

# What Are NSAIDs?

Nonsteroidal anti-inflammatory drugs, or NSAIDs (pronounced en-saids), are the most prescribed medications for treating conditions such as arthritis. Most people are familiar with over-the-counter, nonprescription NSAIDs, such as aspirin and ibuprofen.

NSAIDs are more than just pain relievers. They also help reduce inflammation and lower fevers. They prevent blood from clotting, which is good in some cases but not so beneficial in others.

For example, because they reduce clotting action, some NSAIDs, especially aspirin, may have a protective effect against heart disease. However, you may bruise more easily. NSAIDs can increase the risk of developing nausea, an upset stomach, or an ulcer. They also may interfere with kidney function.

## Risks

Tell your physician if you are pregnant, have high blood pressure, asthma, or a history of kidney or liver disease, or have had ulcers in the past. People older than 65 years of age must be especially careful when taking NSAIDs. Also tell your doctor about other medications you are taking. NSAIDs may intensify or counteract the effects of some medications. Both the risk and the severity of side effects increases the longer you take NSAIDs.

## How They Work

NSAIDs work by preventing an enzyme (a protein that triggers changes in the body) from doing its job. The enzyme is called cyclooxygenase, or COX, and it has two forms. COX-1 protects the stomach lining from harsh acids and digestive chemicals. It also helps maintain kidney function. COX-2 is produced when joints are injured or inflamed.

Traditional NSAIDs block the actions of both COX-1 and COX-2, which is why they can cause stomach upset and bleeding as well as ease pain and inflammation.

Here are some common traditional NSAIDs:

Generic Name	Brand Names
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Aspirin	Made by several companies
Ibuprofen	Motrin®, Advil®, Motrin IB®
Naproxen	Naprosyn®, Aleve®
Nabumetone	Relafen®

Source: American Academy of Family Physicians, 2008

NSAIDs come in different strengths and formulas. Some may work better for you than others. Your physician can help you find the dose and medication that works best for you.

Generally, you should take NSAIDs with food or a glass of milk and should avoid drinking alcohol while you are taking NSAIDs.

## COX-2 Inhibitors

COX-2 inhibitors are a special category of NSAIDs. These medications target only the COX-2 enzyme that stimulates the inflammatory response. Because they do not block the actions of the COX-1 enzyme, these medications generally do not cause the kind of stomach upset or bleeding that traditional NSAIDs do. COX-2 inhibitors also do not offer the same kind of protection against heart disease.

COX-2 inhibitors include:

Generic Name	Brand Names
Celecoxib	Celebrex®
Rofecoxib	Vioxx®*
Valdecoxib	Bextra*

\* Vioxx was withdrawn from the market by its manufacturer in 2004.

\* Bextra was withdrawn from the market by its manufacturer in 2005.

Source: Food and Drug Administration

If you are taking a COX-2 inhibitor, you should not use a traditional NSAID (prescription or over-the-counter). Be sure to tell your doctor if you have had a heart attack, stroke, angina, blood clot or hypertension or if you are sensitive to aspirin, sulfa drugs, or other NSAIDs.

COX-2 inhibitors are not without side effects, which can include abdominal pain, nausea, and indigestion. Antacids or a fatty meal can limit the body's ability to absorb and use COX-2 inhibitors, so do not take them together. In rare cases, severe side effects including abdominal bleeding can occur without warning.

## Treatment Applications

NSAIDs are frequently used to treat inflammatory conditions such as arthritis, bursitis and tendonitis. NSAIDs are relatively inexpensive and are frequently the first line of medication used to relieve pain and reduce inflammation.

Very low doses of NSAIDs may be prescribed for people with cardiac disease.

COX-2 inhibitors are more expensive than traditional NSAIDs. They are often prescribed for long-term conditions such as arthritis because they may be safer for the stomach. However, some studies have not shown any difference between the incidence of gastrointestinal side effects from traditional NSAIDs and COX-2 inhibitors.

Recent studies have indicated that both NSAIDs and COX-2 inhibitors may have a delaying effect on bone healing but the extent of this effect is not yet known. Short-term use of NSAIDs after a fracture or orthopaedic surgery is generally safe.

### **Last Reviewed**

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