Assessing pain in pediatric patients

Editor’s note: In the July/August issue, we explored how to assess pain in older patients. Join us this issue as we take a look at pain assessment for pediatric patients.

Pain is a subjective experience; for infants and children, it’s possibly the most bewildering and frightening occurrence in their young lives. Until age 3 or so, children can’t grasp abstract concepts, such as time, cause and effect, and quantification. Consequently, it’s impossible for them to understand why pain occurs or that relief is just around the corner. They know only that something hurts right now.

What makes the experience particularly distressing is that infants and young children lack the language skills needed to tell someone that they’re in pain, where and how much it hurts, or to ask for help. Infants and children are uniquely dependent on the ability of their parents and healthcare providers to recognize the physiologic and behavioral signs of pain and to react by relieving their pain.

Where does it hurt?
Assessing pain in infants and young children requires the cooperation of parents and the use of age-specific assessment tools. If the child can communicate verbally, he can also help in the process. Normal clinical assessment involves a health history that includes a description of any pain and palliative measures, along with a comprehensive physical exam. When assessing infants and children, you’ll rely on parents for the health history and background on experience with pain.

To help you better understand the child’s pain, ask the parents these questions:
• What kinds of pain has your child had in the past?
• How does your child usually respond to pain?
• How do you know your child is in pain?
• What do you do when he’s hurting?
• What works best to relieve your child’s pain?
• Is there anything special you’d like me to know about your child and pain?

The child’s vital signs can be pain indicators. Elevated pulse, BP, or respirations can be signs of pain and stress. However, these findings must be viewed in conjunction with other assessment data because nonpainful stimuli can elicit changes in vital signs as well. For example, just touching an infant can speed or calm his pulse rate.

Tools of the trade
A number of proven assessment tools have been designed for young patients that seek to quantify the child’s pain—one of the harder things to accomplish during assessment and observation. Using an assessment tool will help, but quantifying pain in the infant or preverbal child will still be difficult.

Pain assessment tools are unidimensional (measuring or assessing one indicator) or multidimensional (measuring or assessing multiple indicators). Composite measures of pain include physiologic, behavioral, sensory, and cognitive indicators. These tools tend to be especially useful when assessing children under age 3 or older children with cognitive deficits.

Because of the complexity of assessing pain in infants, there’s no single pain measurement tool that works well for all
Measuring pain in infants

Assessing pain in infants can be challenging. This chart describes three assessment tools that can help you meet this challenge.

<table>
<thead>
<tr>
<th>Assessment tool</th>
<th>Factors measured</th>
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<tbody>
<tr>
<td>CRIES neonatal postoperative pain measure</td>
<td>• Crying (C)</td>
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<tr>
<td></td>
<td>• Oxygen saturation (R—requires oxygen to maintain</td>
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<tr>
<td></td>
<td>saturation above 95%)</td>
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<td></td>
<td>• Heart rate and BP (I—increased)</td>
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<td></td>
<td>• Expression (E)</td>
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<td></td>
<td>• Sleeplessness (S)</td>
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<tr>
<td>Neonatal Infant Pain Scale</td>
<td>• Facial expression</td>
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<tr>
<td></td>
<td>• Crying</td>
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<td></td>
<td>• Breathing patterns</td>
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<td></td>
<td>• State of arousal</td>
</tr>
<tr>
<td></td>
<td>• Movement of arms and legs</td>
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<tr>
<td>Premature Infant Pain Profile</td>
<td>• Gestational age</td>
</tr>
<tr>
<td></td>
<td>• Heart rate</td>
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<tr>
<td></td>
<td>• Oxygen saturation</td>
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<tr>
<td></td>
<td>• Behavioral state</td>
</tr>
<tr>
<td></td>
<td>• Brow bulge</td>
</tr>
<tr>
<td></td>
<td>• Eye squeeze</td>
</tr>
<tr>
<td></td>
<td>• Nasolabial furrow</td>
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The CRIES scale is one tool you can use to help measure pain in infants.

Patients. However, three multidimensional tools for measuring pain in infants have proved to be quite effective: the CRIES neonatal postoperative pain measurement scale, the Neonatal Infant Pain Scale, and the Premature Infant Pain Profile (see Measuring pain in infants). The CRIES inventory is one of the easier tools to use. Five separate factors are scored on a scale of 0 to 2. Infants with a score of 0 are pain free. A total score of 10 indicates extreme pain.

Several simple and effective pain measuring scales can help the child who’s able to speak identify his level of pain. These include the Wong-Baker FACES Pain Rating Scale, the visual analog scale (children who understand the concept of a continuum can mark the spot on the line that corresponds to the level of pain they feel), and the chip pain measuring tool.

The chip tool uses four identical chips to signify levels of pain and can be used for the child who understands the basic concept of adding one thing to another to get more. If available, you can use poker chips. If not, simply cut four uniform circles from a sheet of paper. Here’s how to present the chips:

• First say, “I want to talk with you about the hurt you might be having right now.”
• Next, align the chips horizontally on the bedside table, a clipboard, or other firm surface where the child can easily see and reach them.
• Point to the chip at the child’s far left and say, “This chip is just a little bit of hurt.”
• Point to the second chip and say, “This next chip is a little more hurt.”
• Point to the third chip and say, “This next chip is a lot of hurt.”
• Point to the last chip and say, “This last chip is the most hurt you can have.”
• Ask the child, “How many pieces of hurt do you have right now?” (You won’t need to offer the option of “no hurt at all” because the child will tell you if he doesn’t hurt.)
• Record the number of chips. If the child’s answer isn’t clear, talk to him about his answer, then record your findings.

Facing the pain
Behavior is the language infants and children rely on to convey information about their pain. Areas of behavior that change because of pain include body positioning, facial expression, patterns of eating and sleeping, attention level, and vocalization.

In an infant, facial expression is the most common and consistent behavioral response to all stimuli, painful or pleasurable, and may be the single best indicator of pain for the healthcare provider and the parent. Facial expressions that tend to indicate the infant is in pain include mouth stretched open, eyes tightly shut, brows and forehead knitted (as if they’re in a grimace), and cheeks raised high enough to form a wrinkle on the nose.

In young children, look for such signs as:
• narrowing of the eyes
• grimace or fearful appearance
• frequent and longer lasting bouts of crying, with a tone that’s higher and louder than normal
• less receptiveness to comforting by parents or other caregivers
• holding or protecting the painful area.

Enlist the parents’ help in interpreting the child’s crying. Pain may be the cause, but hunger, anger, fear, or a wet diaper can also elicit crying. Typically, parents can distinguish among the different cries of their child and help narrow down the possible causes. Crying associated with pain is distinguished by frequency, duration, pitch, and intensity. Cries of pain are usually short, sharp, higher in pitch, tense, harsh, nonmelodious, and loud.

On the other hand, some infants don’t cry in response to pain, even pain associated with an invasive procedure. Also, some treatments make crying impossible. Intubated infants, for example, can’t produce an audible cry because the endotracheal tube passes through their vocal cords. However, these infants still exhibit the facial expressions that accompany crying—mouth opened wide and eyes tightly closed.

It’s a mistake to rely too heavily on observed behavior alone when assessing pain in young patients. Some children will suffer pain rather than report it or allow others to see that they’re in pain. Others are adept at distracting themselves and may appear pain free. Some children will sleep soundly, not because they have no pain, but because they’re physically and emotionally exhausted.

A child who’s able to speak well can provide some useful information. However, keep in mind that his language skills are very basic and he may not understand words you use; you may call it pain, but he may think of it as a hurt or boo-boo. Find the words that work best by talking with his parents and with the child himself.

Remember that children who are just learning to talk have a great deal more skill in reading the facial expressions and body language of their parents and caregivers. After all, they’ve been reading this language since birth. Be sure your expression and body posture are conveying a message consistent with your words. If you or his parents appear concerned, he may feel there’s something to fear and this may color his description of the pain he’s feeling.

Learn more about it