

Pain Control

Adequately treating pain after surgery is one of the most important components of healing. Studies have shown that inadequately controlling pain can result in infections and scarring in addition to general discomfort from being in pain.

The physiologic basis for this stems from the fact that when we are in pain our blood vessels constrict which results in decreased blood flow and poor healing. Uncontrolled pain is both uncomfortable and also dangerous!

The most effective way to treat pain has been shown to involve *multimodality treatment*. This means that the pain stimulus should be treated at multiple levels. This process begins before the first incision is even made!

Preoperative pain control: our patients are expected to fill their prescriptions **before surgery** so that they have all of their medications available when they need it and are not trying to go to a pharmacy that may or may not be open when they finally need their medication. It is important that the patient completely understand how to take their medications and what the expected side effects will be.

Intraoperative pain control: our surgeons block the peripheral pain receptors with local anesthetic while the anesthesiologist administers medications that work at the level of the brain and spinal cord.

Postoperative pain control: when you wake up from surgery, our goal is that you should feel absolutely no pain because of the effects of local anesthetic that should last for several hours. Unfortunately, there are situations where we cannot block all pain receptors due to the anatomy of the patient. In either situation, the most effective way to control pain is to treat it **before** it becomes severe.

When you begin to experience pain (whether it is in the recovery room or several hours later at home), you should take your first pain pill and not wait for the pain to become severe. This is called *preemptive pain control* and should take place for the first one to two days after surgery. After roughly 48 hours, the patient should only begin taking the medication when they need it and not preemptively. In some cases, preemptive pain control should continue beyond 48 hours.

The postoperative treatment of pain is achieved most effectively by blocking pain receptors both centrally with **narcotics** and peripherally with **NSAIDs** and **Neurontin**.

Narcotics: The most commonly used narcotic medications are hydrocodone with acetaminophen (Norco and Vicodin) and oxycodone with acetaminophen (Percocet). Other medications include codeine with acetaminophen (Tylenol with codeine, Tylenol #3) and tramadol with or without acetaminophen (Ultram). All of these medications work through a similar mechanism by blocking pain receptors (Opioid receptors) in the spinal cord and brain. All of the narcotic medications have similar side effects that include constipation, nausea, itchiness, sleepiness and respiratory depression.

NSAIDs: The other class of pain medications that is used are Non-Steroidal Anti-Inflammatory Drugs (NSAIDs). The most common medications include ibuprofen (Advil, Motrin), naproxen (Alleve), Celebrex

and others. These medications do not have the same side effect profile as the narcotics and are much better tolerated because they do not cause constipation or nausea. The major side effects of NSAIDs affect the stomach. These medications decrease the protection of the stomach from acid which can result in abdominal pain and rarely ulcers. In most patients who do not have pre-existing problems with their stomach, the patient should be able to tolerate these medications. Another very rare side effect of NSAIDs is kidney damage and it is important to drink lots of water while taking NSAIDs to flush out the kidneys. **Obviously, patients with kidney failure or ulcer disease should not take NSAIDs!**

Neurontin: Neurontin (also known as Gabapentin) affects the peripheral nerves by decreasing the ability of the pain nerve to transmit its signal to the brain. The main side effect is drowsiness because the medication can also cross the blood brain barrier. In order to minimize the side effect, the medication is taken at a lower dose and then gradually increased as the body gets used to it. You should take the Neurontin as prescribed (three times per day) but if it causes too much sedation you can take two pills at once before bed and skip the other doses. This medication is safe to take with NSAIDs and narcotics.

You should begin taking Neurontin/Gabapentin 2 days before surgery at night: Take one pill two nights before surgery, and then again the night before surgery.

Acetaminophen or Tylenol is often considered an NSAID but actually works through a slightly different mechanism which makes it safe to use with ibuprofen simultaneously. This medication does not cause stomach or kidney problems.

The NSAIDs block pain and inflammation through a different pathway than the narcotic medications. As a result, when the narcotic medications are mixed with NSAIDs the effect is *synergistic* which means that pain is controlled much more effectively than if only one class of medication is used.

The dose of NSAIDs that is prescribed after surgery is often higher than the normal dose of over-the-counter medication. For example, Motrin and Advil contain 200 mg of ibuprofen however for postoperative pain we will generally recommend 600 mg or 800 mg of ibuprofen (three or four over-the-counter pills taken all at once!) every 6-8 hours.

As mentioned before, **ibuprofen can be safely mixed with Norco or Percocet and Neurontin** resulting in a very effective pain control regimen. By taking the medications together, the patient requires less Percocet and Norco and therefore has fewer side effects such as constipation and nausea.

The recommended regimen for postoperative pain control is therefore: *scheduled* ibuprofen and Neurontin every six or eight hours supplemented by Norco (or Percocet) for more severe pain *as needed*. If the pain is not severe, you should take Tylenol 500 mg *instead* of the Norco (or Percocet).

This means that the patient takes ibuprofen and/or Neurontin whether they are having lots of pain or only mild pain on a scheduled basis (every 6-8 hours) and takes the Norco (or Percocet) only if the pain is severe. If the pain is mild, take the Tylenol instead of the Norco. In some cases a patient will only need half a tablet and in some cases the patient may need up to two tablets of Norco or Percocet, depending on their pain. As the patient's pain decreases, fewer Norco or Percocet tablets should be taken and only

once the patient has completely stopped taking the Percocet or Norco should they begin cutting back on the ibuprofen and Neurontin.

The ibuprofen, Neurontin and Tylenol or narcotic (Percocet or Norco) can be taken at the same time or separately. We recommend that patients experiment and find what is most effective for them. For example, if it feels like the pain relief does not last long enough, the medications can be staggered so that there is always something working to decrease your pain. Conversely, if it seems that the duration of pain relief is sufficient but the intensity is not sufficient, the medications can be taken simultaneously in order to get a more effective result.

Again, the less narcotic medication that a patient takes, the fewer side effects they will experience and for this reason high-dose ibuprofen (600 mg or 800 mg), Tylenol 500 mg and Neurontin will result in pain relief with fewer side effects!

A word about acetaminophen or Tylenol!: almost all of the narcotic medications are combinations of a narcotic and Tylenol (acetaminophen) and for this reason a patient should **never** take Tylenol (acetaminophen) **with** Vicodin, Norco, Percocet, TyCo, etc. because they will be getting twice as much Tylenol which can be very dangerous.

A word about Aspirin: Acetylsalicylic acid (aspirin or ASA) is a special type of NSAID that prevents blood from clotting. For this reason, taking aspirin within 14 days of surgery increases the risks of bleeding and bruising. Therefore, all patients should avoid taking aspirin for two weeks before surgery and for two weeks after surgery.

A word about bleeding: studies have shown that contrary to popular belief, ibuprofen does not increase the risk of bleeding after surgery. Only aspirin increases the risk of bleeding and should be avoided.

So to summarize:

- Start Neurontin two nights before surgery.
- For normal pain take Ibuprofen AND Neurontin AND Tylenol 3 times per day.
- For severe pain take Ibuprofen AND Neurontin AND Norco (or Percocet) 3 times per day.
- It is normal and expected to have some pain after surgery.
- Never mix Tylenol and Norco (or Percocet) because they both contain Tylenol (Acetaminophen).
- Stop taking the narcotic medications as soon as possible to minimize side effects.
- Remember that taking Ibuprofen (600mg) AND Tylenol (325-500 mg) together is as powerful as Percocet but without the side effects.