



Continuous Nerve Blocks at Home

What is a peripheral nerve block?

This nerve block is a way to treat and prevent pain after surgery. Your child's anesthesiologist injects medication near nerves supplying the area where your child or teen has had surgery. This numbing medication (or local anesthetic) 'freezes' the area.

Anesthesiologists use nerve blocks to:

- Reduce pain after the surgery
- Decrease the need for pain medications and their side effects (like nausea, vomiting, itching and sleepiness)
- Allow better rest following surgery
- Make it easier to take part in physiotherapy.

What is a continuous nerve block?

This kind of nerve block allows your child or teen to receive numbing medication continuously. It will help control your child or teen's pain over the next few days. The anesthesiologist inserts a small tube (catheter) near the nerve. We are then able to give the medication through this tube with a special infusion pump.

Before your child or teen goes home, the anesthesiologist will connect the catheter to a small pump filled with freezing medication. We will give you separate instructions on how to make sure your child or teen is getting the right amount of the medication through the nerve catheter.



How long will the nerve block last?

The numbing medication (ropivacaine) is long acting. It will control your child or teen's pain for 6-18 hours after a single injection. Continuous nerve blocks last as long as the numbing medication is infusing through the pump. Your anesthesiologist will decide how long your child or teen will need the continuous nerve block. The numbing medication will keep working for 6-18 hours after the continuous nerve block is stopped.

The pump starts delivering medication once it is connected to your child or teen's catheter. It continues delivering it until it is empty or disconnected. The special pump is designed to give "numbing" medication for 48 hours. CHEO's Pain Service team will assess your child or teen's pain and can adjust the medication as needed.

What happens when the nerve block wears off?

Your child will be able to move her limb normally after 6-18 hours after the continuous nerve block infusion stops. The feeling in the limb will also come back. To prevent pain, give your child or teen pain medication **before the nerve block begins to wear off completely**. It's easier to control pain when you give the pain medication earlier.

Even if the nerve block is working, you may need to add pain medication. You may need to give your child or teen medication for pain if the pain score is more than 4 (on a scale of 0-10, where 0 means no pain and 10 means the worst pain possible).



What happens when we go home?

Your doctor will check off which medications to give your child or teen. Pain medicines come in different concentrations (the number of mg of medicine in each mL, tablet or suppository). **The amount you give depends on your child's weight.** Check the concentration on the bottle, and read the package directions carefully.



My child's weight _____

As soon as your child or teen is able to drink fluids, give:

- Acetaminophen** (Tylenol®, Tempra®, Panadol®, Atasol®)

Dose: 10-15 mg/kg every 6 hours for the next 48 hours . After the first 48 hours, give acetaminophen only when needed. No more than 4 doses in 24 hours (or 8 doses in 48 hours).

My child's dose:_____

- Ibuprofen** (Advil®, Motrin®)

Do not give to babies under 6 months of age.

Do not give if your child is also taking other non-steroidal anti-inflammatory medication (like Celebrex ® or Voltaren ®)

Dose: 10 mg/kg every 6 hours for 48 hours. After the first 48 hours, give ibuprofen only when needed. No more than 4 doses in 24 hours (or 8 doses in 48 hours). Give ibuprofen with food to prevent stomach irritation.

My child's dose:_____

- If your doctor has prescribed other pain medications (like morphine or hydromorphone), follow the directions carefully. **Give these medications once the feeling in the limb starts to come back.** These medications will prevent pain when the nerve block wears off completely. Make sure to give these medications at bedtime, to prevent pain if the nerve block wears off during the night.

Are there any side effects from continuous nerve blocks?

It is normal to feel numbness and heaviness in the affected area. Your child or teen may have difficulty moving this area.

There are 2 types of side effects:

1. **Side effects caused by the local anesthetic medication used.** These are rare, but can be serious. They happen when your child or teen gets too much of the numbing medication, causing:
 - Ringing (buzzing) in the ears
 - Numbness and tingling around the mouth
 - Metallic taste in the mouth
 - Lightheadedness/ dizziness
 - Blurred vision.

Clamp the catheter and call the Acute Pain Service if your child or teen has any of these side effects. The phone numbers are listed on the last page.



2. **Side effects linked to the numbness the nerve block causes.** These are not serious and should go away when the block wears off. Your child or teen may have weakness in the affected limb. Because the area is numb, it's important to protect the area from injury. Your anesthesiologist will check the kind of nerve block your child or teen received (below), and will give you any special instructions for that specific block.

- Interscalene nerve block (neck injection) may cause:
 - Feeling that you can't take a full breath
 - Arm weakness
 - Hoarseness of the voice
 - Droopy eyelid or pinpoint pupil on the blocked side
- Femoral block (groin injection) may cause:
 - Leg weakness. Remember, this nerve block does not freeze the back of the knee, so your child or teen may feel some discomfort there.
- Popliteal fossa (sciatic) block (injection in the back of the knee or thigh) may cause:
 - Foot weakness

Taking care of your child or teen after a nerve block



Watch the video! <http://www.cheo.on.ca/en/Video-Outpatient-Catheter-Therapy>

We will call you at home the day after discharge from CHEO to see how your child or teen is doing.

1. Because your child or teen can't feel the frozen limb, you'll need to take special care:
 - Support and protect the frozen limb at all times. Raising the limb on a pillow may help to reduce pain.
 - Keep the limb in a comfortable position.
 - Make sure that there is nothing pressing on the frozen limb.
 - Make sure the limb doesn't get too hot or too cold.
 - Make sure your child or teen wears a sling if ordered by your doctor.
2. Avoid excessive activity involving the frozen limb. Your child or teen can't feel or control the limb while it's frozen. Take care to avoid injury to the area. Your child or teen won't have the same sense of feeling in the area, so may not feel heat, cold or other things the same way. When getting around, crutches or a sling may help. Children and youth shouldn't try to bear weight on a numb leg or use a numb arm for support.
3. Check the nerve block injection site each day for the next 2 days. Call your anesthesiologist if you notice signs of infection (this is rare) like:
 - Redness;
 - Pain at the injection site;
 - Swelling;
 - Pus or draining liquid.
4. Watch for constipation: It may be a good idea to give children or youth Restorolax®, Miralax® or Lax-a-Day® while they are taking opioid pain medication. You won't need a prescription, but you may need to ask the pharmacist for these. Follow the instructions carefully. If your child or teen weighs more than 50 kg, give the adult dose once a day.



Taking care of the catheter

If your child or teen's pain is not under control, check the tubing for closed clamps or kinks. Also check to make sure there is medication in the pump.

Dressing:

- **Keep the dressing over the catheter clean and dry.** It is normal to have a small amount of clear or pink-colored drainage under the dressing. Leakage is not a concern as long as pain control is good.
- **Do not change the dressing.** The catheter is not stitched in place, and could come out if you remove the dressing. If you need to, reinforce the dressing with a large tegaderm.

Bathing: Your child or teen will not be able to have a shower or tub bath while the catheter is in place. A sponge bath is OK.

Activity: Follow your surgeon's activity restrictions.

Taking care of the infusion pump

Please see the instruction manual on how to check infusion status. Don't drop the pump, and keep it out of water. If your child or teen is using ice for comfort, keep it away from the lower part of the pump tubing.

This pump:

- Infuses the nerve block medication.
- Will be set-up for your child or teen after the surgery, before you leave the hospital.
- Will not allow you to make any adjustments to it.
- Gives the numbing medication very slowly. It may take more than 24 hours before you notice a change in the size or look of the pump.
- Will gradually get smaller as the infusion continues. It will 'collapse' as it empties.

If your anesthesiologist decides that your child or teen will need the medication infusion for longer than 48 hours, you may have to return to CHEO for a pump replacement.



Empty infusion pump

Removing the catheter

You will remove the dressing and catheter at home. The anesthesiologist will tell you when to do this. Any remaining numbness your child or teen has been feeling should go away within 24 hours after the catheter is removed.

To remove the catheter:

1. Gently lift the adhesive dressing covering the catheter insertion site. You may also remove any remaining tape.
2. Grasp the catheter as close as you can to where it enters the skin and gently pull it out. This shouldn't cause any discomfort to your child or teen. You shouldn't notice any resistance when you pull. A small amount of blood or fluid drainage is normal.



If you feel resistance as you pull the catheter, or if the catheter stretches, stop. You could break the catheter if you keep pulling. Wait 30-60 minutes and try again. If you have trouble removing catheter when you try again, call us as outlined below.

3. Hold pressure over the site for 1 minute with a sterile gauze pad. Then apply a band-aid. You may remove the band-aid later that day.
4. After removal, check the tip of the catheter for a black dot. This tells you that the entire catheter was removed.
5. Wash the skin with alcohol swabs to remove any surgical soap or adhesive near the site.
6. Throw the catheter, tubing and pump in the garbage. Do not try to remove any leftover medication. The medication does not contain any narcotic drug. It can't be taken by mouth or intravenous (IV) injection. People can have toxic reactions if the medication is injected into a vein.

Follow up Calls

We will call you every day that you are using the pump. We'll also call you the day after you remove it. We will check on your pain control and discuss any questions or concerns. You can also call us (information below) if you have any questions or problems with the nerve block or infusion.

Call right away and clamp the tubing if:

1. Your child or teen has:
 - Ringing (buzzing) in the ears,
 - Numbness and tingling around the mouth,
 - Metallic taste in the mouth,
 - Lightheadedness or dizziness
 - Blurred or double vision
 - Nausea or vomiting, drowsiness
 - Increased anxiety, shortness of breath, shakes or tremors
2. Your child or teen has signs of infection, like: redness, swelling, pain or discharge at the catheter insertion site where the tubing enters the skin.
3. Your child or teen has abnormal, intense pain at the surgical site or anywhere else on the blocked limb. This is most often a sign that the nerve block is not working. In very rare cases, it could be a sign of nerve damage.
4. The limb is still numb longer than 24 hours after injection (so the block is not wearing off).

How to reach us:

Office hours, Monday to Friday: 7:30 am to 3:30 pm

- **Nurse Practitioner for Pain:** Brenda Martelli (pager) 613- 593-4683
Please contact Brenda Martelli, for pain and pump questions during the first 3 days (72 hours) at home. After that, please call the orthopedic clinic C4 at ext 2338.
- **Administrative coordinator:** Jennifer Borup 613-737-7600 extension 2431
Please contact Jennifer Borup during office hours if you can't reach the Nurse Practitioner).

Outside of office hours (evenings, nights and weekends):

For pain or pump questions, call (613) 737-7600, and ask the receptionist to page the Anesthesiology resident on-call.

