowly and remain at a distance for a moment while you observe the child's reaction. A minimally anxious child may make eye contact and respond verbally. A moderately anxious child may respond nonverbally by nodding or watching your movements. A very anxious child may look away or hide his or her head when being addressed by you. If the child's anxiety level is low, enter the room and engage the child directly. If the child's anxiety level is moderate or high, begin your initial interaction at a distance and then slowly approach the child. As you approach the child, notice whether his or her anxiety increases. If your initial interaction increases the child's anxiety, start again and approach more slowly. When you attempt to engage the child, speak softly, slowly, and simply. An increasing level of engagement from the child — which the child will demonstrate by watching your movements or nodding as you speak — indicates decreasing anxiety and the beginning of cooperation with you.

At this point, it can be helpful to ask the parent about what calms the child in situations similar to this one. Notice the parent's anxiety level and the effect it has on the child. If you can decrease parental anxiety, you can reduce the child's anxiety, and vice versa. Shift attention away from the examination or procedure by asking the parent to engage the child in an activity. This engagement also helps to distract the parent and lessen any anxiety that the parent may inadvertently transfer to the child. Help the parent to use words and phrases that are appropriate for the child's developmental age and to avoid the use of potentially fear-inducing terms, such as needle, shot, or stitches (Table 1). If the child's anxiety appears to

Table 1. Use of Developmentally Sensitive Language.*

Language to Avoid	Language to Use
"You will be okay; there is nothing to worry about." Reason: Provides false sense of reassurance.	"What did you do in school today?" Reason: Provides distraction.
"This is going to hurt" or "this won't hurt." Reason: Is vague and has negative focus.	"It might feel like a pinch." Reason: Provides accurate sensory information
"The nurse is going to draw your blood." Reason: Is vague.	"First, the nurse will clean your arm, and you will feel the cold alcohol pad; next . . . ." Reason: Provides accurate sensory and procedural information.
"You are acting like a baby." Reason: Expresses criticism.	"Let's get your mind off of this; tell me about that movie . . . ." Reason: Provides distraction.
"This will feel like a bee sting." Reason: Has negative focus.	"Tell me how it feels" Reason: Allows child to provide information.
"The procedure will last as long as . . . " Reason: Has a negative focus.	"The procedure will be shorter than the time it takes to watch this television program [or another time frame that is familiar to the child]." Reason: Provides information on the procedure and has a positive focus.
"The medicine will burn." Reason: Has a negative focus.	"Some children say this gives them a warm feeling." Reason: Provides sensory information and has a positive focus.
"Tell me when you are ready." Reason: Gives the child too much control.	"When I count to 3, blow the feeling away from your body." Reason: Provides coaching that help child cope with feeling; provides distraction; gives the child limited control.
"I am sorry." Reason: Exacerbates distress.	"You are being very brave." Reason: Offers praise and encouragement.
"Don't cry." Reason: Has a negative focus.	"That was hard; I am proud of you." Reason: Offers praise.
"This is over." Reason: Has a negative focus.	"You did a great job doing the deep breathing and holding still." Reason: Offers specific praise.

* Words or phrases that are helpful to one child may be threatening to another; parents and health care providers should select their language carefully. Adapted from Cohen.[1]

be out of proportion to the situation, ask the parent whether the child has previously had a negative medical experience. If so, address the negative experience directly and tell the child how the current experience will be different.

INTERACTIVE TECHNIQUES

By combining all the information that you have gathered up to this point about the degree of anxiety in the room, you will be able to formulate your next set of interactions. Your goal is to positively influence the emotional state of the child, moving him or her from a state of fear to state of trust by executing a series of interactive techniques. These techniques include arousing curiosity, using desensitization, and shifting awareness.

AROUSING CURIOSITY

One way to quickly decrease a child's anxiety is to arouse curiosity. This technique will effectively shift awareness away from the source of anxiety. In young children, point out the color or design of an item of clothing (Fig. 2). You could say, for example, "Look at your shoes. They are a very bright red!" Alternatively, use an object in the examination room to demonstrate a developmental task that the child is attempting to master (Fig. 3). Examples include picking up an object and putting it into a specimen cup, taking off and putting on the lid of the specimen cup, holding a tongue blade in one hand and then transferring it to the other hand, or putting the two ear pieces of an otoscope together, one inside the other. The toy or object itself is less important than the task you demonstrate. In infants and toddlers, you can arouse curiosity with visual and auditory stimulation by shining the light of an otoscope or ophthalmoscope, imitating the child's gestures or movements, playing with puppets, presenting sparkly objects, blowing bubbles, playing peek-a-boo, singing, making syncopated sounds, or rhythmically tapping with a toy on the stretcher or table. In children of all ages, a tablet computer can provide either a passive distraction, such as a movie, or an interactive distraction, such as a video game.

Figure 2. Arousing Curiosity.

Figure 3. Engaging the Child in the Performance of a Developmental Task.

During the initial interaction, some children will be too anxious to tolerate allow direct eye contact or to be touched or spoken to. In such situations, allow the child to adjust to your presence gradually. Back away slightly and direct your eye contact and speech to the parent until an opportunity to arouse curiosity permits you to engage the child. Making yourself smaller and less intimidating by sitting or crouching down when interacting with the child can also help to lessen anxiety.

USING DESENSITIZATION

Children are often apprehensive about unfamiliar things in the examination room, such as the examination table, instruments, and equipment. Permitting children to touch and hold the various objects will help to desensitize them to the environment and to enhance their trust and attention (Fig. 4). Demonstrating parts of the physical examination on yourself, the child's parents, older siblings, or a toy before approaching the child may also lessen anxiety. In a child with injuries, begin by gently touching uninjured areas of the body and then gradually move toward the site of the injury. By repeatedly applying a topical analgesic agent before repairing a laceration, you can help the child to realize that your touch will not be painful or frightening.

Figure 4. Desensitizing the Child to Instruments Used in the Physical Examination.

SHIFTING AWARENESS

After you have made efforts to arouse the child's curiosity and to desensitize the child to the surroundings, identify the child's interests and developmental level and use this information to focus his or her attention and shift awareness away from

REFERENCES

1. Cohen LL. Behavioral approaches to anxiety and pain management for pediatric venous access. Pediatrics 2008;122: Suppl 3:S134-9.

the procedure or examination. Discuss popular toys, action figures, or sports, and inquire about favorite activities at home or school. Try to engage the child in drawing or coloring, watching a television show or DVD, listening to music, or playing a video game. If needed, solicit ideas from the parent about how to engage the child. If you are successful in helping the child to focus on an area of interest, the child's awareness will be shifted away from the source of anxiety to the identified subject or task. For example, you may be able to apply topical and local analgesics and repair a laceration while causing no discomfort and without the child being aware of what you are doing.

PHARMACOLOGIC ADJUNCTS

Despite your best efforts, there will be times when children are too anxious and fearful to focus their attention elsewhere. In these situations, intranasal or oral anxiolytic medications, such as midazolam, can help to decrease anxiety, allowing you to engage the child and establish trust.

Table 2. Summary of Key Interactive Techniques.

Arousing curiosity
Using desensitization
Identifying areas of interest
Focusing attention
Shifting awareness

SUMMARY

Establishing trust with a child who is fearful of a physical examination or medical procedure can be rapidly accomplished by executing a series of interactive techniques that are matched to the child's age, emotional state, and developmental level (Table 2). The ultimate goal is to provide a positive, nontraumatic experience for children and their families.

No potential conflict of interest relevant to this article was reported.
Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.