Pain, Pain, Go Away:
Helping Children With Pain

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Second Edition

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INTRODUCTION

Pain, Pain Go Away was written to teach parents about pain in children and to help them to ask for better care for their child. Parents are important because they are experts on their child's pain and the best advocates for their own child. Children are sometimes too young, too sick or too afraid to say how much pain they have. At these times, parents are the best judges of their children's pain. Parents know more about comforting their own children than anyone else. Parents can teach children to relax or to distract themselves. Parents are also able to ask for better pain management when their children are suffering.

Pain is a part of life. Sometimes it is useful and can be a warning of danger, injury, or illness. Children learn to avoid danger because of pain. A baby's crying warns parents to find out what is wrong. The very rare children who cannot feel pain often cause themselves serious harm. However, some pain, such as pain from surgery or from a needle, is not a warning. It serves no useful purpose.

Pain should be treated. Untreated pain causes anxiety, depression, irritability and exhaustion. Pain can also cause problems with eating and sleeping. Pain may cause children to act in "babyish" ways.

Pain causes changes in the brain that make future pain worse. Pain can slow healing, disrupt treatment and may cause medical problems. Pain that is not controlled makes children afraid.

Until recently, very few health professionals were well educated about pain in children. Because of this, professionals may be unaware of the latest research on pain.

WHAT IS PAIN?

Physical pain is an unpleasant feeling from:

- physical injury
- damage (a cut or an injection)
- disease

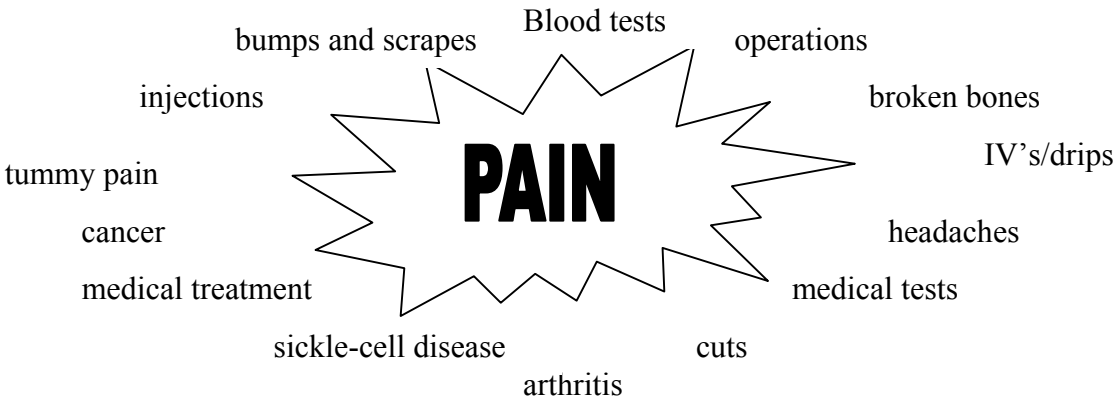
However, some pain, such as pain from a migraine headache, may happen without any obvious damage to the body. As well, sometimes we cannot determine the cause of the pain a child is feeling.

Sometimes we use the word pain to refer to emotional or psychological distress. This pain is important, but this booklet deals only with physical pain.

Some doctors used to think that infants and very young children did not feel pain. We now know that children of all ages feel pain. Even very premature babies feel pain. In fact, young babies may be more sensitive to pain than older infants because the nerves that control pain are not fully developed. Disabled children feel pain. Young children, babies and severely disabled children may be more likely to have their pain not recognised and not managed because they cannot tell people about their pain.

Sources of pain

Many different things cause pain. Injuries are the most common cause of pain in children. Medical tests and treatments can hurt. Surgery causes pain. Some diseases can cause pain.



Children often have headaches, tummy pains/stomach aches, or leg pains that come and go. The pains may be a sign of serious disease or may be painful but harmless. If you don't know what is causing these pains, it is best to see a doctor.

Stress can trigger headaches and tummy pains/stomach aches. However not all headaches and tummy pains are from stress. Pain that comes from stress is real and hurts just as much as other pain.

MEASURING PAIN IN CHILDREN

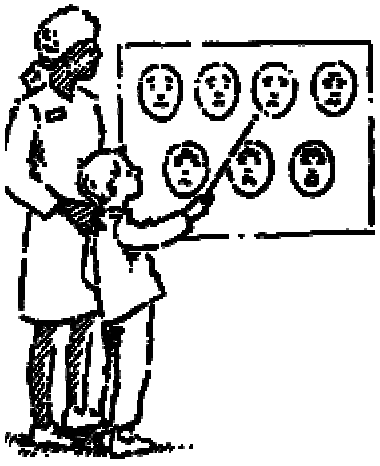
There are three ways to find out how much pain a child has:
- what a child says,
- what a child is doing,
- how the child's body is reacting.

To find out about these, we must ASK and LOOK.

ASK
- the child (using their own words or using a pain scale to show how much pain they have)
- the parents
- the nurses/doctors or other caregivers who know the child best

LOOK AT
- what the child is doing (body posture, facial expression, protecting sore part)
- how the child's body is reacting (changes in heart rate, blood pressure, oxygen level)
- how the child's behaviour has changed (is he or she more quiet or more irritated than usual?)

Children **can** tell people about their own pain if they are asked in a way they understand. Parents often have a good idea about their child's pain too. If the nurse or doctor knows the child well they might have a good idea about the child's pain. However they generally aren't as good at estimating pain as the child or parents.



What a child says

The best way to measure pain is to ask the child how much he or she hurts. Only the child with pain knows how bad the pain is. Children should be asked about pain in ways they understand and encouraged to tell how much pain they have. Children under 4 years of age can often tell us that they are hurting. However, they usually cannot say how much pain they feel. Over 4 years of age, children can often say how they feel by using simple ways of measuring pain like the Poker Chip method. With the Poker Chip method, children are asked to say how many "pieces of hurt" they feel. One chip is "just a little hurt." The second chip is "a little more hurt." The third chip is "more hurt." The fourth chip is "the most hurt you could have." The child is asked how many pieces of hurt he or she has. What the child says is checked by saying, for example, "Oh, that means you have a little hurt."

For children over 5 years of age, drawings of pain faces are often best. Children point to a face on the scale that matches how they feel. The child should be trained by asking how he or she would feel following minor pains, such as a bump or a mosquito bite. The child is then asked about how much a more serious pain would hurt.

Children who are 6 or 7 years old can use words such as “no pain”, “a little pain”, “a medium pain”, “more pain” and “the most pain possible”. Slightly older children can also say how much they are hurting by rating their pain on a 0-10 (or 0-100) scale. Zero is no pain and 10 (or 100) is the worst possible pain.

What a child is doing

Often children show their pain by crying, making a “pain” face, or by holding or rubbing where it hurts. This is typical of short, sharp pain, like needle pain or pain from a bump. Longer-lasting pains may cause less obvious behaviours such as changes in activity, sleep or eating. Below is the Parent’s Postoperative Pain Measure that contains a list of these types of behaviours. Changes in more than 6 of these behaviours in a child suggests that they may have pain. However, a child’s behaviour can change for reasons other than pain. For example, many of these behaviours can occur because of depression.

Parents’ Postoperative Pain Measure

BEHAVIOUR ITEM	**YES**	**NO**
1. Whine or complain more than usual		
2. Cry more easily than usual		
3. Play less than usual		
4. Not do the things s/ he normally does		
5. Act more worried than usual		
6. Act more quiet than usual		
7. Have less energy than usual		
8. Refuse to eat		
9. Eat less than usual		
10. Hold the sore part of his/ her body		
11. Try not to bump the sore part …		
12. Groan or moan more than usual		
13. Look more flushed than usual		
14. Want to be close to you more …		
15. Take medications when normally refuses		

A child can have pain and not show it very clearly. For example, a child may have pain and continue to play. That is why it is so important to ask the child and to look for both obvious and subtle changes in behaviour.

How the child's body is reacting

Heart rate, blood pressure, skin sweating and the amount of oxygen or carbon dioxide in the blood change in response to short sharp pain. However, these changes usually don't last long. These biological measures can also change because of anxiety, hunger or because of some medical conditions.

Measurement of pain in babies, especially sick premature babies, is perhaps the most difficult of all. However, in the past 10 years major advances have been made in pain measurement in babies. Pain measurement systems that involve changes in heart rate, changes in the amount of oxygen in the blood and changes in facial expressions are the most widely used.

Although there are problems with this sort of measuring, pain should be measured regularly and recorded in the child's medical chart.

PAIN MANAGEMENT

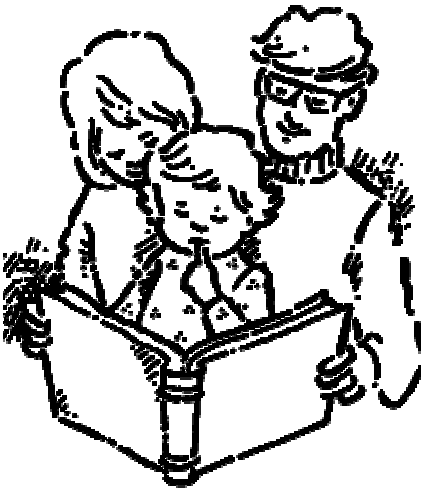
When we know ahead of time that something will be painful, we should do everything we can to prevent the pain. For example, needle pain can be prevented with a local anaesthetic cream on the skin. Some surgical pain can be avoided by giving an anaesthetic block or pain relieving medicine before surgery.

It is usually better to use more than one treatment for serious pain. This might include a combination of different drugs given in different ways as well as psychological methods.

Treatment of short sharp pain or procedure related pain

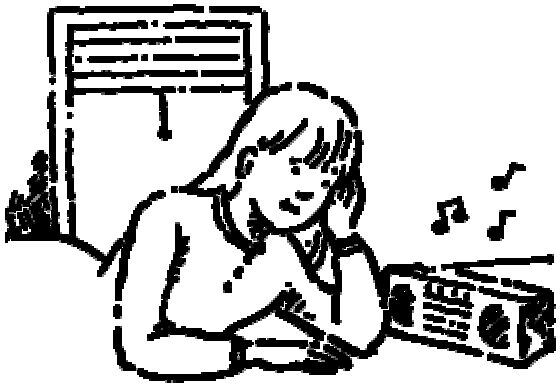
Needles to give medicine, to give intravenous fluids, or to take blood or spinal fluid often cause short, sharp pain. Some children say that finger sticks/pricks hurt as much as bigger needles. Other procedures, like putting in or removing tubes, changing dressings, or other medical tests, can also cause short, sharp pain.

Psychological and physical methods



Things people can do to help with the pain:

- Having a **parent** or other special person present. Children often feel more secure with their parents there.
- Give simple, accurate **information** about what is going to happen. Explain things slowly, in small bits, and repeat as often as needed.
- Children should be helped to **ask questions** and **express feelings**.
- Give a child some **control** over treatment. For example, a child who decides whether to sit in a chair or a lap for an injection will probably feel less pain than a child who has no choice.
- **Deep and steady breathing** can help reduce pain and gain self-control.
- **Distract** the child from the pain. Talking, video games, breathing exercises, blowing bubbles, television, music, pop-up books, reading and being read to are all distractions.
- Use the child's **imagination** to change from being anxious and frightened to being relaxed and calm. You can help by focusing the child's attention on a familiar past activity, or telling or reading a favourite story.
- Use **suggestions** for pain relief such as, "Let the pain just drain away down and out of your body into the bed and away...good...that's it, let it go." Use the child's own language and the child's favourite activities or experiences.
- **Play** or be silly. Children relax and forget their worries when they play.



- **Relaxation** is useful for adolescents. A psychologist, nurse or other health professional can teach special techniques for relaxation, which can reduce anxiety, nausea and vomiting, and pain.
- **Comforting touch.** This includes stroking, swaddling, holding, rocking, caressing, cuddling and massaging. Cuddling is nature's own pain remedy.
- **Heat, cold and vibration** can relieve pain. Ice wrapped in a cloth eases some disease and procedure pain. Heat is useful for muscle pain. Vibration, either by gentle tapping or some other mechanical method, can block pain.
- **Positive affirmations.** Reminding the child "you are doing great".

There are many simple pain control methods we can teach children. Once they learn the methods, children below about 8 years of age will usually need a parent or someone else to coach them during painful procedures. Older children often can use these techniques on their own. Psychological and physical methods alone will not usually be enough for strong pain.

Things that don't help with the pain and can make it worse:

- **Lying** to children about painful procedures.
- **Ridiculing or making fun** of the child by saying things like "Only babies cry".
- Using needles as a **threat**. Lies and threats teach children to distrust and be fearful.
- **False reassurance**. Saying "it won't hurt at all" when you know it will.
- Having **very high expectations** of the child. It's difficult enough for children to cope with pain without being afraid they are not living up to family standards of "'bravery"' or "machismo".
- **Talking about the feelings too much**. Saying "I know you're worried/scared…" may lessen the child's coping ability.
- **Focussing too much** on the pain or potential pain. Saying "it will really hurt a lot…" is a bad idea. Firstly, it might not; secondly, it encourages children to expect the worst.

Medicines

Children fear needles. These days we can mostly avoid using needles, especially for giving pain medicine.

Pain Medicines take away or prevent pain

There are many different ways medicines can be given that are **not** by injection:

by mouth (orally)
into the bottom (rectally)
into a vein through a previously inserted catheter (intravenously)
breathed in (inhaled)
through the skin (transdermally)

Other times, we need to use a needle, such as when placing an intravenous (IV or drip) in a vein, when placing medicine just under the skin (subcutaneously), or doing a spinal tap (lumbar puncture) or regional block (epidural or caudal block).

We know that pain results any time a needle pierces the skin. Special creams are available that numb the skin and make the needle painless. There are different types of creams available: EMLA[1], Ametop[2] or AnGel[3] – they all work in similar ways. The cream is put on the skin before the procedure at the hospital or at home. The cream is then covered with an airtight bandage. It's really important to plan ahead to get the best results from the numbing cream.

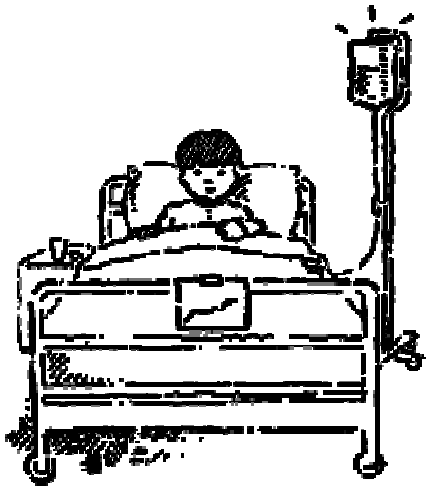
If there isn't time for a numbing cream to be used, a local anaesthetic can be injected using a small needle and slow injection.

Sometimes the procedure is more involved and local anaesthetic alone will not give enough pain relief. A bone marrow biopsy for a child with cancer is a good example. In these situations stronger pain medicine **and** sedation should also be used. A specially trained professional (often an anesthesiologist/anaesthetist or a specially-trained pediatrician) will give carefully adjusted doses of intravenous medicine to make the child very sleepy and pain free.

Some children, who are particularly anxious about procedures, may benefit from a mild sedative and pain medicine at the time of the procedure. In addition, they may be helped by treatment of their fear by a psychologist or other specialist.

Treatment of postoperative pain

Most surgery causes some pain. Some surgery is very minor and requires less pain medicine. Other surgery needs active care to prevent and to treat pain. No matter what kind of surgery a child has, most postoperative pain can be prevented or, at least, reduced. There are many medicines and methods that can be used to treat pain but there are just a few simple things to remember.



The psychological and physical methods used for short sharp pain are useful for postoperative pain. They can make a child much more comfortable. However, most postoperative pain also requires pain medicines.

Medicine for pain should be given on a regular schedule, such as every 4 hours. Sufficient medicine should be given often enough to control the pain. The amount of pain changes rapidly over the first few days after surgery. Therefore, the amount of pain should be checked often. Otherwise, the child may get too much or too little medicine.

Pain medicine should be used to keep pain away, not to "catch up" with pain that is already severe.

Medicine for pain from small operations can usually be given by mouth. Acetaminophen (e.g., Tylenol, Panadol; paracetamol) is most commonly used for minor pain and is safe and effective. The dose for average-sized children of different ages is printed on the package. Acetaminophen can also be given by rectal suppository. Acetaminophen does not make children sleepy and can be taken as a regular dose as long as there is any pain. Once you have given the correct dose of acetaminophen for the size of the child, it does not help to give more. It may be dangerous to do so.

Anti-inflammatory drugs, such as ibuprofen, are useful after some surgery, and may be suggested as well as, or instead of, acetaminophen. If acetaminophen or anti-inflammatory drugs are not strong enough, the doctor may prescribe an opioid, like morphine. Opioids are sometimes called

“narcotics”, but opioid is the correct term. Opioids are pain-relieving medicines such as morphine, codeine and similar drugs. They should usually be given regularly, such as every four hours. Opioids, anti-inflammatory drugs, and acetaminophen work in different ways. Together they are more effective than any one alone.

Many parents worry about their child having opioids. They may fear that a child who takes opioids will become addicted or learn to rely on drugs. Some parents are afraid that opioids will not work later if they are given too early. These concerns are **not** supported by fact and should not interfere with pain management. Addiction is extremely rare in people taking pain medicine to relieve pain. Opioids are safe if used for pain relief under a doctor’s direction. Strong pain requires strong medicine.

Codeine and morphine doses can be adjusted. Usually, after the first few days, as the body heals, the pain will start to decrease. The amount of codeine or morphine can be less. Usually, the child becomes sleepy and drowsy if more opioid than needed is given.

Children must understand that their pain will be taken seriously. They must know that their parents, nurses and doctors will do their best to stop the pain. They must also know that the pain treatment won’t be worse than the pain itself. In other words, it is not a good idea to give pain medicine by injection.

Severe pain, such as from major surgery, may need other methods of pain control. An intravenous (IV) is a tube connected directly to the vein. A continuous infusion or flow of a strong pain-relieving medicine, such as morphine, can be given through an IV to keep a constant level of the pain medicine in the child’s blood. The nurse adjusts the flow as the pain level changes.

Patient controlled analgesia (PCA) uses a computer-controlled pump to deliver medicine through the child’s IV. When the child starts to feel pain, he pushes a button and receives a small dose of medicine. Children as young as five years of age can use this method.

A “regional” block with a local anesthetic can be used to control postoperative pain. Regional blocks cause numbness to control pain in a specific part of the body. These are used only for some types of surgery, but can be very helpful. A caudal block numbs the lower half of the body. It is used for hernia repairs, circumcisions and some types of leg or foot surgery. An epidural block is similar and gives continuous pain relief for several days. Various pain medicines can be used in an epidural.

Other nerves can also be blocked or “frozen” at the time of surgery. Local anesthetic injected into the incision (the cut made for the operation) will reduce postoperative pain. Even when these techniques are used, regular acetaminophen or acetaminophen and an opioid may be needed once the block wears off.

The glossary at the end of this booklet describes the most common drugs used for post-operative pain.

OTHER TYPES OF PAIN

Burn pain

Burns are often painful, with both long lasting pain and painful dressing changes. Treating long lasting pain is like treating postoperative pain. Treating pain from dressing changes is the same as for short sharp pain.

Cancer pain

Children with cancer may have pain from the disease, from the cancer treatment and from the many needles that come with treatment. We have already talked about how pain from needles and other procedures can be prevented. *Making Cancer Less Painful* is a booklet that is specifically focused on pain from cancer. It is available at our website: http://www.pediatric-pain.ca.

Disease and treatment pain can last a few days or many months, but they are usually not difficult to treat. The same methods are used as in postoperative pain. Medicine is given regularly, in doses that will keep the pain away. Regular pain checks are very important, so that the doses of pain medicine can be adjusted. Usually cancer pain doesn't change as quickly as postoperative pain, so it should be easier to keep it under control.

Chronic or long lasting pain

Other chronic or long lasting pains can occur in children. Complex regional pain syndrome (reflex sympathetic dystrophy), sickle cell disorder, fibromyalgia, recurrent abdominal pain, and headache are a few examples. Treatment will depend on the specific condition and the child's needs.

Some children's health centres have a team of specialist staff to help children with chronic pain problems.

WHERE TO GET ADVICE

What to do if your child is in pain

Although not all pain can be eliminated, almost all pain can be reduced. If your child has a lot of pain, it is likely that more can be done to help.

In the short term:

1. Tell your child's doctor or nurse about your concerns.
2. List your concerns as clearly as you can.
3. Ask what more can be done for your child to control the pain.
4. Ask about some of the methods discussed in this booklet.
5. If you are still concerned about your child's pain control, ask for a formal meeting with the doctor about pain management. At this meeting, you could
   - Review your concerns about your child's pain
   - Ask what options are available
   - Request that your child's doctor consult a pain management specialist
   - Request a referral to a pain management specialist or the pain team in your health centre.
6. Be constructive in your approach. It is always best to assume that your child's doctor has your child's best interests at heart and is doing the best that he or she can.
7. Seek to form a partnership with the health care team in managing your child's pain.
8. If you are not satisfied with what is being done, some type of formal complaint may be unavoidable. Although it is hard to make a complaint, written complaints often result in positive changes being made.

In the long term:

1. Parents can learn from each other. Talk with other parents and learn what they did to get better pain management.
2. Contact education and advocacy groups for children's health.
3. Ask at your local library or hospital library about national guidelines for pain management.
4. Contact the children's hospital in your state/province/region and ask about their guidelines for pain management.
5. Work with professionals caring for children to make changes in the way the hospital or agency manages pain.

Pain management is the right of every child.
Parents working with health providers are the best advocates for this right.

FURTHER READING

In the past decade, the amount of knowledge about pediatric pain has dramatically increased. There are many pamphlets and booklets, several books and websites. Much of the information is valid but some is questionable. Below are some materials that we can recommend.

Websites

The Pediatric Pain Research Lab at the IWK Health Centre has an extensive website at: **http://www.pediatric-pain.ca**, which includes links to many other sites at **http://www.pediatric-pain.ca/links.html**

Books

For parents

Kuttner, L. (1996). *A Child in Pain: How to Help, What to Do*. Point Roberts, Washington: Hartly & Marks Publishers Inc.

McGrath, P.J., Finley, G.A., & Turner, C. (1992). *Making Cancer Less Painful*. Halifax: IWK Grace Health Centre.

For Professionals

Acute Pain Management Guideline Panel. (1992). *Acute Pain Management: Operative or Medical Procedures and Trauma. Clinical Practice Guideline*. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services.

Schechter, N. L., Berde, C. B., & Yaster, M. (2002). *Pain in Infants, Children, and Adolescents*. Philadelphia: Lippincott, Williams and Wilkins.

Finley, G. A. & McGrath, P. J. (1998). *Measurement of Pain in Infants and Children*. Seattle: IASP Press.

McGrath, P. J., & Finley, G. A. (1999). *Chronic and Recurrent Pain in Children and Adolescents*. Seattle: IASP Press.

Finley, G.A. & McGrath, P.J. (Eds.) (2001). *Acute and Procedure Pain in Infants and Children*. Seattle: IASP Press.

Anand, K.J.S., Stevens, B. & McGrath, P.J. (Eds.) (2000). *Pain in Neonates* (2nd ed.). Amsterdam: Elsevier.

McCaffery, M., & Pasero, C. (1999). *Pain Clinical Manual* (2nd ed.). St. Louis: The C.V. Mosby Company.

McKenzie, I., Gaukroger, P.B., Ragg, P,. & Brown, T.C.K. (Eds). (1997). *Manual of Acute Pain Management in Children*. Baltimore: Churchill Livingstone.

Twycross, A., Moriarity, A., & Betts, T. (1998) *Paediatric Pain Management – A multidisciplinary approach.* Oxford: Radcliffe Medical Press.

Yaster, M., Cote, C. J., Krane, E. J., Kaplan, R. F., & Lappe, D. G. (1998). *Paediatric Pain Management and Sedation Handbook*. St. Louis: Mosby Inc.

Stannard, C.F., Booth, S. (Eds). (1998). *Churchill's Pocketbook of Pain*. Baltimore: Churchill Livingstone Incorporated.

GLOSSARY

acetaminophen (e.g., Tylenol®, Panadol®; paracetamol): a drug that relieves mild pain and fever, but is not very helpful for inflammation.

addiction: excessive craving for a drug (usually an opioid) that happens when the drug is used for reasons other than pain relief. This is not a problem if drugs are given for pain control.

Advil®: (see ibuprofen)

Ametop®: a local anesthetic containing amethocaine (tetracaine) applied to the skin as a gel. It numbs the skin for 4-6 hours, and prevents or reduces pain from needles and minor procedures. It is available with a prescription.

amitriptyline (e.g., Elavil®): This prescription drug was originally used to treat depression. Small doses are often useful for pain related to nerve damage. It may cause drowsiness and dry mouth.

analgesic: a drug that reduces pain. Sometimes, it is called a “pain killer” or "pain-reliever".

anesthesiologist (anaesthetist/anesthetist): a doctor who specializes in administering anaesthesia and controlling pain during surgery and other procedures. Many anesthesiologists also work in pain management.

anaesthetist/anesthetist : In Canada, Australia and other countries, an anesthesiologist.
In the United States, this term is used to describe a specially trained nurse (“CRNA”) certified to give anesthesia under medical supervision.

Aspirin (acetylsalicylic acid, ASA): mild pain reliever. Rarely used in children under 13 years of age.

benzodiazepines (e.g., Ativan®/lorazepam, Valium®/diazepam, Versed®/midazolam): a class of drugs having common effects such as decreased anxiety and sedation.

biofeedback: Biofeedback is a treatment whereby information about the body, such as skin temperature, heart rate and blood pressure, is measured and presented to the child. Biofeedback can teach you to release the tension in your muscles and improve your circulation, two steps that can significantly ease many types of pain.

bupivacaine (e.g., Marcaine®, Sensorcaine®): a local anesthetic . It is often put under the skin with a small needle and is commonly used in epidural and caudal blocks. *(see epidural and caudal block).*

carbamazepine (e.g., Tegretol®): a drug used to treat epileptic seizures or convulsions that is also used to treat pain related to nerve damage.

caudal block: a regional block given in the tailbone area to relieve the pain of hernia repairs, circumcisions and some types of leg or foot surgery.

celecoxib (Celebrex®): a selective non-steroidal anti-inflammatory drug (NSAID) that blocks only the cox-2 enzyme to decrease pain, fever, stiffness, and swelling caused by arthritis. Although not more effective than regular NSAIDs, it may be easier on the stomach than non-selective NSAIDs and it does not interfere with the clotting of blood.

codeine: an opioid analgesia used to control mild or moderate pain. It may be combined with acetaminophen, for example as the prescription drugs Tylenol #2 or #3® or Panadeine Forte®. In some countries, like Canada and Australia, 8mg of codeine with acetaminophen is available over the counter as Panadeine® or Tylenol #1® or as a generic drug. Codeine must be changed into morphine in the body before it works. About 10% of people can't convert the drug, so if codeine seems ineffective, an equivalent dose of morphine may work.

conscious sedation: use of powerful drugs to cause sedation and get rid of pain during a painful procedure. The child is still awake, but usually has no memory of the procedure. This is a light general anesthesia and should have the necessary staff and equipment present for safety.

constipation: when bowel movements are hard and dry, difficult or painful to pass, and less frequent than usual as a result of long-term use of morphine or other opioids. This problem can be remedied with a high fibre diet and increasing fluids. If needed, the doctor can prescribe medication to soften bowel movements (like Colace®), or medication to stimulate the bowels (like Senekot®).

COX-2 enzyme: a naturally occurring chemical, cyclo-oxygenase-2, that is responsible for inflammation.

Demerol®: (see meperidine, pethidine)

Dilaudid®: (see hydromorphone)

distraction: a means of using the senses of hearing, seeing, touching, and moving to focus attention on something other than pain. Methods of distraction might include music, television, toys, books, blowing bubbles, or conversation.

deep sedation: use of powerful drugs to cause sedation and get rid of pain during a painful procedure. The child is asleep for a few minutes. This is a form of general anaesthesia and should have the necessary health professionals and equipment present for safety.

dependence: when the body becomes so used to, or dependent on, an opioid drug, so that sudden removal of it will lead to a withdrawal reaction. When the drug is stopped suddenly, the child may feel anxious, irritable, or sick. If the drug is reduced gradually, these problems will not happen. Physical dependence on pain medication is *not* addiction.

EMLA®: a mixture of two local anesthetics, lidocaine (lignocaine) and prilocaine. As a cream these drugs numb the skin, and prevent or reduce pain from needles and minor procedures. In some countries, like Canada, it is available over the counter, but in other countries a prescription is needed.

epidural: an anesthetic drug (like lidocaine/lignocaine or bupivacaine) and/or an opioid (like fentanyl or morphine) that is put into a part of the spine near the spinal cord (the epidural space) to cause numbness or to control pain in a specific part of the body.

fentanyl: a short-acting strong opioid drug used in infusions, in general anesthesia and deep sedation.

gabapentin (Neurontin®): a drug used to treat seizures that is also useful for managing pain from damaged nerves (neuropathic pain). Gabapentin is now available as a generic drug.

general anaesthetic: an anaesthetic that affects the whole body, ensuring that the child is fully asleep and free of pain during a test or operation. It consists of a combination of drugs given either as gas to breathe, or intravenously. Only anesthetists/anesthesiologists give general anesthetics.

generic drug: a drug that is sold under different trade names, often local house-brand names. Ibuprofen and acetaminophen (paracetamol) are available as generic drugs. These are often less expensive than brand name drugs.

hydromorphone (e.g., Dilaudid®): a strong opioid that is used in the same way as morphine.

ibuprofen (e.g., Nurofen®, Brufen®, Advil®, Motrin®): a non-steroidal anti-inflammatory drug (NSAID) used for mild to moderate pain. In low doses, it is available over the counter. In high doses, it is a prescription drug. It is also available as a generic drug.

intramuscular (IM): IM injections go into a muscle, and are usually given in the leg or buttocks. They should not be used for pain control.

intravenous (IV or drip): either the small plastic catheter (tube) that is inserted into a vein, or the fluid given through the catheter.

ketorolac (Toradol®): a non-steroidal anti-inflammatory drug (NSAID) that can be given intravenously, used for short-term pain.

laughing gas: (see nitrous oxide)

lidocaine/ lignocaine (e.g., Xylocaine®): a local anesthetic that is used to make the skin numb. It is put under the skin by a small needle. It is also one of the drugs in EMLA®.

local anaesthetic: a drug that numbs a specific area of the body. It may be given as a cream (like EMLA® or Ametop®) or by needle (like lidocaine/lignocaine).

meperidine (Demerol®, pethidine): a strong opioid drug that is used for post-operative pain. It is not recommended for long-term use because the by-products of this drug may cause seizures.

methadone (e.g., Dolophine®, Methadose®): a long-acting opioid analgesic useful for severe pain. It is also used to treat withdrawal from heroin and other opioids.

midazolam (e.g., Versed®): a very short-acting benzodiazepine used for conscious sedation. It does not provide analgesia.

morphine: a strong opioid drug used to manage severe pain. It can be given intravenously, subcutaneously, or by mouth. Its effects usually last 3 or 4 hours. Morphine can also be given as a sustained-release (long-acting) pill (e.g., MS-Contin®) that lasts 8 to 12 hours.

MS-Contin®: a long-acting form of morphine that lasts 8 to 12 hours.

naproxen (e.g., Naprosyn®): a non-steroidal anti-inflammatory drug (NSAID) used for mild or moderate pain.

naloxone (Narcan®): most commonly used drug to reverse respiratory depression caused by an opioid overdose. Respiratory depression is very rare when a pain management team monitors the opioid dose given to the child.

narcotic: (see opioids)

nitrous oxide: ("laughing gas") a pain-relieving gas that is inhaled to give pain relief. It is useful for painful procedures.

non-steroidal anti-inflammatory drugs (NSAID): these drugs are used to treat fever, pain and swelling. Commonly used NSAIDs included naproxen, ibuprofen and ketorolac.

NPO: or "nil per os", means nothing should be given by mouth.

occupational therapist: a professional who helps the child achieve independence in such areas of their lives as activities of daily living, play and school.

opioids: Opioids are sometimes called "narcotics", but opioid is the correct term. Opioids are pain-relieving medicines such as morphine, codeine and similar drugs. Commonly used opioids include fentanyl, morphine, codeine, hydromorphone, and meperidine.

oxycodone: a strong opioid analgesia used to manage moderate to severe pain. It comes in oral and rectal form. The long-acting form of oxycodone is called Oxycontin® and lasts 8 to 12 hours.

pain nurse: a specialist nurse who works on a pain management team. The pain nurse is responsible for day-to-day management of pain (in conjunction with a doctor) as well as staff and family support and education about pain. The nurse is often an advanced practitioner and in some hospitals is allowed to prescribe pain-relieving drugs and other medications to treat pain.

pain management team: The team includes experienced health professionals who specialize in pain management. Health professionals from anesthesiology, pediatrics, nursing, pharmacy, occupational therapy, psychology, and physiotherapy may be on the team.

paracetamol: (see acetaminophen). Term used for acetaminophen in many countries.

PCA (Patient Controlled Analgesia): a computer-controlled pump that allows the child to control the amount of pain medication he or she receives. The computer is set so that it is impossible to give too much medication. This is ideal because the drug can be used as it is needed and without delay. It also helps the child feel in control of their pain and assures them that it will be taken care of.

pethidine: (see meperidine) . The term used for meperidine in some countries.

pharmacist: a qualified professional who dispenses drugs and promotes the safe and effective use of medicines in the hospital or community.

physiotherapist: a professional who help children improve what they can do physically with exercises that keep muscles strong and flexible.

PO: or "per os", means the drug is taken by mouth.

PR: or "per rectum", means the drug is taken as a suppository or gel placed in the rectum.

PRN: or "pro re nata" means "as needed". Unfortunately, this often means that pain medication is not given until after the pain returns.

propofol (e.g., Diprivan®, disoprofol): a drug used in general anesthesia and sedation. It does not relieve pain.

pseudo-addiction: perception by health professionals that requests for more or stronger pain medications is addictive behaviour when in fact the requests are a response to inadequate pain control. This means that pseudo-addictive behavior is a pain-relief seeking behaviour.

psychiatrist: medical doctor specializing in mental health problems.

psychologist: non-medical doctor who specializes in how people think, grow and react. A psychologist may teach you and your child more about easing the pain and coming to terms with it, but cannot prescribe medications.

q4h: every four hours.

relaxation training: ways to help the body relax, which then reduces pain. It may include progressive muscle relaxation, meditation, yoga or hypnosis.

regional block: local anesthetic that can be used for post-operative pain. There are two main kinds of regional blocks used in children – caudal block and epidural block.

respiratory depression: slowing of a person's breathing rate or decrease in the depth of breathing. All opioids can cause respiratory depression. Though this is important, it is a very rare side effect. When opioids are adjusted carefully by a knowledgeable health professional, respiratory depression should not be a problem.

S/C (subcutaneous): injected just under the skin.

TENS (transcutaneous electrical nerve stimulation): This device uses electrodes to deliver small mild electrical impulses through the skin to block pain.

tolerance: the need for larger doses of an opioid to get the same pain-relieving effect after taking it for a prolonged time. Tolerance is not the same as addiction.

Toradol®: (see ketorolac)

transdermal: absorbed into the skin, usually from a medicated adhesive patch, eg transdermal fentanyl.

Tylenol®: (see acetaminophen/paracetamol)

Versed®: (see midazolam)

withdrawal: If a child who has been on opioid analgesia for more than a few days or weeks has the drug stopped suddenly, a withdrawal reaction may occur because the body has become used to the drug. The child may have diarrhea and become jittery, sweaty, or grumpy. Reducing opioid analgesia slowly will prevent withdrawal.