The first Global Day Against Pain on October 11, 2004, focused attention on the worldwide undertreatment of acute and chronic pain. It also called for pain control to be recognized as a major public health issue and human right (Bond and Breivik 2004; Brennan and Cousins 2004). This year, the IASP Global Day Against Pain in Children on October 17, 2005 will focus upon children’s pain. There is an urgent need to improve children’s pain treatment, both for humanitarian and ethical reasons and because pain affects not only children’s health but potentially may contribute to their disability and suffering later in life (Walco et al. 2003; Franck 2002).

The United Nations Convention on Rights of the Child recognizes that children are a vulnerable segment of the population, and are entitled to special consideration in all respects, including health care. Despite this recognition, inadequate prevention and relief of children’s pain is still widespread. This failure reflects shortcomings in recognizing children’s ability to perceive, respond to, and be harmed by pain; exaggerated fears of the side effects of analgesics and anesthetics in children; and lack of resources to provide training for clinicians and treatments for children.

This issue of *Pain: Clinical Updates* discusses the imperative for the treatment of pain in childhood and provides a summary of some accessible guidelines and resources. It draws upon a Position Statement (www.iasp-pain.org/GlobalDay-2005.htm) prepared by the Council of the IASP Special Interest Group (SIG) for Pain in Childhood, and is intended to support a year-long effort by the IASP and the SIG to improve the global standard of children’s pain management. Although a great deal is now known about the physiology and management of children’s pain (McGrath 2005), many barriers hinder the application of that knowledge to clinical care. Research is urgently needed to clarify the many aspects of children’s pain and its management that remain poorly understood.

**Children Suffer Pain from Many Causes**

Few studies reliably document the prevalence of pain in children. Research on the neurobiology of pain in early development has shown that infants, and children of all ages, have the capacity to perceive pain (Fitzgerald 2005). We must therefore assume that any experience expected to be painful for an adult is likely to cause pain in infants and children. Indeed, many factors increase the impact of pain in children, who are also often exposed disproportionately to pain.
Everyday pain. Minor bumps and bruises are very common in children in the course of active play and sport (Fearon et al. 1996). They are usually not medically significant, nor can they all be reasonably avoided, but each episode provides an opportunity for learning about how to cope with pain, either magnifying or reducing the distress (Kutner 1996; Zeltzer and Schlank 2005).

Short-term pain lasting minutes, hours, or days may be caused by illness, trauma, or medical procedures such as immunization, blood tests, and surgery (Finley and McGrath 2001). Equivalently intrusive events are reported to be more painful by younger than by older children (Goodenough et al. 1999). Children are generally unable either to refuse or to rationalize painful experiences, so they suffer especially from invasive diagnostic procedures. There have been improvements in management of acute pain in some pediatric hospitals and units (Young 2005), but pain management techniques in many centers around the world have not progressed in the past 20 years. Advances in health care, such as new knowledge of pain prevention strategies, have not been consistently translated into decreased prevalence or intensity of pain experienced by children in hospitals (Hain et al. 2001; Ellis 2002).

Recurrent pain in childhood arises from complex and multifaceted causes. Stomachaches, headaches, limb pain (“growing pains”), and chest or back pain are experienced occasionally to frequently by up to 30% of children (Perquin et al. 2000).

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<th>Table 1. Selected reviews of children’s pain&lt;sup&gt;a,b&lt;/sup&gt;</th>
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<td><strong>Topic</strong></td>
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<sup>a</sup> Reviews published between 1995 and 2005.


<sup>c</sup> In addition to reviews published within the comprehensive reviews above.
when such pain seems relatively minor in intensity, it may interfere with school and family life, causing both emotional and financial stress (Hunfeld 2001). So-called “functional” pains that lack an obvious pathological basis may be caused by subtle neurophysiological dysfunctions that are not easily characterized by everyday medical investigations, and thus are frequently minimized by clinicians (AAP 2005).

Children with chronic pain experience high levels of pain-associated disability (Bursch et al. 1998). We still do not fully understand the risk factors for development of chronic pain in childhood, but prior untreated pain must be regarded as a likely candidate. Children’s chronic pain affects and is influenced by family factors (McGrath and Hillier 2003). Children with chronic pain may be at higher risk for chronic pain in adulthood (McGrath 1999).

Children with terminal illness experience pain from the cumulative effects of progressive disease, invasive procedures, treatment, and psychological distress. Special challenges arise in managing their pain and the side effects of pain treatment in the home setting (WHO 1998; McGrath and Brown 2003; Galloway and Yaster 2000).

**Developmental Consequences of Early Pain Experience**

Pain experience very early in life may influence nociceptive processing over the rest of the lifespan (Fitzgerald 2005). Very low birth-weight infants may spend months in the neonatal intensive care unit, and they are particularly vulnerable to pain from recurring procedures due to the immaturity of their central nervous system and the rapid brain development occurring in the last trimester of fetal life (Anand 2000). Clinical studies suggest that prolonged untreated pain suffered early in life,

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**Table 2. Clinical practice guidelines for children’s pain**

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<tr>
<th>Topic</th>
<th>Reference</th>
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<tbody>
<tr>
<td>Assessment</td>
<td>Recognition and assessment of acute pain in children (Royal College of Nursing 1999) Recognition and assessment of acute pain in children (Royal College of Paediatrics and Child Health 2001)</td>
</tr>
<tr>
<td>Analgesia</td>
<td>Safe sedation of children undergoing diagnostic and therapeutic procedures (Scottish Intercollegiate Guidelines Network 2004)</td>
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independent of morphine exposure, may have long-lasting effects on the individual pattern of stress hormone responses in vulnerable infants (Grunau 2004). These effects may extend to persistent changes in nociceptive processing, with implications for future pain experience (Grunau 2002; Andrews and Fitzgerald 2002; Peters 2005; Schmelze-Lubiecki et al. 2005). One of the very few studies of the long-term consequences of critical care admission on children found more medical fears and a greater prevalence of symptoms suggestive of post-traumatic stress responses among children who had received a greater number of invasive procedures in the pediatric intensive care unit (Rennick et al. 2002). Infants and children receiving critical care are also at risk for severe abstinence symptoms when analgesics are tapered too abruptly (Franck et al. 2004).

**Detecting When Children Are in Pain**

Children’s pain can be difficult to recognize. Children may lack the cognitive ability or vocabulary to relate or describe their pain in a way that their caregivers easily understand. Children use many coping strategies to deal with pain, including play and sleep, that can mislead the untrained observer to falsely conclude the child is not in pain. We have now learned how best to ask young children about their pain, in ways that encourage them to describe what they are feeling and reduce their fear of being subject to more pain such as injections as a result of their disclosure. Many developmentally appropriate pain self-report tools are available for children 4 years of age and older. Specific assessment tools have been developed to infer pain from behaviors or physical signs in very young or disabled children unable to report their own pain (Finley and McGrath 1998; Franck et al. 2000; Breau et al. 2001; Hunt et al. 2004). If these proven methods of asking children or observing pain signs were used routinely, much of children’s pain could be promptly recognized and effectively treated.

**Treating Children’s Pain**

Most pain can be prevented, treated, or at least reduced using inexpensive pharmacological, psychological, and physical techniques (see Table 1). Yet even in developed countries, deficiencies in children’s pain management persist (Ellis 2002; Jacob and Puntillo 2000; Johnston 2005), and it is certain that most children in the developing world receive inadequate pain care.

A substantial body of research shows the effectiveness of cognitive and behavioral techniques, such as information giving, paced breathing, progressive muscle relaxation, hypnosis, and imagery for reducing children’s pain and distress from invasive procedures (Kuttner and Culbert 2003). Despite this evidence, few children and parents are taught anxiety-reducing skills to prevent or reduce pain during and after procedures.

There is broad clinical experience and considerable research on pharmacological treatment for children’s acute pain in pediatric specialty settings in developed countries, although data on chronic pain is sparse. However, this knowledge is

<table>
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<th>Level</th>
<th>Action</th>
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<tr>
<td>Global</td>
<td>Extend educational opportunities for health care providers in under-resourced areas. Where pain relief is limited by drug availability, advocate for improved funding and for reduction of regulatory barriers.</td>
</tr>
<tr>
<td>National</td>
<td>Where pain relief is limited by drug availability, advocate for improved funding and for reduction of regulatory barriers. Provide awards to local health care providers who make significant contributions to relief of children’s pain. Encourage public education on pediatric pain. Challenge incorrect public information on pain treatment.</td>
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<tr>
<td>Locally</td>
<td>Adopt policies and standards for pain prevention and relief. Make pain assessment and treatment protocols for best practice accessible to all (see Table 2). Provide distraction supplies (toys, music, videos) together with training in their use in all settings where children undergo painful procedures. Work toward the establishment of interdisciplinary acute and chronic pediatric pain services or access to specialist expertise within all acute medical care settings to provide direct services, expert consultation, and education.</td>
</tr>
<tr>
<td>Individually</td>
<td>Ensure regular, developmentally appropriate pain assessment. Ensure a quick response to reports of pain. Provide written and/or pictorial information about pain management to children and parents. Provide training for parents to show them how they can best support their child’s pain relief. Consistently provide behavioral, cognitive, and physical interventions to help children cope with procedural pain. Minimize needle procedures (avoid or combine blood sampling whenever possible). Commit to the use of pain-free routes for giving medication. Whenever possible, administer topical anesthetics for intravenous placement or injection.</td>
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Table 3. Suggested priorities for action in the Global Year Against Children’s Pain
applied inconsistently in North America, Europe, and other developed countries, and hardly at all in many low and middle-income countries of the developing world (Forgeron et al. in press).

Health care providers and parents often worry that pain medication will be dangerous for children. In fact, developmental concerns with analgesic treatment are minimal once the neonatal period is past, other than dosing appropriate for the size of the child. There is no evidence that children become addicted to strong opioids that are prescribed appropriately for pain treatment.

**We Do Have the Ability to Treat or Prevent Most Pain: Why Don’t We Do So?**

Proper prevention and management of children’s pain are prevented by inadequate education of health professionals and parents about children’s pain management, and by a lack of experts to provide consultation and specialist treatment. Research and drug development aimed at improving children’s analgesia are limited. In some countries, inexpensive pain drugs are unavailable because of importation or distribution restrictions (Joranson), or else they are not provided in suitable formats. For example, morphine may be supplied only as 30-mg sustained-release tablets, which are generally unsuitable for small children. In other cases, the drugs are available but are used only for cancer pain or palliative care, or only in adults. Pharmaceutical companies must provide suitable pediatric drug preparations, such as topical creams, oral or intranasal sprays, and better-tasting liquids.

**What Do We Need to Do?**

Children’s pain must become a priority for all health care professionals. Health professionals must be trained in pain measurement and treatment techniques that are suitable for infants and children. Individual clinicians caring for children have a responsibility to access and apply currently available research and best clinical practice. Most importantly, consumers (children and their parents) should expect that pain will be assessed and managed. Models of national and institution-wide commitment to pain prevention and management do exist (JCAHO 1999; Weisman 2001), and Table 2 provides references to relevant clinical practice guidelines. Table 3 includes suggestions for individual and institutional action. Health services officials must commit their institutions to prevent and relieve pain whenever possible, wherever it occurs. They must initiate programs to ensure that appropriate medications and nonpharmacological measures are available and that pain is assessed, prevented, and treated. Governments around the world must affirm that children have the right to the best pain management possible, and they must put into place mechanisms to see that this right is realized. They must provide greater funding for research on children’s pain, along with systems and resources to translate research findings into practice.

*Children’s pain matters—for the child, for the family, and for society.*

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