Felicia must be in pain so soon after her surgery. I know I would have pain if it were me. Can she get pain medicine without getting another needle? —Mother of Felicia, 5

**LEARNING OUTCOMES**

42.1 Identify the physiologic and behavioral consequences of pain in infants and children.

42.2 Assess the developmental abilities of children to perform a self-assessment of pain intensity.

42.3 Describe the nursing assessment and management for a child receiving an opioid analgesic.

42.4 Explain the physiology that enables nonpharmacologic (complementary) methods of pain control to be effective.

42.5 Assess children of different ages with acute pain and develop a nursing care plan that integrates pharmacologic interventions and developmentally appropriate nonpharmacologic (complementary) therapies.

42.6 Develop a nursing care plan for assessing and monitoring the child having sedation and analgesia for a medical procedure.
Every child has his or her own perception of pain. A neurological response to tissue injury, pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage (Young, 2005). Effective pain management is every child’s right.

**PAIN**

Pain may be either acute or chronic. **Acute pain** is sudden and of short duration that may be associated with a single event, such as surgery, or an acute exacerbation of a condition such as a sickle cell crisis. An immediate pain response occurs immediately at the time of tissue damage, and the inflammatory response that follows the initial injury causes a sustained pain response (see Pathophysiology Illustrated).

Due to a two-way control of nociceptive transmission within the spinal tracts, pain perception can be inhibited or changed when a competing nonpain impulse is sent along the same nerve pathways, a simple explanation of the pain Gate Control Theory. Stimulation of the larger A-delta fibers by ice or massage causes the substantia gelatinosa in the dorsal horn of the spinal cord to “close the gate” and decrease the transmission of pain impulses to the brain. The brain cortex also has bi-directional control of nociceptive transmission and can inhibit some pain stimuli (Huether & Defriez, 2006, p. 453). **Endorphins**, endogenous opioids produced by the brain in response to painful stimuli, help inhibit pain impulses in the spinal cord and the brain (Huether & Defriez, 2006, p. 454).

**PATHOPHYSIOLOGY ILLUSTRATED**

**PAIN PERCEPTION**

1. Nociceptors (free nerve endings at the site of tissue damage) transmit information via specialized nerve fibers to the spinal cord.
2. Unmyelinated C fibers slowly transmit dull, burning, diffuse pain as well as chronic pain. Large, myelinated A-delta fibers quickly transmit sharp, well-localized pain. Nociceptors are stimulated by mechanical, thermal, and chemical injury. Biochemical mediators (bradykinin, prostaglandin, leukotrienes, serotonin, histamine, catecholamines, and substance P) are produced in response to tissue damage. These substances help move the pain impulse from the nerve endings to the spinal cord. 3. After the sensory information reaches the substantia gelatinosa in the dorsal horn of the spinal cord, the pain signal may be modified depending on the presence of other stimuli, from either the brain or the periphery. 4. The pain signal is then transmitted through the lateral spinothalamic tract, to the thalamus of the brain where perception occurs. 5. Once the sensation reaches the brain, interpretation of pain occurs, and emotional responses may increase or decrease the intensity of the pain perceived.
Chronic pain is a persistent pattern of pain, lasting longer than 6 months; it is generally associated with a prolonged disease process such as juvenile rheumatoid arthritis. Chronic pain may be nociceptive or neuropathic pain, initiated or caused by a primary lesion or dysfunction of the nervous system. It does not arouse the sympathetic nervous system in the same way as acute pain. Ongoing stimulation of nociceptors can sensitize the peripheral and central nervous systems leading to neuroanatomical, neurochemical, and neurophysiological changes.

MISCONCEPTIONS ABOUT PAIN IN CHILDREN

Healthcare professionals once believed that children feel less pain than adults. Undertreatment of pain was based on these attitudes about pain and the difficulty and complexity of pain assessment in children. Research has shown that past beliefs about children's perception of pain were incorrect. Even the smallest infants do feel and remember pain. Effective pain treatment is the right of every infant and child. In 2001, the Joint Commission introduced standards for assessing and managing the pain of all patients (Joint Commission, 2007). For a review of past myths and the contrasting reality, see Table 42–1.

DEVELOPMENTAL ASPECTS OF PAIN PERCEPTION, MEMORY, AND RESPONSE

A number of factors influence the pain perceived by the child, including maturation of the nervous system, the child’s developmental stage, and previous pain experiences (see Table 42–2). Newborns and infants develop a memory of pain. Preschool-age children demonstrate pain memory by making efforts to delay a painful procedure.

A child’s responses to acute or chronic pain are also influenced by other factors such as their understanding of the pain source, their ability to control what will happen, their use of a pain control strategy such as distraction, as well as emotions like fear, anxiety, frustration, and anger (Anthony & Schanberg, 2005). Children also report more pain intensity when recalling a past painful experience than when they rated it the time of its occurrence (von Baeyer, Marche, Rocha, et al., 2004).

Table 42–1 Misconceptions about Pain in Infants and Children

<table>
<thead>
<tr>
<th>Myth</th>
<th>Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborns and infants are incapable of feeling pain. Children do not feel pain with the same intensity as adults because a child’s nervous system is immature.</td>
<td>The anatomic and functional requirements for pain processing are present early in fetal life. Preterm and full-term newborns may be more sensitive to pain stimuli because of immature spinal cord descending pain control mechanisms (von Baeyer, Marche, Rocha, et al., 2004).</td>
</tr>
<tr>
<td>Infants are incapable of expressing pain.</td>
<td>Infants express pain with both behavioral and physiologic cues that can be assessed.</td>
</tr>
<tr>
<td>Infants and children have no memory of pain.</td>
<td>Preterm infants have been noticed to associate the smell of alcohol with heel sticks and to try to pull the foot away to avoid the pain. Infants cry in anticipation of immunizations (Young, 2005).</td>
</tr>
<tr>
<td>Parents exaggerate or aggravate their child's pain.</td>
<td>Parents know their child and are able to identify when the child is in pain.</td>
</tr>
<tr>
<td>Children are not in pain if they can be distracted or if they are sleeping.</td>
<td>Children use distraction to cope with pain, but they soon become exhausted when coping with pain and fall asleep.</td>
</tr>
<tr>
<td>Repeated experience with pain teaches the child to be more tolerant of pain and cope with it better.</td>
<td>Children who have more experience with pain respond more vigorously to pain. Experience with pain teaches how severe the pain can become.</td>
</tr>
<tr>
<td>Children tolerate discomfort well. They become accustomed to pain after having it for a while.</td>
<td>Children do not tolerate pain any better than adults. Infants may develop pain sensitivity with repeated exposure and have a higher pain reaction (von Baeyer, Marche, Rocha, et al., 2004).</td>
</tr>
<tr>
<td>Children recover more quickly than adults from painful experiences such as surgery.</td>
<td>Children heal quickly from surgery, but they have the same amount of pain from surgery as an adult.</td>
</tr>
<tr>
<td>Children tell you if they are in pain. They do not need medication unless they appear to be in pain.</td>
<td>Children may be too young to express pain or afraid to tell anyone other than a parent about the pain. The child fears the treatment for pain may be worse than the pain itself.</td>
</tr>
<tr>
<td>Children without obvious physical reasons for pain are not likely to have pain.</td>
<td>The cause of pain cannot always be determined. The feeling of pain is subjective and should be accepted by nurses.</td>
</tr>
<tr>
<td>Children run the risk of becoming addicted to pain medication when used for pain management.</td>
<td>Addiction is extremely rare when the child is treated for an acute condition (less than 1%) (Plaisance &amp; Logan, 2006).</td>
</tr>
</tbody>
</table>
### The Child’s Understanding of Pain, Behavioral Responses, and Verbal Descriptions by Developmental Stage

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Understanding of Pain</th>
<th>Behavioral Response</th>
<th>Verbal Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 months</td>
<td>No understanding of pain; is responsive to parental anxiety</td>
<td>Generalized body movements, chin quivering, facial grimacing, poor feeding</td>
<td>Cries</td>
</tr>
<tr>
<td>6–12 months</td>
<td>Has a pain memory; is responsive to parental anxiety</td>
<td>Reflex withdrawal to stimulus, facial grimacing, disturbed sleep, irritability, restlessness</td>
<td>Cries</td>
</tr>
<tr>
<td><strong>Toddlers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1–3 years</td>
<td>Does not understand what causes pain and why they might be experiencing it</td>
<td>Localized withdrawal, resistance of entire body, aggressive behavior, disturbed sleep</td>
<td>Cries and screams, cannot describe intensity or type of pain Use common words for pain such as owie and boo-boo</td>
</tr>
<tr>
<td><strong>Preschoolers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3–6 years (preoperational)</td>
<td>Pain is a hurt Does not relate pain to illness; may relate pain to an injury Often believes pain is punishment Unable to understand why a painful procedure will help them feel better or why an injection takes the pain away</td>
<td>Active physical resistance, directed aggressive behavior, strikes out physically and verbally when hurt, low frustration level</td>
<td>Has the language skills to express pain on a sensory level Can identify location and intensity of pain, denies pain, may believe his or her pain is obvious to others</td>
</tr>
<tr>
<td><strong>School-Age Children</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7–9 years (concrete operations)</td>
<td>Does not understand the cause of pain, but understands simple relationships between pain and disease Understands the need for painful procedures to monitor or treat disease May associate pain with feeling bad or angry May recognize psychologic pain related to grief and hurt feelings</td>
<td>Passive resistance, clenches fists, holds body rigidly still, suffers emotional withdrawal, engages in plea bargaining</td>
<td>Can specify location and intensity of pain and describes pain physical characteristics in relation to body parts</td>
</tr>
<tr>
<td>10–12 years (transitional)</td>
<td>Better understanding of the relationship between an event and pain Has a more complex awareness of physical and psychologic pain, such as moral dilemmas and mental pain</td>
<td>May pretend comfort to project bravery, may regress with stress and anxiety</td>
<td>Able to describe intensity and location with more characteristics, able to describe psychologic pain</td>
</tr>
<tr>
<td><strong>Adolescents</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13–18 years (formal operations)</td>
<td>Has a capacity for sophisticated and complex understanding of the causes of physical and mental pain Recognizes that pain has both qualitative and quantitative characteristics Can relate to the pain experienced by others</td>
<td>Want to behave in a socially acceptable manner (like adults), show a controlled behavioral response May not complain about pain if given cues that nurses and other healthcare providers believe it should be tolerated</td>
<td>More sophisticated descriptions as experience is gained; may think nurses are in tune with their thoughts, so they don’t need to tell the nurse about their pain</td>
</tr>
</tbody>
</table>

Young children are unable to give a detailed description of their pain because of their limited vocabulary and pain experiences. Depending on their developmental stage, children use different coping strategies, such as escape, postponement or avoidance, diversion, and imagery, to deal with pain. Children may not complain of pain for several reasons:

- Some children believe they need to be brave.
- Preschoolers and adolescents may assume the nurse knows they have pain.
- Some children are afraid that it will hurt more to have the pain treated.
CHAPTER 42

Developing Cultural Competence

EXAMINE YOUR OWN EXPERIENCE

Think about your childhood pain experiences and how your family encouraged you to be stoic or to express pain. Such childhood experiences often contribute to a health professional’s attitudes about the pain experienced by children. For example, some healthcare providers may believe that being in pain for a little while is not so bad, that pain helps build character, or that using pain medication is a sign of a weak character. However, all nurses need to acknowledge the child’s right to pain management, and it is the standard of care.

CULTURAL INFLUENCES ON PAIN

Culture and social learning greatly influence the child’s expression of pain. Children are able to perceive pain in the facial expression of others by 5 to 6 years (Deyo, Prkachin, & Mercer, 2004). They observe family members in pain and try to imitate their responses. Through the process of parental approval and disapproval they learn how to behave when in pain, how much pain should be tolerated, how much discomfort justifies a complaint, how to express a complaint of pain, and who to approach for pain relief. See “Developing Cultural Competence: Examine Your Own Experience.”

Some cultural groups (people of Italian and Jewish descent) use verbal and nonverbal methods to express pain freely while others (Anglo-Saxon–Germanic, Irish, Amish, and Appalachian) encourage a more stoic response with a diminished expression of pain. However, not all members of a cultural group will demonstrate the same pain response. Children will have individualized responses to pain based on their past experiences.

CONSEQUENCES OF PAIN

Unrelieved pain is stressful and has many undesirable physiologic consequences (Table 42–3). For example, the child with acute postoperative pain takes shallow breaths and suppresses coughing to avoid more pain. These self-protective actions increase the potential for respiratory complications. Unrelieved pain may also delay the return of normal gastric and bowel functions and cause a stress ulcer. Anorexia associated with pain may delay the healing process. Pain drains energy resources needed for healing and growth.

Table 42–3
Physiologic Consequences of Unrelieved Pain in Children

<table>
<thead>
<tr>
<th>Responses to Pain</th>
<th>Potential Physiologic Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respiratory Changes</strong></td>
<td></td>
</tr>
<tr>
<td>Rapid shallow breathing</td>
<td>Alkalosis</td>
</tr>
<tr>
<td>Inadequate lung expansion</td>
<td>Decreased oxygen saturation, atelectasis</td>
</tr>
<tr>
<td>Inadequate cough</td>
<td>Retention of secretions</td>
</tr>
<tr>
<td><strong>Neurological Changes</strong></td>
<td></td>
</tr>
<tr>
<td>Increased sympathetic nervous system activity and release of catecholamines</td>
<td>Tachycardia, elevated blood pressure, change in sleep patterns, irritability</td>
</tr>
<tr>
<td><strong>Metabolic Changes</strong></td>
<td></td>
</tr>
<tr>
<td>Increased metabolic rate with increased perspiration</td>
<td>Increased fluid and electrolyte losses</td>
</tr>
<tr>
<td>Increased cortisol production</td>
<td>Increased cortisol and blood glucose levels</td>
</tr>
<tr>
<td><strong>Immune System Changes</strong></td>
<td></td>
</tr>
<tr>
<td>Depressed immune and inflammatory responses</td>
<td>Increased risk of infection, delayed wound healing</td>
</tr>
<tr>
<td><strong>Gastrointestinal Changes</strong></td>
<td></td>
</tr>
<tr>
<td>Increased intestinal secretions and smooth muscle sphincter tone, nausea, anorexia</td>
<td>Impaired gastrointestinal functioning, poor nutritional intake, ileus</td>
</tr>
<tr>
<td><strong>Altered Pain Response</strong></td>
<td></td>
</tr>
<tr>
<td>Increased pain sensitivity</td>
<td>Hyperalgesia, decreased pain threshold, exaggerated memory of painful experiences</td>
</tr>
</tbody>
</table>

PAIN ASSESSMENT SCALES

Various pain scales are used to assess pain in children.

Pain Behavior Scales for Nonverbal Children

Physical and behavioral indicators are used to quantify pain in infants and nonverbal children. For example, the Neonatal Infant Pain Scale (NIPS) and the FLACC Behavioral Pain Assessment Scale rely on the nurse’s observation of the child’s behavior.

The NIPS is designed to measure procedural pain in preterm and full-term newborns up to 6 weeks after birth. The newborn’s facial expression, cry quality, breathing patterns, arm and leg position, and state of arousal are observed. This tool has high inter-rater reliability and validity. See Table 42–4.

The FLACC is designed to measure acute pain in infants and young children following surgery, and it can be used until the child is able to self-report pain with another pain scale. FLACC is an acronym for the five categories that are assessed: Face, Legs, Activity, Cry, and Consolability. The tool has validity and reliability for evaluation of postoperative pain (Manworren & Hynan, 2003; Willis, Merkel, Voepel-Lewis, et al., 2003). See Table 42–5.

Young children (3 years and older) can localize pain if given an outline of the front and back of the body. The child can mark where the pain is located or color the area of pain with crayons. The child should use one color for the place where it hurts the most, and another color for areas with less pain. See My Nursing Kit for body outlines to use for pain assessment.

Self-Report Pain Scales

Other scales depend on the child’s self-report of pain intensity (see Skill 13–1). To use pain scales, the child must be developmentally ready and understand the concept of a little or a lot of pain well enough to tell the nurse. Children 2 to 3 years of age are usually able to understand the concept of “more or less.” This child cannot be given more than three choices on a pain scale (none, some, a lot) when assessing pain. When the child can understand rank order, such as by placing several blocks of different sizes in a row from biggest to smallest, the child is developmentally ready for a numeric scale (Young, 2005). Examples of self-report pain scales for young children include the Faces Pain Scale and the Oucher Scale.

Faces pain rating scale. This scale has a series of six or seven cartoon-like faces with expressions from smiling (or neutral) to tearful, depending upon the model selected. The Wong-Baker scale is commonly used for children from 3 years through adolescence (Figure 42–1). After explanations about the meaning for each face, the child selects the face that is the closest match to the pain felt. Older children can use the words associated with the tool to provide a pain rating. The Faces Pain Rating Scale has good validity and reliability for measuring pain intensity (O’Rourke, 2004). The nurse should not use this tool or the Oucher Scale to compare with the child’s facial expression to determine pain level.

Oucher scale. The Oucher Scale presents a series of six photographs of a child expressing increased intensity of pain in combination with
### Table 42–4 Neonatal Infant Pain Scale (NIPS)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Scoring Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facial Expression</strong></td>
<td></td>
</tr>
<tr>
<td>0 = Relaxed muscles</td>
<td>Restful face with neutral expression</td>
</tr>
<tr>
<td>1 = Grimace</td>
<td>Tight facial muscles; furrowed brow, chin, and jaw (Note: At low gestational ages, infants may have no facial expression)</td>
</tr>
<tr>
<td><strong>Cry</strong></td>
<td></td>
</tr>
<tr>
<td>0 = No cry</td>
<td>Quiet, not crying</td>
</tr>
<tr>
<td>1 = Whimper</td>
<td>Mild moaning, intermittent cry</td>
</tr>
<tr>
<td>2 = Vigorous cry</td>
<td>Loud screaming, rising, shrill, and continuous (Note: Silent cry may be scored if infant is intubated, as indicated by obvious facial movements)</td>
</tr>
<tr>
<td><strong>Breathing Patterns</strong></td>
<td></td>
</tr>
<tr>
<td>0 = Relaxed</td>
<td>Relaxed, usual breathing pattern maintained</td>
</tr>
<tr>
<td>1 = Change in breathing</td>
<td>Change in drawing breath; irregular, faster than usual, gagging, or holding breath</td>
</tr>
<tr>
<td><strong>Arm Movements</strong></td>
<td></td>
</tr>
<tr>
<td>0 = Relaxed/restrained (with soft restraints)</td>
<td>Relaxed, no muscle rigidity, random movements of arms</td>
</tr>
<tr>
<td>1 = Flexed/extended</td>
<td>Tense, straight arms; rigid; or rapid extension and flexion</td>
</tr>
<tr>
<td><strong>Leg Movements</strong></td>
<td></td>
</tr>
<tr>
<td>0 = Relaxed/restrained (with soft restraints)</td>
<td>Relaxed, no muscle rigidity, occasional random movements of legs</td>
</tr>
<tr>
<td>1 = Flexed/extended</td>
<td>Tense, straight legs; rigid; or rapid extension and flexion</td>
</tr>
<tr>
<td><strong>State of Arousal</strong></td>
<td></td>
</tr>
<tr>
<td>0 = Sleeping/awake</td>
<td>Quiet, peaceful, sleeping; or alert and settled</td>
</tr>
<tr>
<td>1 = Fussy</td>
<td>Alert and restless or thrashing; fussy</td>
</tr>
</tbody>
</table>


### Table 42–5 FLACC Behavioral Pain Assessment Scale

<table>
<thead>
<tr>
<th>Categories</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Face</strong></td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown; withdrawn, disinterested</td>
<td>Frequent to constant frown, clenched jaw, quivering chin</td>
</tr>
<tr>
<td><strong>Legs</strong></td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
<td>Kicking or legs drawn up</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense</td>
<td>Arched, rigid, or jerking</td>
</tr>
<tr>
<td><strong>Cry</strong></td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers, occasional complaint</td>
<td>Crying steadily, screams or sobs; frequent complaints</td>
</tr>
<tr>
<td><strong>Consolability</strong></td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging, or being talked to; distractible</td>
<td>Difficult to console or comfort</td>
</tr>
</tbody>
</table>

**Instructions:** Observe the child for 5 minutes or longer. Observe the legs and body uncovered. Reposition the patient or observe activity. Assess body for tenseness and tone. Initiate consoling interventions if needed. Each of the five categories is scored from 0 to 2, resulting in a total score between 0 and 10. A total score of 0 = relaxed and comfortable; 1–3 = mild discomfort; 4–6 = moderate pain; 7–10 = severe discomfort or pain.

**Figure 42–1** The Faces Pain Rating Scale. The Faces Pain Rating Scale is valid and reliable in helping children to report their level of pain. Make sure the child has an understanding of number concepts and then teach the child to use the scale. Point to each face and use the words under the picture to describe the amount of pain the child feels. Then ask the child to select the face that comes closest to the amount of pain felt. Use the number under the face to score the pain.


A vertical Visual Analogue Scale (Figure 42–2). The tool has been developed and tested in three cultural groups: Caucasian, African American, and Hispanic. The tools have good validity and reliability for children over 3 years of age (O’Rourke, 2004).

**Poker chip tool.** This tool uses four checkers or poker chips to quantify pain. The child is asked to pick the number of chips that best match the pain felt, with one chip being a little pain and four being the most pain he or she could have.

**Figure 42–2** The Oucher Scale. Use the Oucher Scale that is the best match for the ethnicity of the child. After determining that the child has an understanding of number concepts, teach the child to use the scale. Point to each photo and explain that the bottom picture is “no hurt,” the second picture is a “little hurt,” the third picture is “a little more hurt,” the fourth picture is “even more hurt,” the fifth picture is “a lot of hurt,” and the sixth picture is the “biggest or most hurt you could ever have.” The numbers beside the photos can be used to score the amount of pain the child reports.

*Source: The Caucasian version of the Oucher used with permission from Judith E. Beyer, RN, PhD, 1983. The African-American version of the Oucher used with permission from Mary J. Denyes, RN, PhD, and Antonia M. Villarruel, RN, PhD, 1990. The Hispanic version of the Oucher used with permission from Antonia M. Villarruel, RN, PhD, 1990.*
School-age children and adolescents have better number concepts and language skills, so additional tools can be used to assess their pain. The nurse should ask the child to describe the pain and give its location. Providing some words such as sharp, dull, aching, pounding, cold, hot, burning, throbbing, stinging, tingling, or cutting can help children describe their pain.

**Numeric pain scale.** This tool, also called the Visual Analog Scale, is a single 10-cm horizontal or vertical line that has descriptors of pain at each end (no pain, worst possible pain). Marks and numbers are placed at each cm on the line. The child marks the amount of pain felt, and the numbers on the line are used to score the pain.

**Word-graphic-rating scale.** This tool has words rather than numbers describing increasing pain intensity across a 10-cm Visual Analog Scale without numbers. The child marks the line that is closest to the level of pain felt. A millimeter ruler can be used to quantify the pain and record the pain score (Figure 42–3 ●).

**Adolescent pediatric pain tool.** This tool includes a human figure drawing, the Word-Graphic Rating Scale, and a choice of descriptive words, e.g., burning, ache, sharp, and dull. Adolescents indicate pain sites on the human figure outline, use the Word-Graphic Rating Scale as described, and use the word choices to characterize the pain felt. See My Nursing Kit for the human figure outline.

**ACUTE PAIN**

Children experience acute pain related to a variety of illnesses and injuries, surgery, and invasive procedures. Just as with adults, children are must have their pain assessed and managed.

**CLINICAL MANIFESTATIONS**

**Physiologic Indicators**

Acute pain stimulates the adrenergic nervous system and results in physiologic changes, including tachycardia, tachypnea, hypertension, pupil dilation, pallor, increased perspiration, and increased secretion of catecholamines and adrenocorticoid hormones (Huether & Defriez, 2006). These signs demonstrate a complex stress response. The body adapts physiologically to acute pain; the vital signs return to near normal, and perspiration decreases after several minutes, so these signs cannot be used for monitoring pain.

**Behavioral Indicators**

Newborns and infants demonstrate knitted brows, squinted eyes with cheeks raised, eyes closed, jerky or flailing movements, and stiff posture in response to pain (Stevens, McGrath, Yamada, et al., 2006). See Figure 42–4 ●. Children in acute pain may be distressed and anxious, especially if they have experienced pain previously (Huether & Defriez, 2006; Young, 2005). Behaviors that could indicate pain or anxiety in infants and toddlers include restlessness or agitation, hyperalertness or vigilance, sleep disturbances, and irritability. Children and adolescents may demonstrate the following additional behaviors:

- Short attention span (child is difficult to distract)
- Facial grimacing, biting or pursing lips

- Figure 42–3 The Word-Graphic Rating Scale. Word-Graphic Rating Scale has words rather than numbers under the line. It may be used by itself or with the Adolescent Pediatric Pain tool. Teach the child to use the tool by pointing to the side of the line that is no pain. Then run your finger along the line and tell the child that this location is the worst possible pain. If the child has some pain, ask the child to make a mark along the line that is the best match for the amount of pain felt. Use a millimeter ruler to measure from the “no pain” end of the line to the marked location to identify the pain score. Make sure the line is the same length each time pain is assessed so comparisons can be made.


- Figure 42–4 Neonatal pain facial expression. Neonatal characteristic facial responses to pain include bulged brow, eyes squeezed shut, furrowed nasolabial creases, open lips, pursed lips, stretched mouth, taut tongue, and a quivering chin.

Pain Assessment and Management in Children

- Posturing (guarding a painful joint by avoiding movement), remaining immobile, or protecting the painful area
- Drawing up knees, flexing limbs, massaging affected area
- Lethargy, remaining quiet, or withdrawal
- Sleep disturbances

**CLINICAL THERAPY**

Pain management includes both drug and nondrug measures. Children need adequate pain medication, but complementary therapies can enhance pain management and ultimately reduce the amount of pain medication needed.

**Opioids**

Opioids are analgesics commonly given for severe pain, such as after surgery or a severe injury. Opioids (e.g., morphine and codeine) may be administered by oral, subcutaneous, intramuscular, and intravenous routes. Administration of opioids by an oral route is as effective as by intramuscular and intravenous routes when the drug is given in an equianalgesic dose (the amount of drug, whether given by oral or parenteral routes, needed to produce the same analgesic effect) (see Drug Guide 42–1). Oral and intravenous routes are preferred for children. Rectal preparations of some opioids are also available. The intramuscular and subcutaneous routes cause pain and stress at the time of injection, and titration of the dosage to achieve a desired response level that can occur with intravenous administration is not possible (Zempsky, Cravero, et al., 2004). The optimal analgesic dose varies widely among patients in all age groups (American Pain Society, 2005). Meperidine is rarely used in children because its metabolite has the potential to cause seizures (Brislin & Rose, 2005).

Common side effects include sedation, nausea, vomiting, constipation, urinary retention, and itching, and these should be treated by rotating the opioids used or with specific therapies as follows:

- Sedation – supplement lower opioid dose with nonsedating analgesia (Greco & Berde, 2005)
- Nausea and vomiting – antiemetic, use alternate opioid
- Constipation
- Urinary retention
- Itching

**Drug Guide**

**OPIOID ANALGESICS AND RECOMMENDED DOES FOR CHILDREN AND ADOLESCENTS***

<table>
<thead>
<tr>
<th>DRUG</th>
<th>APPROXIMATE EQUIANALGESIC ORAL DOSE</th>
<th>APPROXIMATE EQUIANALGESIC PARENTERAL DOSE</th>
<th>RECOMMENDED STARTING DOSE (ADULTS GREATER THAN 50 KG)</th>
<th>RECOMMENDED STARTING DOSE (CHILDREN &amp; ADULTS LESS THAN 50 KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>30 mg</td>
<td>10 mg</td>
<td>15–30 mg every 3–4 hr</td>
<td>0.3 mg/kg every 3–4 hr</td>
</tr>
<tr>
<td>Codeine</td>
<td>120 mg</td>
<td>75 mg IM or Subcutaneous</td>
<td>30–60 mg every 3–4 hr</td>
<td>0.5–1 mg every 3–4 hr</td>
</tr>
<tr>
<td>Hydromorphone (Dilaudid)</td>
<td>7.5 mg</td>
<td>1.5 mg</td>
<td>4–8 mg every 3–4 hr</td>
<td>0.06 mg/kg every 3–4 hr</td>
</tr>
<tr>
<td>Levorphanol (Levo-Dromoran)</td>
<td>4 mg (acute)</td>
<td>2 mg (acute)</td>
<td>2–4 mg every 6–8 hr</td>
<td>0.04 mg/kg every 6–8 hr</td>
</tr>
<tr>
<td>Meperidine (Demerol)</td>
<td>300 mg</td>
<td>75 mg</td>
<td>NR</td>
<td>75 mg every 3 hr</td>
</tr>
<tr>
<td>Methadone (Dolophine, others)</td>
<td>10 mg (acute)</td>
<td>5 mg (acute)</td>
<td>5–10 mg every 4–8 hr</td>
<td>0.2 mg/kg every 4–8 hr</td>
</tr>
<tr>
<td>Oxycodone (Roxicodone)</td>
<td>30 mg</td>
<td>NA</td>
<td>15–20 mg every 3–4 hr</td>
<td>0.1–0.2 mg/kg every 3–4 hr</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>0.1 mg</td>
<td>0.01 mg</td>
<td>5 mcg/kg Lozenge</td>
<td>1 mcg/kg every 1–2 hr</td>
</tr>
</tbody>
</table>

NR = Not recommended; NA = Not available

*For all parenteral opioids, start with the low dose and titrate to effective pain control.

a Caution: Doses of aspirin and acetaminophen in combination with opioid/NSAID preparation must also be adjusted to the patient’s body weight.

b The Oralet is not widely used because of nausea and vomiting side effects.

Nursing Practice

Respiratory depression (unresponsiveness and a respiratory rate less than 12 breaths/min in young children) may progress to respiratory arrest and is the major life-threatening complication of opioid administration. Clinical signs that predict the development of respiratory depression include sleepiness, small pupils, and shallow breathing. Children at particular risk for respiratory depression induced by an opioid are those with an altered level of consciousness, an unstable circulatory status, a history of apnea, or a known airway problem such as obstructive sleep apnea. Some hospitals use continuous pulse oximetry when children receiving opioids are at risk for respiratory depression.

Respiratory depression is most likely to occur when the child is sleeping, a state that augments the depressant effect on the respiratory center and potential airway obstruction by the tongue (American Pain Society, 2003a). Identify the time interval before drug-specific peak respiratory depression occurs, and then carefully monitor the child’s vital signs during that period to detect respiratory depression. Naloxone is the drug used for reversal of opioids’ adverse effects at a dosage titrated to gradually reduce the effects of the opioids without causing withdrawal symptoms (American Pain Society, 2005, p.71).

- Constipation – stool softener, stimulant laxative, increased fluids and dietary fiber
- Urinary retention – bethanechol, catheterization
- Pruritus – antihistamine, use alternate opioids, or naloxone 0.1–0.2 mcg/kg/hr continuous IV infusion (given simultaneously with opioid) (Greco & Berde, 2005)

When given opioids over an extended period of time, children develop physical dependence, the physiologic adaptation to an analgesic or sedative drug at the peripheral and central neurons. These children may experience withdrawal, the physical signs and symptoms that occur when a sedative or pain drug is stopped suddenly. Severe withdrawal may be seen when children with a physical dependence are given naloxone to treat respiratory depression (Brislin & Rose, 2005). Tolerance is an adaptation to an opioid dosage that results in a shorter duration of drug effectiveness over time. For example, a child might develop physical dependence or tolerance after being in an intensive care setting long term with pain management for life-threatening injuries, multiple surgeries, and invasive procedures. See Table 42–6 for signs and symptoms of withdrawal. Children should be slowly weaned off of opioids over 2 to 4 weeks to prevent withdrawal symptoms. One plan is to reduce the daily dose by 10% to 20% over several days. Clonidine may reduce some symptoms of opioid withdrawal.

**Acetaminophen and Nonsteroidal Anti-inflammatory Drugs**

Nonsteroidal Anti-inflammatory Drugs (NSAIDs) such as aspirin, primarily given orally, are effective for the relief of mild to moderate pain and chronic pain. Drug Guide 42–2 presents recommended dosages of these drugs. They are most commonly used for bone, inflammatory, and connective tissue conditions. An NSAID may be prescribed in combination with an opioid to increase the effectiveness of the narcotic drug, which may ultimately reduce the amount of opioids needed. Acetaminophen is a nonnarcotic analgesic that is used like an NSAID (see Drug Guide 42–3).

**Drug Administration**

Pain from surgery, major trauma, or cancer is present for predictable periods because of the effects of tissue damage. Pain relief should be provided around the clock. Every effort should be made to give the child analgesics without causing more pain. The preferred routes of administration are intravenous, local nerve block, and oral.

Continuous infusion analgesia is recommended for children with persistent severe pain, since it eliminates peaks and valleys in pain control. Analgesics may also be given intravenously on a scheduled basis (e.g., every 3 to 4 hours). Delays in analgesia administration increase the chances of breakthrough pain (pain that emerges as the pain medication wears off resulting in the loss of pain control) and the subsequent anticipation of pain. Giving analgesics on an as-needed basis for acute pain results in the loss of pain control. More medication is often needed to restore pain control than would have been required for continuous infusion analgesia.

<table>
<thead>
<tr>
<th>Table 42–6</th>
<th>Clinical Manifestations of Opioid or Sedative Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System</strong></td>
<td><strong>Signs and Symptoms</strong></td>
</tr>
<tr>
<td>Central nervous system</td>
<td>Irritability, increased wakefulness, tremulousness, hyperactive deep tendon reflexes, clonus, inability to concentrate, frequent yawning, sneezing, delirium, hypertonicity, visual or auditory hallucinations</td>
</tr>
<tr>
<td>Gastrointestinal system</td>
<td>Feeding intolerance with vomiting, diarrhea, uncoordinated suck and swallow</td>
</tr>
<tr>
<td>Sympathetic nervous system</td>
<td>Tachycardia, tachypnea, increased blood pressure, nasal stuffiness, sweating, lacrimation, chills alternating with hot flashes, sweating, fever, salivation</td>
</tr>
</tbody>
</table>

Patient-controlled analgesia. Patient-controlled analgesia (PCA) is a method of administering an intravenous analgesic, such as morphine, using a computerized pump programmed by the healthcare professional and controlled by the child (Skill 13–2). After initial pain control has been achieved with a continuous IV infusion of morphine (basal dose), the child presses a button to receive a smaller analgesic dose (bolus dose) for episodic pain relief. This method of pain management is especially useful for pain control in the first 48 hours after surgery when oral pain management is not possible. Safety features to prevent overdoses include the ability to set the maximum number of bolus infusions per hour and the maximum amount of drug received in a specific time period. Children and adolescents benefit from PCA by receiving continuous pain control and having the ability to control their comfort level with no trauma from injections. Once children can take oral analgesics, PCA is discontinued.

Children (often 5 years and older) selected for PCA should be able to self-report pain with a pain scale and understand that pushing the button will give them medication to relieve pain. Parents are sometimes given responsibility for pushing the injection button for younger children or those with disabilities, but concerns about potential overmedication of children with parent-controlled analgesia have been reported (Greco & Berde, 2005). Careful documentation of bolus doses by a family member are important to prevent overmedication. See “Teaching Highlights: Teaching About Patient-Controlled Analgesia.”

Regional Pain Management
Epidural pain control provides selective analgesia for a body region, and it has become more common for postoperative pain

### ACETAMINOPHEN, NSAIDS AND RECOMMENDED DOSES FOR CHILDREN AND ADOLESCENTS

<table>
<thead>
<tr>
<th></th>
<th>ORAL PEAK ACTION TIME</th>
<th>USUAL ADULT DOSE</th>
<th>USUAL PEDIATRIC DOSE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonopioid Analgesic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetaminophen (0.5–2 hr)</td>
<td>650–1000 mg every 4 hr</td>
<td>10–15 mg/kg every 4 hr</td>
<td>Lacks the peripheral anti-inflammatory activity of other NSAIDs; rectal suppository available</td>
<td></td>
</tr>
<tr>
<td><strong>NSAIDs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin (1–2 hr)</td>
<td>650–975 mg every 4–6 hr</td>
<td>10–15 mg/kg every 4 hr</td>
<td>Do not use in children under 19 years with possible viral illness (National Reyes Syndrome Foundation, 2005); may cause gastric upset and bleeding; rectal suppository available</td>
<td></td>
</tr>
<tr>
<td>Choline magnesium trisalicylate (Tiritisate) (2 hr)</td>
<td>1000–1500 mg every 12 hr</td>
<td>25 mg/kg every 12 hr</td>
<td>Does not increase bleeding time like other NSAIDs; available as oral liquid</td>
<td></td>
</tr>
<tr>
<td>Ibuprofen (Motrin, others) (0.5 hr)</td>
<td>200–400 mg every 4–6 hr</td>
<td>6–10 mg/kg every 6–8 hr</td>
<td>Available as oral suspension</td>
<td></td>
</tr>
<tr>
<td>Naproxen (Naprosyn) (2–4 hr)</td>
<td>250–500 mg every 6–8 hr</td>
<td>5 mg/kg every 12 hr</td>
<td>Available as oral liquid</td>
<td></td>
</tr>
<tr>
<td>Ketorolac (0.75–1 hr)</td>
<td>30 mg IV loading dose, then 15–30 mg every 6 hours</td>
<td>0.25–0.5 mg/kg IV or IM, every 6 hours</td>
<td>IV or IM use only in children less than 50 kg; should not be used for children with bleeding disorder or at risk for bleeding complications; do not use longer than 5 days (Brislin &amp; Rose, 2005)</td>
<td></td>
</tr>
</tbody>
</table>

Drug Guide

ACETAMINOPHEN

Overview of Action
Produces analgesia by unknown mechanism; acts centrally in the central nervous system by increasing the pain threshold by inhibiting cyclooxygenase. Acts in the hypothalamus to cause antipyresis. Used in treatment of mild to moderate pain and of fever. Does not have anti-inflammatory effects. Does not affect bleeding time.

Routes, Dosage, Frequency
Oral or rectal: 10 to 15 mg/kg/dose every 4 to 6 hours, as needed. Do not exceed 120 mg/day in child 2 to 5 years, or 2.6 g/day in child 6 to 12 years. If not prescribed by healthcare provider, seek medical advice after use for 5 days for pain.

Contraindications: Previous hypersensitivity to the drug. Use cautiously in children with G6PD deficiency, renal or hepatic dysfunction, rheumatoid arthritis, poor nutrition, immunosuppression, or bone marrow depression.

Drug interactions: Chronic coadministration with carbamazepine, phenytoin, barbiturates, and rifampin may increase potential for chronic hepatotoxicity. Cholestyramine may decrease acetaminophen absorption.

Side effects: Liver damage with overdose.

Nursing Implications
- Assess: Note hepatic and renal function. Assess pain level or actual temperature prior to administration.
- Administer: Follow dosage directions carefully for different liquid preparations, which have different concentrations. Make sure the parent has the correct dispensing spoon or syringe for liquid preparations. Do not give preparations with aspartame to children with phenylketonuria. Plain or chewable tablets may be crushed and given with fluid; avoid giving with high-carbohydrate meals, which can decrease drug absorption.
- Monitor: Evaluate the response to medication. Periodic renal and hepatic studies may be ordered for patients on long-term therapy.
- Patient teaching: Do not give with other over-the-counter medications such as cold medications which may also contain acetaminophen or aspirin; the dosage will need to be adjusted to prevent overdose. Consult a physician if pain relief is not obtained. Store out of the child’s reach as this medication is a frequent cause of childhood poisoning.

Teaching Highlights

PATIENT-CONTROLLED ANALGESIA (PCA)
- What is PCA? Analgesia means pain relief; you get to control the amount of medicine you receive by using the machine.
- The machine gives the medicine by passing it through the tube that is connected to your intravenous line. When you push the button, the machine pumps pain medicine into the intravenous line to make you feel better.
- The machine limits the amount of medicine you can get to what the doctor orders. You can get any amount up to the maximum by pushing the button repeatedly. The push button will not let you make a mistake if you drop it or roll on it.
- Whenever you feel pain, hurt, or discomfort, push the button to get more medicine. You should be the only one to push the button. Do not let another family member push the button.
- No needles for pain shots are needed as long as the intravenous line is in place.
- The PCA may not relieve all of your pain, but it should make you feel comfortable. Let the nurse know if you think your PCA is not working.
- The PCA will be used until you can take pills or drink liquid pain medicine.

Teaching Highlights

Nonpharmacologic Methods of Pain Management

Complementary therapies are nonpharmacologic methods used for pain management that can be used with analgesics, such as cognitive and behavioral strategies. See “Complementary Care: Complementary Therapies for Pain Control.” One or more of these methods may provide adequate pain relief when the child has low levels of pain. When used with analgesics, complementary therapies often enhance the effectiveness of the analgesic or reduce the dosage required.
Breathing Techniques
Rhythmic deep breaths can be used with distraction or muscle relaxation during a painful procedure, or as a mechanism to reduce stress. Encourage the child or adolescent to take a deep breath, hold it for 5 seconds, and blow out through the mouth, as if to push the tension out or the needle away. Another breathing technique is patterned, shallow breathing. The child is encouraged to take shallow breaths in through the nose and blow out through the mouth while thinking of a particular image. The image could be a train and short breaths could be the “toot, toot” of the train engine.

Hypnosis
Hypnosis is an altered state of awareness facilitating heightened concentration, decreased awareness of external stimuli, increased relaxation, and increased suggestibility. In most cases a therapist uses images and the language of the child to induce relaxation and give posthypnotic suggestions for the relief of anxiety, tension, and pain. Children more easily respond to hypnosis than adults because of their imaginative powers for fun and fantasy. Hypnosis has been successful in assisting children to control acute postoperative pain, procedural pain and stress, and acute pain associated with conditions such as migraine headaches, hemophilia and sickle-cell anemia. Children can be taught self-hypnosis to give them a sense of mastery and control over pain and distress (Richardson, Smith, McCall, et al., 2006).

Application of Heat and Cold
Heat application promotes dilation of blood vessels. The increased blood circulation permits the removal of cell breakdown debris from the site. Heat also promotes muscle relaxation, breaking the pain-spasm-pain cycle. To reduce edema, do not apply heat in the first 24 hours after an injury.

The application of cold is believed to slow the ability of pain fibers to transmit pain impulses. Cold also controls pain by decreasing edema and inflammation, and by causing partial or complete anesthesia or numbness of the skin. When cold is applied, assess the skin for redness or signs of irritation. Take care to prevent thermal injury. Discontinue cold applications immediately if the skin alternately blanches and reddens afterwards.

Electroanalgesia
Also known as transcutaneous electrical nerve stimulation (TENS), electroanalgesia delivers small amounts of electrical stimulation to the skin by electrodes. This electronic stimulation is stronger than the pain impulses and is thought to interfere with the transmission of pain impulses from the peripheral nerves to the spinal cord and brain. TENS may be used for both acute and chronic pain management. The only known side effect is skin irritation at the electrode site.

Acupuncture
A traditional Chinese treatment for pain relief, acupuncture has been gaining greater acceptance in Western medicine. Acupuncture is based on the theory that energy, or chi, flows along channels through the body (meridians) that are connected by acupuncture points. Pain occurs with obstruction of the energy flow, and inserting needles at the appropriate acupuncture points restores the energy flow (Kundu & Berman, 2007). Limited research has been conducted about the use and effectiveness of acupuncture use in children. Because of the use of needles, few children under 10 years will cooperate with the procedure.

Complementary Care

COMPLEMENTARY THERAPIES FOR PAIN CONTROL

Cutaneous Stimulation
Gently rub the painful area, massage the skin gently, and hold or rock the child. Touching competes with the pain stimuli that are transmitted from the peripheral nerves to the spinal cord and brain and may reduce the pain felt by the child. Swaddling and containment in fetal position are both methods to reduce the pain responses of neonates (Huang, Tung, Kuo, et al., 2004).

Sucrose Solution
Concentrated sucrose solutions (2 ml of 24% solution) may be used as a pain relief measure in preterm and term newborns up to 1 month of age. Sucrose in contact with the oral mucosa promotes natural pain relief by activating endogenous opioids (Morash & Fowler, 2004). Give the solution 2 minutes before the procedure, and the analgesic effect of sucrose lasts approximately 3 to 5 minutes. Allow the infant to continue sucking on a pacifier or to breastfeed during the procedure to reduce distress and enhance the effectiveness of the sucrose solution.

Distraction
Distraction involves engaging a child in a wide variety of pleasant activities that help focus attention on something other than pain and the anxiety. Examples of distraction activities are listening to music, singing a song, blowing bubbles, playing a game, watching television or a video, and focusing on a picture while counting. Guided imagery and breathing techniques may be forms of distraction for school-age children and adolescents. Virtual reality games were found to be effective distraction for children with acute burn injuries (Das, Grimmer, Spanmon, et al., 2006). Teach parents how to be distraction coaches and suggest developmentally appropriate distraction activities for the child. Children in severe pain cannot be distracted; but do not assume the pain is gone if a child can be distracted.

Guided Imagery
Imagery is a cognitive behavioral process that encourages the child to relax (often with progressive muscle relaxation techniques) and focus on vivid mental images as if they were real, and to ignore things, such as a painful procedure. For example, help the child to visualize and explore a favorite place, do a fun activity, remember a funny story, or be a superhero. Ask the child to think about all the sights, sounds, smells, tastes, and feelings that will help enhance the image and experience. Imagery has been used successfully by school-age children and adolescents to reduce pain and anxiety associated with surgery (Huth, Van Kuiken, & Broome, 2006).

Relaxation Techniques
Relaxation techniques are used to reduce muscle tension that may aggravate pain. Progressive muscle relaxation is one relaxation technique. Teach children to tense and relax different muscle groups, starting with the hands and feet, and then moving to more central muscles. Ask the child to tense a muscle group for 10 seconds and notice how it feels, and then ask the child to relax the muscle group for 10 seconds and compare the feelings. With practice, the child should be able to detect the difference between tense and relaxed muscles and then to reduce the tension. Relaxation techniques may be combined with rhythmic breathing.

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NURSING MANAGEMENT

NURSING ASSESSMENT AND DIAGNOSIS

Nurses have an ethical obligation to relieve a child’s suffering not only because of the consequences of unrelieved pain but also because appropriate pain management may have benefits such as earlier mobilization, shortened hospital stays, and reduced costs. To provide effective nursing management of children in pain, anticipate the presence of pain and recognize the child’s right to pain control.

When assessing pain in children, keep the following questions in mind:

- What is happening in tissues that might cause pain?
  Assume that children who have had surgery, injury, vaso-occlusive episode, or illness are experiencing pain, since these events also cause pain in adults.
- What external factors could be causing pain? For example, is the cast too tight or is the child poorly positioned in bed?
- Are there any indicators of pain, either physiologic or behavioral?
- How is the child responding emotionally?
- How does the child or parent rate the pain?

Physiologic symptoms such as nausea, fatigue, dyspnea, bladder and bowel distention, and fever may influence the intensity of pain felt by a child. The child’s behavior or responses to pain stimuli may also be affected by fear, anxiety, separation from parents, anger, culture, age, or a previous pain experience.

When working with an infant or child, determine which pain scale is the most appropriate for the circumstance and developmental stage. When using a self-report pain assessment tool, use the same tool each time you assess for pain or for the evaluation of pain management. This makes comparison of assessment results possible. A chronologic record of the child’s pain assessments must be documented along with actions taken to relieve pain, in addition to the follow-up assessments to determine the effectiveness of those actions.

Remember that surgery and trauma can result in multiple sites of pain (incision or laceration, cut or bruised muscles, interrupted blood supply, nasogastric tube placement, insertion sites of intravenous lines). When using pain scales in the assessment of a verbal child, attempt to identify all sites of pain. Then evaluate the intensity of pain at each site.

Examples of nursing diagnoses for children in pain include the following:

- **Acute Pain (abdominal)** related to injury and surgery
- **Anxiety** related to anticipation of pain from an invasive procedure
- **Impaired Physical Mobility** related to pain
- **Nausea** related to opioid pain medication

Other nursing diagnoses are included in the nursing care plan for the child with postoperative pain.

PLANNING AND IMPLEMENTATION

Nursing management involves the following actions to increase and maintain patient comfort: pharmacologic intervention; complementary therapy; monitoring, evaluating, and documenting the effectiveness of pain-control measures to provide optimal comfort; and patient education.

PHARMACOLOGIC INTERVENTION

Give analgesics as ordered by the physician, ensuring that the dose is appropriate for the child’s weight. When administering an opioid by intravenous infusion or PCA, monitor the flow rate and the site for infiltration. Follow institutional guidelines for monitoring vital signs, and use a pulse oximeter or cardiorespiratory monitor in children at risk for respiratory depression. Vital signs (heart rate and blood pressure) may not change in response to effective analgesia when infection, trauma, or other stressors keep them elevated. Make sure analgesic antagonists such as naloxone are available should complications develop. Check for the presence of other side effects of analgesics, such as sedation, nausea, vomiting, itching, urinary retention, and constipation. An alternative opioid or medication to treat the side effects may be ordered when analgesia is needed long term.

Oral NSAIDs are generally ordered for less severe pain or chronic pain. These drugs may mask fever. Be alert to the potential complication of gastrointestinal hemorrhage in critically ill children who have increased gastric acids as a physiologic stress response to pain.

Assess the child for pain 15 to 30 minutes following intravenous pain medication and 1 hour after oral pain medication to determine if adequate pain control was achieved. Evaluate the child’s level of pain frequently to identify any increase in pain intensity. Use information collected from the child and parent, as well as from an appropriate pain scale. Dramatic reductions in pain should occur, although not all pain may disappear. Be certain to record results of pain-control measures to guide future nursing actions. Use a flowsheet to document assessments and medication administration during the postoperative period.

Many children sleep after receiving an analgesic. This sleep is not a side effect of the drug or a sign of an overdose, but the result of pain relief. Pain interrupts sleep, and once pain is relieved, the child can sleep comfortably. However, sleep does not always indicate pain control. A child in pain may fall asleep in exhaustion. Look for other symptoms of pain, such as excess movement or moaning.

Nursing Practice

Naloxone may be used to treat respiratory depression caused by an opioid drug at a dose and slow infusion rate that does not reverse the pain-control effects of the narcotic. A continuous infusion or repeated doses may be needed for severe overdoses.
# Nursing Care Plan

## THE CHILD WITH POSTOPERATIVE PAIN

<table>
<thead>
<tr>
<th>INTERVENTION</th>
<th>RATIONALE</th>
<th>EXPECTED OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Nursing Diagnosis: Severe Abdominal Pain related to surgery and injury</strong>&lt;br&gt;NIC Priority Intervention:</td>
<td>NOC Suggested Outcome: Comfort level: Feelings of physical and psychologic ease</td>
<td></td>
</tr>
<tr>
<td>Pain management: Alleviation of pain or a reduction in pain to a level of comfort that is acceptable to the patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Goal:</strong> The child will report relief (to a level acceptable to the child on a pain scale).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Give analgesic by a pain-free method.</td>
<td>- The child may deny pain to avoid analgesia by painful route.</td>
<td>- The child reports pain relief after administration of analgesia.</td>
</tr>
<tr>
<td>- Have the child select a pain scale and rate the amount of pain perceived before and 30–60 minutes after analgesia is given to ensure pain relief.</td>
<td>- The child’s pain rating is the best indicator of pain. Maintenance of pain control requires less analgesia than treating each acute pain episode.</td>
<td></td>
</tr>
<tr>
<td>- Assess pain control each hour to ensure that the child’s pain is relieved.</td>
<td>- Frequent monitoring identifies inadequate pain control before it becomes significant.</td>
<td></td>
</tr>
<tr>
<td>- Reposition the child every 2 hr to maintain good body alignment.</td>
<td>- New positions decrease muscle cramping and skin pressure.</td>
<td></td>
</tr>
<tr>
<td>- Provide therapeutic touch or massage. Encourage the parents to read a story or play favorite music.</td>
<td>- Complementary therapy reduces stress and enhances the analgesic action.</td>
<td></td>
</tr>
</tbody>
</table>

| **2. Nursing Diagnosis: Disturbed Sleep Pattern related to inadequate pain control**<br>NIC Priority Intervention: | NOC Suggested Outcome: Sleep: Extent and pattern of sleep for mental and physical rejuvenation | |
| Sleep enhancement: Facilitation of regular sleep/awake cycles | | |
| **Goal:** The child will experience fewer disruptions of sleep by pain. | | |
| - Give analgesia by continuous infusion or every 3–4 hr around the clock. | - Pain breakthrough occurs even during sleep and disturbs the healing effects of sleep. | - The child’s sleep is undisturbed by pain. Child sleeps for age-appropriate number of hours per day. |

| **3. Nursing Diagnosis: Ineffective Individual Therapeutic Regimen Management related to self-management of pain control and use of nondrug pain-control measures**<br>NIC Priority Intervention: | NOC Suggested Outcome: Treatment behavior pain control: Personal actions to palliate or eliminate pain | |
| Self-modification assistance: Reinforcement of self-directed change initiated by the patient to achieve personally important goals | | |
| **Goal:** The child and family will effectively use patient-controlled analgesia (PCA) and complementary therapy pain-control measures. | | |
| - Teach the child how the PCA works and when to push the button. | - The child must know that pain can be relieved by pushing the PCA button and how the button works. | - The child’s pain rating stays low. |
| - Teach the family and the child how to use appropriate imagery, distraction, relaxation techniques, and other complementary therapy pain-control measures. | - Complementary therapy pain-control measures reduce the amount of analgesia needed. | - The child and family independently use complementary therapies for pain control. |

(continued)
Become an advocate for the child when the dose or type of analgesic ordered is inadequate. When the child with severe pain has been taking opioids for several days, an increasing amount of the opioid may be needed to produce or maintain the same level of pain relief. The duration of effective analgesia becomes shorter than expected, and breakthrough pain occurs. Review the child’s record to verify that the opioid was given at the appropriate dose and frequency before asking the physician to modify the child’s pain medication.

### Nursing Care Plan—continued

#### THE CHILD WITH POSTOPERATIVE PAIN

<table>
<thead>
<tr>
<th>INTERVENTION</th>
<th>RATIONALE</th>
<th>EXPECTED OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> The child and family will use appropriate analgesia after discharge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ Discuss appropriate pain control to use at home after discharge.</td>
<td>■ The family and child may be anxious about pain management at home.</td>
<td>■ The family understands pain-relief measures for use at home and knows where to call if help is needed.</td>
</tr>
</tbody>
</table>

#### 4. Nursing Diagnosis: Risk for Ineffective Breathing Pattern related to opioid overdose

<table>
<thead>
<tr>
<th>NIC Priority Intervention:</th>
<th>NOC Suggested Outcome:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory monitoring: Collection and analysis of patient data to ensure airway patency and adequate gas exchange</td>
<td>Vital signs status: Temperature, pulse, respirations, and blood pressure within expected range for the individual</td>
</tr>
<tr>
<td><strong>Goal:</strong> The child will maintain adequate ventilations.</td>
<td><strong>Goal:</strong> There is no episode of respiratory depression associated with analgesia.</td>
</tr>
<tr>
<td>■ Verify that correct dose of opioid analgesia is given for the child’s weight.</td>
<td>■ Respiratory depression is a significant complication of opioid analgesia when too much analgesia is given.</td>
</tr>
<tr>
<td>■ Monitor vital signs and depth of inspirations before analgesic is administered and at time of peak drug action.</td>
<td>■ Respiratory depression episode must not progress to respiratory arrest. All opioids act on brainstem center, which decreases responsiveness to CO₂ tension.</td>
</tr>
<tr>
<td>■ Calculate agonist dose ordered by physician to be sure it will reverse respiratory depression, but not counteract effect of analgesia.</td>
<td>■ Valuable time will be saved if agonist is needed for episode of respiratory depression. Complete reversal of analgesia will cause the child to have significant pain.</td>
</tr>
</tbody>
</table>

#### 5. Nursing Diagnosis: Constipation related to opioid administration and decreased motility of gastrointestinal tract

<table>
<thead>
<tr>
<th>NIC Priority Intervention:</th>
<th>NOC Suggested Outcome:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation management: Prevention and alleviation of constipation</td>
<td>Bowel elimination: Ability of gastrointestinal tract to form and evacuate stool effectively.</td>
</tr>
<tr>
<td><strong>Goal:</strong> The child will have minimal constipation.</td>
<td><strong>Goal:</strong> The child has bowel movements at least every 2 days while on opioid pain control.</td>
</tr>
<tr>
<td>■ Palpate the abdomen, and assess bowel sounds and abdominal distention.</td>
<td>■ Signs of constipation must be anticipated and identified.</td>
</tr>
<tr>
<td>■ Request physician order for stimulating laxative and stool softener.</td>
<td>■ Opioids increase the transit time of feces and interfere with bile enzymes needed for evacuation.</td>
</tr>
<tr>
<td>■ Provide fluids of choice to increase fluid intake when IV fluids are decreased.</td>
<td>■ Extra fluids will counteract opioid action of increasing the absorption of water from the large intestine.</td>
</tr>
<tr>
<td>■ Inform family and child that constipation is a side effect of pain medication.</td>
<td>■ Parents can become partners in managing fluid intake and monitoring bowel movements.</td>
</tr>
</tbody>
</table>
COMPLEMENTARY THERAPY

Complementary therapies are the nonpharmacologic methods of pain control that can be used with or without analgesics. One or more of these methods may provide adequate relief of low levels of pain. When used with analgesics, nonpharmacologic techniques often increase the effectiveness of the analgesic or reduce the dosage required. See the “Complementary Therapies for Pain Management” on page 0000. See the “Teaching Highlights: Helping a Child Cope with Pain,” to help parents participate in complementary therapies for their child.
CHAPTER 42

INCREASE COMFORT DURING PAINFUL PROCEDURES

Make every effort to increase the child’s comfort during painful procedures. Topical anesthetics can be used to reduce the pain associated with an immunization, other injection, intravenous insertion, or venipuncture, or the first needle stick of another procedure. Give time for the medication to become effective. Mechanisms for administration of topical anesthetics include the following:

- Vapocoolant sprays can be used for injections.
- EMLA (eutectic mixture of local anesthetics) cream, an emulsion of 2.5% lidocaine and 2.5% prilocaine, is effective if applied 1 to 2 hours before a needle stick procedure on intact skin in children and infants as young as 3 months of age (Weise & Nahata, 2005). See Figure 42–6.
- L-M-X4, 4%, liposomal lidocaine (formerly called ELA-MAX), is effective if applied 30 minutes before needle stick (Fein & Gorelick, 2006).
- With iontophoresis, a patch containing 10% lidocaine hydrochloride and 0.1% epinephrine is placed over the site of the planned needle stick, and a small machine generates electric current to transport anesthetic into the skin. In about 10 minutes anesthesia reaches a depth of about 10.7 mm (Pasero, 2006).
- The Synera anesthetic patch, containing 70 mg of lidocaine and 70 mg of tetracaine, can be applied for 20 to 30 minutes prior to a procedure to anesthetize the skin for superficial venous access and dermatologic procedures in children older than 3 years (Endo Pharmaceuticals, 2006).

LET (lidocaine, epinephrine, and tetracaine) is a topical anesthetic for laceration repair. The LET liquid is applied to a cotton ball and taped to the skin and the LET gel is applied to the skin and covered with an occlusive dressing. The anesthetic works in 20 to 30 minutes (Hatfield, Messner, & Lingg, 2006).

A local anesthetic such as lidocaine buffered by sodium bicarbonate or bupivacaine is often injected subcutaneously to provide analgesia for emergent invasive procedures.

Assemble a pain management kit to promote distraction, imagery, and relaxation in children. Include items such as magic wands, pinwheels, bubble liquid, a slinky spring toy, a foam ball, party noisemakers, and pop-up books. It may also be helpful to include items for therapeutic play such as syringes, adhesive bandages, alcohol swabs, and other supplies from a medical kit. The pain management kit may be especially helpful for distracting children who are being prepared for medical procedures.

DISCHARGE PLANNING AND HOME CARE TEACHING

Children are frequently discharged from the hospital with oral analgesics following surgery, injury, or treatment of acute medical conditions. The child usually leaves the hospital or surgical center pain-free, and the parents may not anticipate pain. Provide information about the child’s need for pain medication.
Pain Assessment and Management in Children

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around the clock for the first 1 to 2 days to prevent the child from feeling pain, and the benefits of pain management in promoting the child’s healing.

Provide guidance to help parents assess their child’s pain, and for school-age children and adolescents to assess their own pain. Teach parents and children about the dosage and frequency of administration and the side effects of the analgesic ordered. Review complementary therapies and encourage children and parents to use the techniques that work best for them.

Remember that many common health problems (otitis media, pharyngitis, and urinary tract infection) have pain as one of the presenting symptoms. Often the only medication prescribed is an antibiotic to clear the infection. This may leave the child in pain for 48 to 72 hours until the antibiotic brings the infection under control. Give parents recommendations for pain control and comfort measures during this period. Review the dose, dosing device, and formulation of acetaminophen used by parents to identify any risk for overdose.

EVALUATION

Expected outcomes of nursing care include the following:

- The child’s pain level is assessed frequently and pain management is effective in improving the child’s comfort.
- The child successfully uses a PCA pump to control acute pain.

CHRONIC PAIN

Some children have medical conditions that cause chronic pain and episodic acute pain, such as rheumatoid arthritis, cancer, headaches, recurrent abdominal pain, and HIV infection. Children and adolescents have reported that chronic and recurrent pain has an impact on the quality of their life and restricts daily living activities such as school attendance, sleep, appetite, social interactions, and recreation (Roth-Isigkeit, Theyen, Stöven, et al., 2005).

CLINICAL MANIFESTATIONS

Physical and psychologic signs and symptoms should be viewed together. The child may perceive pain but not appear to be in pain. Chronic pain of long duration that is persistent or continuous permits physiologic adaptation so normal heart rate, respiratory rate, and blood pressure levels are often seen (Huether & Defriez, 2006). Behavioral indicators of chronic pain may include inactivity, posturing, depression, and difficulty concentrating and sleeping. Chronic pain may be associated with vague and nonspecific symptoms without an easily identifiable cause.

CLINICAL THERAPY

No tools have been developed to assess chronic pain for any child age group. It may be valuable to use multiple tools to assess pain, including a body outline where all pain sites can be marked, a self-report pain scale, and a list of words that describe pain characteristics.

Children with chronic pain need an individualized pain treatment plan with a primary focus on improved function and comfort. Analgesic medications are prescribed, including NSAIDs, acetaminophen, and opioids, often in combination. Complete pain relief may not be possible, and the child may need additional pain medication for acute flare-ups of their condition. Tricyclic antidepressants may be prescribed for their analgesic properties and because depression may be a co-existing condition. Gabapentin, an anti-seizure medication, has efficacy in treating neuropathic pain (Hollan, 2007). Exercise and physical therapy are important to help promote improved function. Complementary therapies are also used.

Nursing Management

When assessing chronic pain in the child, approach pain as if it is the primary problem for attention. View the physical, behavioral, and psychological signs and symptoms together.

- Obtain the history of pain onset, its development over time, intensity, duration, location, what makes it worse or relieves it, and its impact on daily life (sleeping, appetite, school, and social interactions).
- Identify past and other current pain problems in the family. The child may have some learned pain behaviors, such as using pain for attention.
rness that can lead to greater pain intensity. Children who have previously experienced severe pain may be unwilling to cooperate with healthcare personnel (Young, 2005).

**CLINICAL THERAPY**

**Sedation**

Sedation is a medically controlled state of depressed consciousness used for painful diagnostic and therapeutic procedures. **Anxiolysis** is minimal sedation in which cognitive and motor functions may be impaired. **Moderate sedation** (formerly called conscious sedation) occurs with lower doses of sedatives enable the child to maintain protective reflexes, independently and continuously maintain a patent airway, and make an appropriate response to physical stimuli or verbal command. **Deep sedation** is a controlled state of depressed consciousness or unconsciousness in which protective airway reflexes are lost, but the child can respond to painful stimuli. Ventilation is affected in deep sedation (Doyle & Collett, 2006). See Table 42–7. Sedation may be used alone for nonpainful procedures such as a radiographic study. Analgesia must be given in association with sedation for invasive procedures as the sedated child can still feel pain but cannot communicate its presence.

Drugs for sedation include the following (Boswinkel & Litman, 2005):

- Benzodiazepines: diazepam (Valium), midazolam (Versed), and lorazepam (Ativan)
- Hypnotics or barbiturates: thiopental, pentobarbital, methohexital
- Ketamine
- Propofol (Diprivan) or Etomidate
- Analgesics: Fentanyl, Alfentanil

Every healthcare facility should have guidelines for the use of sedation to ensure safe healthcare practices. Health professionals monitoring the child should have specific qualifications, such as training in pediatric advanced life support. The child must be carefully monitored for respiratory depression and signs of deep sedation as the child, so the airway can be protected and ventilatory support can be provided if needed. Antagonist agents must be available for opioids and benzodiazepines when the effects of sedation and respiratory depression need to be reversed (Coté, 2005).

### SEDATION AND PAIN MANAGEMENT FOR MEDICAL PROCEDURES

Children undergo a wide variety of painful diagnostic and treatment procedures in the hospital and in outpatient settings. Procedures such as chest tube insertion, arterial puncture, lumbar puncture, bone marrow aspiration, fracture reduction, laceration repair, insertion of a central or peripheral intravenous line, and burn debridement cause significant pain in children. The anticipation of these procedures causes anxiety and emotional distress that can lead to greater pain intensity. Children who have previously experienced severe pain may be unwilling to cooperate with healthcare personnel (Young, 2005).

**Table 42–7 Characteristics of Minimal, Moderate, and Deep Sedation**

<table>
<thead>
<tr>
<th>Assessment Factors</th>
<th>Minimal Sedation</th>
<th>Moderate Sedation</th>
<th>Deep Sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway</td>
<td>Maintains airway independently and continuously</td>
<td>Maintains airway independently and continuously</td>
<td>Unable to maintain airway</td>
</tr>
<tr>
<td>Cough and gag reflexes</td>
<td>Reflexes intact</td>
<td>Reflexes intact</td>
<td>Partial or complete loss of reflexes</td>
</tr>
<tr>
<td>Level of consciousness</td>
<td>Responds to verbal stimuli</td>
<td>Easily aroused with verbal or gentle physical stimulation</td>
<td>Not easily aroused, responds to repeated or painful stimuli</td>
</tr>
</tbody>
</table>

Whenever sedation is given, be prepared to monitor the child's vital signs and provide advanced life support if the child should progress to deep sedation. The following equipment should be immediately available: suction apparatus, a bag-valve mask for assisted ventilation with capability of 90% to 100% oxygen delivery, and an oxygen supply (5 L/min for more than 60 minutes). Antagonists to sedative medication must be premeasured and ready to administer.

Nursing management. When the child receives sedation, nursing assessments to monitor the child's status include visual confirmation of respiratory effort, color, and vital signs. Pulse oximetry and other technology may be used for monitoring, but the equipment must not replace visual assessment. Vital signs must be checked every 15 minutes until the child regains full consciousness and level of functioning. If light sedation progresses to deep sedation, maintain a patent airway, and check vital signs every 5 minutes.

Criteria for discharging the child after sedation include the following:

- Satisfactory and stable cardiovascular function and airway patency.
- Easily arousable, with protective reflexes intact.
- Adequate hydration.
- Able to stand and walk without assistance, or the infant holds the head up and sits up unassisted if old enough to do so.
- Discharge status is the same as admission status.

**LEARNING OUTCOMES**

42.1 Identify the physiologic and behavioral consequences of pain in children.

1. Physiologic consequences of acute pain:
   - Tachycardia and rapid shallow breathing.
   - Inadequate cough.
   - Inadequate lung expansion.
   - Depressed immune response.
   - Increased perspiration and loss of electrolytes and fluids.
   - Increased intestinal secretions.

2. Behavioral consequences of acute pain:
   - Short attention span.
   - Irritability.
   - Facial grimacing.
   - Posturing, protecting painful area, immobility.
   - Lethargy or withdrawal.
   - Sleep disturbance.

42.2 Assess the developmental abilities of preschool children to perform a self-assessment of pain intensity.

- An understanding of more and less
- Identifying a number larger than another
- Placing pieces of paper of different sizes in sequential order by size

42.3 Describe the nursing assessment and management for a child receiving an opioid analgesic.

- Use oral and intravenous route, if possible.
- Identify the time of peak drug effect and monitor child’s vital signs to detect respiratory depression.
- Observe for nausea, constipation and itching.
- Have naloxone (Narcan) available for treatment of respiratory distress.

42.4 Explain the physiology that enables nonpharmacologic (complementary) methods of pain control to be effective.

Nonpharmacologic methods of pain control are effective in children due to the Gate Control Theory and decrease the transmission of pain impulses to the brain. The use of methods such as nonpainful touch and massage stimulate the larger A-delta fibers and cause the substantia gelatinosa in the dorsal horn of the spinal cord to “close the gate.” This decreases the transmission of pain impulses to the brain.
LEARNING OUTCOMES

42.5 Assess children of different ages with acute pain and develop a nursing care plan that integrates pharmacologic interventions and developmentally appropriate nonpharmacologic (complementary) therapies.

Interventions common to all ages:
1. Assess pain frequently.
2. Anticipate need for pain medication.
3. Monitor vital signs.

Pharmacologic and nonpharmacologic interventions by age group:

1. Infants and toddlers:
   ■ Administer oral or intravenous medications around the clock.
   ■ Hold, swaddle, rock, or provide nonnutritive sucking.
   ■ Allow infant to suck sucrose solution.
   ■ Have toddler blow bubbles.

2. Preschooler:
   ■ Use distraction techniques with the use of a magic wand, pinwheel, or noise maker.
   ■ Allow child to watch appropriate TV shows or videos.

3. School-age child and adolescent:
   ■ Instruct in use of PCA or epidural until able to take oral medications.
   ■ Use hypnotherapy if child is able to cooperate.
   ■ Engage child in breathing techniques for relaxation.
   ■ Use guided imagery, visitors, TV, radio, tapes, or CDs for distraction.

42.6 Develop a nursing care plan for assessing and monitoring the child having sedation and analgesia for a medical procedure.

1. Explain procedure to the child and parents.
2. Employ nonpharmacologic methods such as distraction and guided imagery to decrease anxiety.
3. Ensure that emergency equipment and agonist medications are available.
4. Monitor the depth of sedation during the procedure; be prepared to open the child’s airway and assist ventilations if deep sedation occurs.
5. Use pulse oximetry and a cardiorespiratory monitor during procedure; monitor vital signs.
6. After procedure is completed, visually monitor vital signs and level of consciousness until child is stable and awake.

CRITICAL THINKING IN ACTION

A 12-year-old boy, Kevin, is recovering from a 4-wheeler crash at a local children’s hospital. He was riding the 4-wheeler unsupervised and without permission while his parents were at work. He suffered three broken bones, several lacerations, and an abdominal injury that required surgery. His parents are very worried about his injuries and at the same time angry with him for not following the rules. Kevin appears expressionless in his hospital bed, but cries and grimaces at any slight movement. When asked on a scale of 1–10 (10 being the most pain) how much pain he is feeling, he says a 10. His parents are reluctant to let him have any pain medications because they fear he may become dependent on the medication. His father states that Kevin should be a man and tolerate the pain, and he thinks enduring the pain will teach him a lesson about responsibility. The nurse explains that pain management is necessary to improve Kevin’s healing, help him mobilize sooner, and potentially shorten his hospital stay. She explains the physiologic consequences of ineffective pain management and discusses how the medication will help him sleep and rest. She explains that some of pain medications can be addicting, but the chances of Kevin becoming addicted to pain medications for this injury are extremely rare. She also reviews the nonpharmacological methods of relieving pain. The parents are still reluctant to the medications, but agree to conform to the doctor’s orders.

1. What are some of the potential physiological consequences to letting Kevin suffer pain?
2. What are some examples of opioid analgesics appropriate for Kevin?
3. What are some examples of NSAIDs available to Kevin?
4. What are the signs of tolerance to the prescribed opioid?

See MyNursingKit for possible responses.

REFERENCES


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Evidence-based strategies for the pharmacological management of pediatric pain during minor procedures in the emergency department. Topics in Emergency Medicine, 28(2), 129–137.

