

### **Deferring or Pre-Emptying Joint Replacement: Medications, Supplements, and Topicals**

Joint replacement is generally reserved for patients with endstage (bone-on-bone) arthritis, cannot be undone, and about 3% of patients that undergo joint replacement will experience a major complication of the operation that might place them in worse straits than they were in before surgery.

Some patients with less than bone-on-bone arthritic deterioration of a hip, knee, or shoulder might benefit from less extensive operations and most patients, regardless of the degree of radiographically evident arthritis, may benefit from non-operative interventions.

Medications, supplements, and topicals often reduce arthritic pain and may allow for patients to more comfortably pursue a weight loss and fitness program.

### **Medications for Arthritic Pain: Generalities**

Any medication, whether it is prescription or over-the-counter, has potential ill effects (allergic reactions, rashes, stomach irritation, liver or kidney damage). The risk of ill-effect increases with the amount of the medication taken and the frequency of its dosing. Generally you can reduce the risk of a stomach irritation by taking medications for arthritic pain with food.

Taking smaller doses of multiple medications might be safer than taking large doses of one medication. For example acetaminophen increases the effect of the over-the-counter (OTC) nonsteroidal anti-inflammatory (NSAIs), aspirin, Aleve [Naproxen], or Advil [Ibuprofen]. Taking one or two 325-mg tablets of acetaminophen with one to two OTC NSAID tablets (325 to 650-mg of Aspirin, or 200 to 400-mg of Ibuprofen [Advil], or 220 to 440- mg of Naproxen [Aleve] may be safer and more effective than two to four tablets of any of the four medications taken alone.

Patients that are most bothered by morning pain and stiffness might be best served by taking OTC arthritis medications with breakfast. Those whom are bothered later in the day might consider taking the medications with lunch or dinner.

### **Over-The-Counter Medications for Arthritic Pain**

#### **Acetaminophen (Tylenol)**

Acetaminophen is generally recognized as the safest medication to take for arthritic pain. The dose should be limited to eight 325-mg tablets a day. As with any medication, the less you take the less likely you are to experience an ill effect. Acetaminophen is routinely added to prescription and OTC combination pain medications. Combination OTC pain medications (Excedrin and many others) most often include aspirin and caffeine in addition to acetaminophen. It is important to consider all sources of acetaminophen taken on a given day to ensure that a maximal dose of 3 grams (3,000 mg) is not exceeded in a given 24-hour period.

Acetaminophen may be effective enough taken alone for arthritic pain but it also enhances the pain relief of other types of medications such as nonsteroidal anti-inflammatory (NSAI) medications (see below) or prescription pain medications such as hydrocodone (Vicodin, Norco), oxycodone (Percocet, Endocet), or Tramadol (Ultracet). Should you find it necessary to take acetaminophen on a daily basis, you ought to inform your primary medical provider. Unlike NSAI medications, acetaminophen does not need to be taken with food, making it suitable for bedtime use for those patients that find that their arthritic pain interferes with sleep. Some patients find that if they add a small dose of Benadryl (diphenhydramine) in addition to acetaminophen at bedtime, it is helpful to promote sleep as well as to relieve pain (Tylenol PM and generic equivalents).

Significant adverse reactions to acetaminophen are rare. No more than 4000 mg of acetaminophen (twelve 325-mg tablets) should be taken in a 24-hour period. If acetaminophen is taken on a regular basis, the dose ought to be limited, on average, to 3000 mg a day (nine 325-mg tablets). In a study of 500 patients taking acetaminophen for arthritic pain on a daily basis, none had to discontinue the drug because of a significant adverse effect and almost all of the 500 patients experienced some benefit.

It is a misconception that patients with kidney or liver problems should avoid acetaminophen but it is reasonable for patients with these problems not to exceed 3000 mg (nine 325-mg tablets) on a given day. If acetaminophen is taken on a regular basis, it is best that patients with kidney or liver problems not take more than an average of 2000 mg (six 325-mg tablets) on a given day. Acetaminophen is a safer choice for patients with kidney or liver problems than NSAI medications (OTC or prescription) or narcotic medications.

### **OTC Non-Steroidal Anti-Inflammatory (NSAI) Medications**

Aspirin 325 mg, Naproxen (Aleve) 220 mg, and Ibuprofen (Motrin) 200 mg tablets are available over-the-counter and are inexpensive and generally safe when used occasionally as instructed on the bottle. Generally, on any given day, it is best to stick with one of the three medications. As noted above, acetaminophen (Tylenol) may be taken in addition to one of the OTC NSAIs to improve its effect and to lower the dose of the NSAI. The risk of side effects with the OTC medications increase with the dose of the medication and how frequently it is taken. If you are taking any of these medications on a regular basis, your primary medical provider should be aware because of potential for side effects in patients with chronic medical conditions and because of possible interactions with prescription medications.

*Generally, patients with kidney or liver problems should avoid the use of OTC or prescription NSAI medications unless these medications are recommended or prescribed by their primary medical provider, nephrologist, or hepatologist.*

*If you are taking daily aspirin for your heart or to prevent strokes, it is best to take the aspirin first thing in the morning, at least 2 hours before taking naproxen (Aleve) or ibuprofen (Motrin), or a prescription NSAI (Celebrex, Mobic, Indocin, Feldene, and many others) because these medications can interfere with aspirin's beneficial effects, specifically that of reducing the risk of heart attacks and strokes. Taking heart-dose aspirin daily (80-325 mg) in addition to any other NSAI increases the risk of bleeding above that of taking moderate-dose aspirin. This is the reason that Dr. Tower recommends trying moderate dose aspirin in combination with moderate dose acetaminophen before resorting to Naproxen, ibuprofen or prescription medications.*

*All NSAI medications can result in stomach irritation and bleeding. Many patients can manage this by taking over the counter antacid medications such as TUMS (Calcium Carbonate), Prilosec (Omeprazole), or Ranitidine.*

### **Moderate-Dose Aspirin for Arthritic Pain in Combination with Acetaminophen**

Of the three OTC NSAIs, Dr. Tower recommends that patients consider aspirin first because aspirin reduces the risk of heart attack and stroke whereas ibuprofen (Advil) or naproxen (Aleve) may increase those risks. It is best to take NSAID medications with meals to reduce the chance of stomach irritation.

Patients are often reluctant to take moderate-dose aspirin because of concerns about bleeding or stomach upset. The bleeding risk of taking moderate-dose aspirin (four to nine 325-mg tablets a day) is not much greater than taking low-dose aspirin (80 mg, 160 mg, or 325 mg a day). The risk of stomach irritation and bleeding can be reduced by selection of “enteric coated” pills (Ecotrin and generic equivalents).

In addition to taking two 325-mg tablets of acetaminophen with meals and at bedtime patients, may safely take one to three 325-mg tablets of enteric-coated aspirin with meals.

Some patients find that ibuprofen or naproxen is more effective for their arthritic pain when they are particularly active. So, on their more active days they will preferentially take naproxen or ibuprofen instead of aspirin.

### **Moderate-Dose Naproxen for Arthritic Pain in Combination with Acetaminophen**

If moderate-dose aspirin (four to nine 325-mg tablets a day) combined with a moderate dose of acetaminophen (Tylenol) (4-9 325 mg tablets a day) is not effective, then Dr. Tower next recommends trying moderate dose naproxen (Aleve) in addition to the acetaminophen. One or two 220-mg Naproxen tablets may be taken once or twice a day in addition to taking four to nine 325-mg acetaminophen tablets a day. The naproxen doses are best timed with food to avoid stomach irritation. Dr. Tower recommends that naproxen (Aleve) be tried before ibuprofen (Advil) because ibuprofen increases the risk of heart attack or stroke more than naproxen does.

### **Moderate-Dose Ibuprofen for Arthritic Pain in Combination with Acetaminophen**

If moderate-dose acetaminophen is not effective combined with moderate-dose aspirin or naproxen, then ibuprofen in addition to acetaminophen may be tried. Taking one to two 200-mg tablets of ibuprofen (Advil) with meals, in addition to taking two 325-mg acetaminophen tablets with meals and at bedtime, might be effective.

### **Prescription Medications**

**Prescription NSAIDs** (Celebrex, Mobic, Indocin, Feldene, and many others) may work better for some patients than OTC NSAIDs but, as a general rule, they are not as safe.

**Tramadol (Ultram)** is a non-narcotic pain medication that is effective for some patients for arthritic pain. Its effect is generally improved by the addition of acetaminophen and/ or OTC NSAIDs (aspirin, naproxen (Aleve), or ibuprofen).

**Antidepressants (trazadone, doxepin, or amitriptyline), or gabapentin:** These medications, taken in low doses, are well tolerated, non-additive, safe, and inexpensive. When taken at bedtime, they also promote restful sleep.

**Narcotic pain medications** (oxycodone, hydrocodone, morphine, or hydromorphone) are rarely recommended for arthritic pain because of side effects (nausea, sedation, constipation, addiction, and death). Patients who require an average of more than one tablet a day of a narcotic medication should be managed by their primary provider or by a pain specialist. Generally, arthritic pain of the severity that requires narcotic medications is better managed by joint replacement than by escalating doses of narcotic medications.

### **Supplements**

Glucosamine-Chondroitin, Fish Oil, MSN, and turmeric are promoted as providing relief of arthritic symptoms. A high level of scientific evidence does not support these claims, but many of Dr. Tower's patients have reported good effect. Given the absence of notable side effects, Dr. Tower believes that there is no harm a trial of one at a time for 6 weeks to determine whether it is helpful to a particular patient

**Vitamin C** has been reported to have a favorable effect on any painful condition; taking 500-1000 mg a day seems reasonable. There are also reports that **Vitamin D** is helpful for arthritic pain, in addition to helping bone health. **Vitamin D** helps patients absorb calcium and helps keep calcium in the bones. Many Alaskans are **Vitamin D** deficient because of lack of sun exposure in the winter. All Alaskans should be taking 500-1000 units of **Vitamin D** daily. **Tums** (calcium carbonate) is a good source of calcium. One to two tablets taken after meals is a reasonable and inexpensive way to supplement calcium as well as helping any stomach upset caused by NSAID medications.

### **Creams or Lotions**

Many of Dr. Tower's patients have found that OTC or prescription topical preparations to be helpful. Both ***Pennsaid*** and ***Voltaren Gel*** contain the anti-inflammatory cataflam and require a prescription. Some insurance companies will not approve these medications and they can be expensive. Pennsaid can be obtained at minimal patient expense through a program sponsored by the manufacturer. These products may be safer than taking OTC NSAID pills because the liver, kidneys, and stomach are not exposed to the same degree as if the medication is taken by mouth. Apothecary or dispensing pharmacies also may prepare a mixture of medications to help with pain relief. Please feel free to discuss these with Dr. Tower.

Patients who develop skin irritation to one product might do fine with the other. Generally a "dab" is placed on the palm and the medication is rubbed into the sorest part of the joint. This can be done 1-4 times a day. Generally, patients start with 4 times a day then decrease the dosing to 1-2 times a day or as needed.

Some patients do well with OTC creams or lotions for arthritic joints. Examples include Aspercreme, Tiger Balm, or Capsaicin cream (Capzasin, Bengay, or Topricin). Other than possible occasional skin irritation, these products are very safe.