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Pain Management
Pain Medications and Over-The-Counter (OTC) Drugs

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From the Doctors of MedicineNet.com

By Doctors, For You

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Sincerely,

-- The Medical Editors, MedicineNet.com

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Pain...Oh, What A Pain!

“Nothing begins, and nothing ends,
That is not paid with moan;
For we are born in other’s pain,
And perish in our own.”

-- James Kenneth Stephen

Pain is an unpleasant sensation in animals that is caused by actual or perceived injury to body tissues and produces physical and emotional reactions. Presumably, pain sensation has evolved to protect our bodies from harm by causing us to perform certain actions and avoid others. Pain might be called a protector, a predictor, or simply a hassle. In this article, I will discuss some basic concepts of pain. For an extensive review of pain and its management, please visit MedicineNet’s Pain Overview (http://www.medicinenet.com/chronic_pain/focus.htm).

We all experience pain to greater or lesser degrees at various points of our lives. It is said that pain is the most common reason patients seek medical attention. But, each of us perceives a given pain stimulus in our own unique manner. The intensity of the response to a pain stimulus is largely subjective, meaning the severity of the pain can most accurately be defined by the person with the pain, rather than by other observers.

Our individual pain perception can vary at different times, even in response to the identical stimulus. For example, an athlete during competition may not be able to feel the tissue injury of a cut or a bruise until the competition has finished. We may feel more or less pain depending on our mood, sleep pattern, hunger, or activity.

Pain is typically classified as either acute or chronic. Acute pain is of sudden onset and is usually the result of a clearly defined cause such as an injury. Acute pain resolves with the healing of its underlying cause. Chronic pain persists for weeks or months and is usually associated with an underlying condition, such as arthritis. The severity of chronic pain can be mild, moderate, or severe.

The treatment of pain depends on its cause and the overall health of the individual affected. The primary goal of pain treatment is to return the patient to optimal function. Treatments of pain can be classified as either non-medical or medical.

Non-medical treatment options for various forms of pain include observation, rest, stretching, exercise, weight reduction, heat or ice applications, and various alternative treatments including acupuncture, chiropractic, massage, manipulation, electrical stimulation, biofeedback, hypnosis, and surgical procedures.

Medical treatments include three basic drug forms to treat pain (analgesics): Non-opioid drugs, opioid drugs, and drugs that are used to complement other analgesics (adjuvant drugs).

- **Non-opioid drugs** include acetaminophen (Tylenol and others), aspirin, and nonsteroidal antiinflammatory drugs (NSAIDs, such as ibuprofen/Motrin/Advil, naproxen/Aleve).
- **Opioid drugs** include tramadol (Ultracet, Ultram), morphine, hydromorphone (Dilaudid and others), codeine (Tylenol #3 and others), hydrocodone (Vicodin, Lortab), methadone, meperidine (Demerol), pentazocine (Talwin), propoxyphene (Darvon), and butorphanol (Stadol).
- **Adjuvant drugs** are often used for other purposes, but can also be very effective in the treatment of pain. Examples of adjuvant pain medications include muscle relaxants, antidepressant medications (such as amitriptyline/Elavil or duloxetine/Cymbalta), anti-seizure medications (such as carbamazepine/Tegretol, gabapentin/Neurontin), topical anesthetic sprays, pain patches (Lidoderm and others), and nerve blocks with anesthetics.

Even caffeine has been used to enhance the pain-relieving effect of aspirin and acetaminophen. No single medication has been found to be appropriate for all forms of pain.

Finally, various combinations of many of the above have been used to successfully treat pain. For example, ice applications might be combined with a muscle relaxant and a non-opioid pain reliever to treat a specific type of back pain. Moreover, combining various analgesic medications can have additive effects that further reduce suffering. New treatments are on the horizon, but the key to optimal pain management will always be clear communication between the doctor and the patient.

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<http://www.medicinenet.com/script/main/art.asp?articlekey=40842>

Below are links to additional information available on MedicineNet.com:

Chronic Pain

http://www.medicinenet.com/chronic_pain/article.htm

Ice or Heat-Which should I apply?

<http://www.medicinenet.com/script/main/art.asp?articlekey=18347>

Sprains and Strains, Prevention and Treatment

<http://www.medicinenet.com/script/main/art.asp?articlekey=22549>

Pain Medications

(Listed alphabetically by generic name with brand name in parentheses)

The editors of MedicineNet have organized a listing with brief descriptions of some of the more popular pain medications in use today. They have been chosen according to the popularity of requests by Internet viewers seeking medication information on the MedicineNet.com (<http://www.medicinenet.com/>) health information Web Site. For more detailed information, go to the Internet link provided next to each medication.

The medications here are listed alphabetically by generic name, with brand names in parentheses. Generic and branded medications may differ in the amount of drug they contain, the absorption of the drug into the body, and the distribution of the drug throughout the body.

acetaminophen (brand name: Tylenol)—A pain reliever and fever reducer. The exact mechanism of action of acetaminophen is not known. Acetaminophen relieves pain by elevating the pain threshold (that is, by requiring a greater amount of pain to develop before it is felt by a person). Acetaminophen reduces fever through its action on the heat-regulating center of the brain.

Generic is available.

<http://www.medicinenet.com/acetaminophen/article.htm>

acetylsalicylic acid (brand names: Aspirin, Ecotrin)— Aspirin is a nonsteroidal anti-inflammatory drug (NSAID) effective in treating fever, pain, and inflammation in the body. As a group, NSAIDs are non-narcotic relievers of mild to moderate pain of many causes, including injury, menstrual cramps, arthritis, and other musculoskeletal conditions. Since the response to different NSAIDs varies from patient to patient, it is not unusual for a doctor to try different NSAIDs for any given condition.

Generic is available.

http://www.medicinenet.com/acetylsalicylic_acid/article.htm

carbamazepine (brand name: Tegretol)— Carbamazepine is an anti-seizure medication. Recurrent seizures (epilepsy) are divided into two main categories according to how much of the brain is involved, partial and generalized epilepsy (which includes petit mal, grand mal, and myoclonic epilepsy). Seizures are called "simple" if there is no loss of consciousness and "complex" if there is. Medicines that inhibit seizures are called anti-convulsants. Carbamazepine works as an anti-convulsant for partial and grand mal seizures by reducing or blocking certain responses in the brain.

Generic is available.

<http://www.medicinenet.com/carbamazepine/article.htm>

celecoxib (brand name: Celebrex)— A nonsteroidal anti-inflammatory drug (NSAID) that is used to treat arthritis and to relieve acute pain and the pain of menstrual cramps

(primary dysmenorrhea). Celecoxib differs from traditional NSAIDs in that it causes less inflammation and ulceration of the stomach and intestine (at least with short-term treatment) and does not interfere with the clotting of blood. NSAIDs have been found to prevent the formation and reduce the size of polyps in patients with the genetic disease familial adenomatous polyposis (FAP), in which the patient develops large numbers of colon polyps that invariably become malignant. Celecoxib is approved as a treatment, along with polyp removal, for patients with FAP.

Generic not available.

<http://www.medicinenet.com/celecoxib/article.htm>

Codeine (brand names: Empirin #2, 3, 4; Tylenol #2, 3, 4; Tylenol with Codeine Elixir)— Codeine is a narcotic pain reliever (analgesic). Its precise mechanism of pain relief is not clearly understood. Codeine is frequently combined with Tylenol or aspirin for more effective pain relief.

Generic is available.

<http://www.medicinenet.com/codeine/article.htm>

ibuprofen (brand names: Advil, Motrin, Medipren, Nuprin)— A traditional nonsteroidal anti-inflammatory drug (NSAID) that is effective in treating fever, pain, and inflammation in the body. As a group, NSAIDs are nonnarcotic relievers of mild to moderate pain of many causes, including injury, menstrual cramps, arthritis, and other musculoskeletal conditions.

Generic is available.

<http://www.medicinenet.com/ibuprofen/article.htm>

ketoprofen (brand names: Orudis, Oruvail)— Ketoprofen is a nonsteroidal anti-inflammatory drug (NSAID) effective in treating fever, pain, and inflammation in the body. As a group, NSAIDs are non-narcotic relievers of mild to moderate pain of many causes, including injury, menstrual cramps, arthritis, and other musculoskeletal conditions. Since the response to different NSAIDs varies from patient to patient, it is not unusual for a doctor to try different NSAIDs for any given condition.

Generic is available.

<http://www.medicinenet.com/ketoprofen/article.htm>

naproxen (brand names: Naprosyn, Napreelan, Anaprox, Aleve)— Naproxen belongs to a class of drugs called non-steroidal anti-inflammatory drugs (NSAIDs). Other members of this class include ibuprofen (Motrin), indomethacin (Indocin), nabumetone (Relafen) and several others. These drugs are used for the management of mild to moderate pain, fever, and inflammation. They work by reducing the levels of prostaglandins, chemicals that are responsible for pain, fever and inflammation. Naproxen blocks the enzyme that makes prostaglandins (cyclooxygenase), resulting in lower concentrations of prostaglandins. As a consequence, inflammation, pain and fever are reduced. Naproxen was approved by the FDA in December, 1991.

Generic is available.

<http://www.medicinenet.com/naproxen/article.htm>

Nonsteroidal Antiinflammatory Drugs (NSAIDs)— NSAIDs are used primarily to treat inflammation, mild to moderate pain, and fever. Specific uses include the treatment of headaches, arthritis, sports injuries, and menstrual cramps. Aspirin (also an NSAID) is used to inhibit the clotting of blood and prevent strokes and heart attacks in individuals at high risk. NSAIDs also are included in many cold and allergy preparations.

http://www.medicinenet.com/nonsteroidal_antiinflammatory_drugs/article.htm

oxycodone and acetaminophen (brand names: Percocet, Roxicet, Tylox)—

Oxycodone is a narcotic analgesic (pain-reliever) and a cough suppressant that is similar to codeine and hydrocodone. The precise mechanism of pain relief by oxycodone and other narcotics is not known. Acetaminophen is a non-narcotic analgesic and antipyretic (fever reducer). Acetaminophen relieves pain by elevating the pain threshold. It reduces fever through its action on the heat-regulating center of the brain. The combination of oxycodone and acetaminophen achieves greater pain relief than either taken separately. For more information on acetaminophen, please see acetaminophen (Tylenol).

Generic is available.

http://www.medicinenet.com/oxycodone_and_acetaminophen/article.htm

oxycodone (brand names: Oxycontin, Roxicodon) — Oxycodone is a narcotic pain-reliever and cough suppressant similar to codeine and hydrocodone. The precise mechanism of pain relief by oxycodone and other narcotics is not known. Oxycodone was approved by the FDA in 1976. The combination of oxycodone and acetaminophen (Percocet) achieves greater pain relief than either of the component medications taken separately.

Generic is available.

<http://www.medicinenet.com/oxycodone/article.htm>

propoxyphene and acetaminophen (brand names: Darvocet; Darvocet A500; Wygesic)— Propoxyphene is a medication for treating pain. It is an opioid analgesic (related to opium) chemically similar to methadone. The use of opium is at least 2300 years old. In 1806, the first alkaloid of opium was isolated by Serturmer. He called it morphine, after the Greek god of dreams, Morpheus. Codeine, another opioid analgesic was identified in 1832. Propoxyphene is half to two-thirds as potent as codeine, meaning that 90 to 120mg of propoxyphene provides as much pain relief as 60mg of codeine. This is comparable to the pain relief achieved by 600mg of aspirin. Opioid analgesics, including propoxyphene, reduce pain by blocking the receptors in the brain that are involved in the perception (sensing) of pain.

Acetaminophen is a non-narcotic analgesic (pain reliever) and antipyretic (fever reducer). Acetaminophen relieves pain by elevating the threshold for pain. It reduces fever through its action on the heat-regulating center of the brain. The combination of propoxyphene and acetaminophen achieves greater pain relief than either drug taken alone.

Generic is available.

http://www.medicinenet.com/propoxyphene_and_acetaminophen/article.htm

propoxyphene (brand name: Darvon)— Propoxyphene is a medication for pain. It is an opioid analgesic (related to opium) similar to methadone. The use of opium is at least 2300 years old. In 1806, the first alkaloid of opium was isolated by Serturmer. He called it morphine, after the Greek god of dreams, Morpheus. Codeine was identified in 1832. Propoxyphene is half to two-thirds as potent as codeine, meaning that 90 to 120mg of propoxyphene provides as much pain relief as 60mg of codeine. This is comparable to the pain relief achieved by 600mg of aspirin. Opioid analgesics, including propoxyphene, reduce pain by blocking the receptors in the brain that are involved in the perception (sensing) of pain. Because combinations of opioids (such as propoxyphene or codeine) and either aspirin or acetaminophen produce additive pain relieving effects, they are often found in combination in drugs.

Generic is available.

<http://www.medicinenet.com/propoxyphene/article.htm>

sumatriptan (brand name: Imitrex)— Sumatriptan is an antimigraine medicine. Migraine headaches are believed to result from dilatation of the blood vessels in the head. Sumatriptan causes constriction of the blood vessels, thus relieving migraine headache. While it is very effective in relieving migraine, it does not prevent or reduce the number of attacks of migraine.

Generic not available.

<http://www.medicinenet.com/sumatriptan/article.htm>

tramadol and acetaminophen (brand name: Ultracet)— Ultracet is a combination of two drugs, tramadol (Ultram) and acetaminophen (Tylenol, that is used to relieve moderate, acute pain such as pain following dental or surgical procedures. Tramadol and acetaminophen each relieve pain, but they do so by different mechanisms. Tramadol achieves pain relief in two ways. It binds to the μ -opioid receptor on nerves (the same mechanism that is responsible for the effectiveness of narcotics, such as morphine), and it also inhibits the reuptake of serotonin and norepinephrine by nerves. This inhibition may lead to reduced transmission of pain signals through the spinal cord to the brain. Acetaminophen achieves pain relief in the spinal cord and brain by increasing the threshold to pain, that is, by increasing the strength of the painful stimulus that is necessary in order to give rise to the sensation of pain. It does this by inhibiting an enzyme that makes prostaglandins. Ultracet was approved by the FDA in 2001.

Generic not available.

http://www.medicinenet.com/tramadol_and_acetaminophen/article.htm

tramadol (brand name: Ultram)— Tramadol is an effective pain reliever (analgesic). Its mode of action resembles that of narcotics, but it has significantly less potential for abuse and addiction than the narcotics. Tramadol is as effective as narcotics in relieving pain but does not depress respiration, a side effect of most narcotics. Tramadol is not a nonsteroidal antiinflammatory drug (NSAID), and does not have the increased risk of stomach ulceration and internal bleeding that can occur with the use of NSAIDs.

Generic is available.

<http://www.medicinenet.com/tramadol/article.htm>

zolmitriptan (brand name: Zomig)— Zolmitriptan is a drug for treating migraine headaches. Migraine headaches are believed to result from dilation of the blood vessels in the brain. Zolmitriptan causes constriction of the blood vessels and thereby relieves the pain of a migraine headache. While zolmitriptan is very effective in relieving migraine headaches, it does not prevent or reduce the number of headaches if taken prophylactically. Its mechanism of action and effectiveness are similar to those of sumatriptan (Imitrex). Zolmitriptan was approved by the FDA in November of 1997. Generic not available.

<http://www.medicinenet.com/zolmitriptan/article.htm>

For more detailed information and additional medications, visit

<http://www.medicinenet.com>

Pain Management Over-The-Counter (OTC) Drugs

MedicineNet.com: *Welcome to Doctors Dialogue, featuring the doctors of MedicineNet.com. This segment features Dr. Dennis Lee, Board certified in Internal Medicine and Gastroenterology, and Dr. William Shiel, Board certified in Internal Medicine and Rheumatology. Dr. Lee will be asking Dr. Shiel pertinent viewer submitted pain management-related questions.*

Dr. Lee: Many pain medications are available over-the-counter (without a prescription, or OTC) in the U.S. for short-term relief of joint pain, muscle aches, headache, menstrual cramps, and fever. These OTC analgesics are generally well tolerated and safe when used properly. But side effects do occur and in some instances can be serious. Today, we will ask Dr. William Shiel how to use these analgesics properly in order to minimize risks and side effects. We will also ask him to compare traditional pain relievers with the newer pain relievers, the selective COX-2 inhibitors.

What pain medications are available in this country without a doctor's prescription?

Dr. Shiel: There are two major classes of pain relievers available in this country without prescription; they are acetaminophen (Tylenol) and Non-steroidal anti-inflammatory drugs (NSAIDs).

Dr. Lee: What are Non-steroidal anti-inflammatory drugs?

Dr. Shiel: Non-steroidal anti-inflammatory drugs are medications that impair the production of prostaglandins in the body. Prostaglandins are natural compounds that are responsible for producing fever, pain, and inflammation.

Dr. Lee: Why are they called non-steroidal anti-inflammatory drugs?

Dr. Shiel: They are called non-steroidal anti-inflammatory drugs because they reduce inflammation without the side effects of steroids. Steroids (Prednisone, Cortisone, Medrol, etc.) are potent medications that reduce inflammation, but steroids have predictable and potentially serious side effects, especially with long-term use. Non-steroidal anti-inflammatory drugs do not have these steroid side effects.

Dr. Lee: Can you give me some examples of non-steroidal anti-inflammatory drugs that are available OTC?

Dr. Shiel: Yes, examples of OTC NSAIDs include ibuprofen (Advil, Motrin) and naproxen sodium (Aleve).

Dr. Lee: Are steroids such as Medrol, Prednisone, and Cortisone pain relievers?

Dr. Shiel: No, steroids are not pain relievers. But this is a common misconception Dr. Lee. Steroids, including Cortisone, are potent medications that reduce inflammation. And reducing inflammation can cause the pain to gradually subside. But steroids are not used specifically for quick pain relief.

Dr. Lee: How are over-the-counter NSAIDs different from NSAIDs that need prescriptions from the doctor?

Dr. Shiel: In fact, many over-the-counter NSAIDs have the same active ingredients as prescription NSAIDs. The difference is in the amount of active ingredient contained in each tablet or capsule, and in the dosing requirements (how often one has to take these per day).

For example, Aleve is available over-the-counter and contains 220mg of naprosen sodium per pill, while Naprosyn needs a doctor's prescription and may contain 375mg or 500 mg per pill.

Dr. Lee: Let me get back to the over-the-counter pain relievers. How is acetaminophen different from NSAIDs?

Dr. Shiel: Acetaminophen reduces pain and fever by acting on the brain. NSAIDs reduce pain and fever by reducing prostaglandin production and inflammation at the site of pain (ankle, knee, shoulder, etc.) Acetaminophen is generally considered easier on the stomach than NSAIDs.

Dr. Lee: How is aspirin different from the other NSAIDs like Aleve, Motrin or Advil?

Dr. Shiel: Aspirin, Aleve, Advil/Motrin are similar in reducing pain, fever and inflammation. But aspirin has more prolonged anti-platelet effect than the other NSAIDs.

Platelets are small particles in the blood that initiate blood clot formation. For example, a heart attack is usually caused by a blood clot blocking the flow of blood in an artery to the heart. Aspirin inhibits the platelets from forming blood clots, and therefore is being used in low dose to prevent heart attacks and strokes.

The other NSAIDs also have anti-platelet effects. But their anti-platelet action does not last nearly as long as aspirin.

Dr. Lee: Bill, how does one go about choosing an OTC pain reliever?

Dr. Shiel: Different people respond differently to pain relievers. Therefore, choosing the right pain reliever can be somewhat of a trial and error process. I recommend that patients use the pain reliever that has worked for them in the past. This will increase the likelihood of effectiveness and decrease the risk of any side effects.

Dr. Lee: For a healthy adult, like myself, is it safe to use over-the-counter pain relievers for toothache or muscle pain, fever or occasional aches and pains?

Dr. Shiel: Over-the-counter pain relievers have been shown to be safe and effective for short-term relief of pain when used properly according to the label instructions. By short-term I mean no more than ten days. Anybody with persisting or severe pain ought to consult a doctor for proper evaluation and accurate diagnosis.

Dr. Lee: Any special precautions while using acetaminophen?

Dr. Shiel: Even though acetaminophen is safe and well tolerated, it can cause severe liver damage and liver failure in high (toxic) doses. You and I have both taken care of patients with liver failure as a result of acetaminophen overdose in suicide attempts. Acetaminophen can also damage the kidneys when taken in high amounts. Therefore, it is crucial that acetaminophen not be taken more frequently or in higher quantities than recommended on the label of the bottle or container.

I also do not recommend acetaminophen to patients with existing liver disease, and in those who regularly consume moderate to heavy quantities of alcohol.

Dr. Lee: You brought up a very important issue. Even though most of us know that acetaminophen can cause serious liver damage in toxic doses, not many people realize that even non-toxic doses of acetaminophen can cause liver damage in people who regularly drink alcohol in moderate to heavy amounts.

Ten years ago, I took care of a 30 year old gentlemen who mysteriously developed acute liver failure and coma after taking multiple doses of acetaminophen for "flu" symptoms over the weekend. Fortunately, the doctors at a nearby liver transplant center were able to perform emergency liver transplantation. He is doing very well now. While the exact cause of his liver failure remains a mystery, I strongly suspect it was caused by the combination of moderate alcohol use along with excessive though non-toxic amounts of acetaminophen intake.

Let me make another important point. Many over-the-counter cold and flu remedies contain either aspirin or acetaminophen along with other active ingredients. Always study the active ingredients or consult the pharmacist before using them, especially if you drink alcohol regularly or have existing heart, liver, or kidney diseases.

Any special precautions while using aspirin?

Dr. Shiel: Yes, aspirin should especially be avoided by children and teenagers with chickenpox and "flu" because of risk of Reye Syndrome, a potentially serious medical condition.

Aspirin should be avoided by patients who are taking blood-thinning medications such as

Coumadin because it can increase the risk of bleeding. I also do not recommend aspirin for patients with active ulcers of the stomach or bowels because it can impair ulcer healing, aggravate ulcers, and also increase the risk of ulcer bleeding.

I also do not recommend aspirin to patients who have a history of balance disorders or hearing difficulties because aspirin potentially can aggravate these conditions.

Dr. Lee: Any special precautions while using non-aspirin OTC NSAIDs?

Dr. Shiel: Patients taking blood thinners, such as Coumadin, should not take OTC NSAIDs without doctor supervision. NSAIDs can increase the risk of bleeding.

Patients with active ulcers should not take OTC NSAIDs because NSAIDs can impair ulcer healing, aggravate ulcers, and also increase the risk of ulcer bleeding.

Dr. Lee: As a gastroenterologist taking care of patients with liver disease, I also do not recommend NSAIDs to my patients with advanced liver disease. Patients with advanced liver disease also have impaired kidney function. I'm concerned about the effect of NSAIDs on the kidneys in these patients. Any worsening of kidney function in these patients can cause rapid and life-threatening deterioration of their liver disease.

Are there any other conditions you can think of that should lead to cautious use of NSAIDs?

Dr. Shiel: Yes Dennis, you bring up an excellent point. I recommend that patients with underlying heart disease, kidney disease and the elderly consult their doctors prior to using any over-the-counter medication.

Dr. Lee: Let's now go to the areas of prescription use of pain relievers and NSAIDs. Firstly, Bill, what are the NSAIDs that are available by prescription only?

Dr. Shiel: There are more than twenty prescription NSAIDs currently available in the United States, and the number is growing as new NSAIDs are added to the market yearly. Examples of traditional prescription NSAIDs include Feldene, Naprosyn, Indocin, Tolectin, Clinoril, Relafin, and Voltaren. Then, there are the newer selective NSAIDs called COX-2 inhibitors such celecoxib (Celebrex.)

Dr. Lee: What are the selective COX-2 inhibitors?

Dr. Shiel: COX-2 inhibitors are different from the traditional NSAIDs. Traditional NSAIDs reduce pain and inflammation but they also reduce prostaglandins in the stomach. A decrease in stomach prostaglandins increases the risk of stomach ulceration. COX-2 inhibitors such as Celebrex reduce pain and inflammation without reducing the prostaglandins in the stomach. Patients who take COX-2 inhibitors have been shown to have less bleeding from ulceration than those who take traditional NSAIDs.

Dr. Lee: I gather you mean that the COX-2 inhibitors generally have less stomach side effects than the traditional NSAIDs. But how about pain and inflammation relief? Are they just as good, better, or worse than traditional NSAIDs?

Dr. Shiel: The selective COX-2 inhibitors have been shown to be equally effective as the traditional NSAIDs. This means that they have been shown to be as potent as traditional NSAIDs in relieving pain and inflammation.

Dr. Lee: How do you decide when to use a COX-2 inhibitor and when to use a non-selective traditional NSAID in treating your patients with arthritis?

Dr. Shiel: It is important to understand that selection of anti-inflammation medicines for arthritis has to be individualized. The doctor must consider the type and severity of the arthritis, patient's age, prior side effects and responses to different NSAIDs, as well as any co-existing medical conditions such as heart, kidney, and liver disease.

After making the proper selection, the doctor will try to use the lowest effective dose of the medicine in order to minimize risks and side effects.

For example, if a patient has a history of ulcer bleeding and needs long term NSAIDs, I would prefer to use the selective COX-2 inhibitor Celebrex. Alternatively, I will consider combining a traditional NSAID with Prilosec or Cytotec, medications that can protect the stomach from ulcerations.

Dr. Lee: In your experience Bill, how effective are NSAIDs in reducing pain, inflammation and helping your patients function?

Dr. Shiel: In my patients with arthritis and chronic inflammation, NSAIDs can be critical to maintain daily functions and sense of well being. Many of my patients report significant flare of pain and arthritis if they miss just one dose. NSAIDs are essential part of treatment of the inflammation of chronic arthritis.

Dr. Lee: What happens when NSAIDs don't do the trick, and the pain and the inflammation persists?

Dr. Shiel: In the setting of intense pain or persistent pain, in patients who are already taking NSAIDs, we can supplement with short-term narcotic pain relievers. The reason we prefer to use narcotics short-term is because narcotics have the potential for habituation, which means the patient may require higher and higher doses for pain relief, and that they become habit forming.

Dr. Lee: What are some of the examples of narcotic pain relievers that you use?

Dr. Shiel: Typical narcotic pain relievers that we use include Codeine or Codeine derivatives and Darvocet or related medications to Propoxaphine and Ultram.

Dr. Lee: Thank you, Bill, for sharing with us your perspective on proper use of pain relievers in your practice and also for reviewing the use of over-the-counter pain relievers.

Dr. Shiel: Thank you Dennis for your questions.

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The doctor-produced articles on MedicineNet are:

- **Reliable and objective** -- each article is written, edited, and reviewed by more than one U.S. Board Certified doctor.
- **User-friendly** -- articles are written by doctors in easy-to-understand language.
- **Comprehensive** -- doctors not only present scientific knowledge, they also explain how they make treatment and diagnostic decisions.
- **Relevant** -- doctors select articles and news items that are clinically relevant.

MedicineNet Home Page

<http://www.medicinenet.com>

Diseases and Conditions

http://www.medicinenet.com/diseases_and_conditions/article.htm

Symptoms and Signs

http://www.medicinenet.com/symptoms_and_signs/article.htm

Procedures and Tests

http://www.medicinenet.com/procedures_and_tests/article.htm

Medications (non-prescription and prescription drugs)

<http://www.medicinenet.com/medications/article.htm>

MedTerms Online Medical Dictionary

<http://www.medterms.com>

Please pass this guide along to your friends and family.