HEALTH BASICS

Nsaids

NSAIDs are medicines that reduce pain, inflammation, and fever.

WHAT IT IS
Medicines that reduce pain, inflammation, and fever

WHERE IT COMES UP
Over-the-counter and prescription pain treatment

WHY IT MATTERS
Pain relief with possible stomach, kidney, and heart effects

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
Pharmacist, primary care clinician, or prescribing specialist

HOW IT IS CHECKED
Medication review; sometimes blood pressure, kidney tests, or blood counts

Overview

NSAIDs are a group of medicines used to reduce pain, inflammation, and fever. The name stands for nonsteroidal anti-inflammatory drugs like ibuprofen or naproxen .

Common NSAIDs include ibuprofen, naproxen, diclofenac, celecoxib, and aspirin. Some are sold without a prescription. Others require one. They may come as tablets, capsules, liquids, gels, creams, suppositories, or injections.

NSAIDs are often used for short-term problems such as sprains, dental pain, period pain, and headaches. They may also be used for longer-lasting conditions involving inflammation, including some forms of arthritis.

NSAIDs are medicines, not a disease or diagnosis. They are also not all interchangeable. Their duration of action, uses, and risks can differ.

Acetaminophen, also called paracetamol, is not an NSAID. It can reduce pain and fever but has little anti-inflammatory effect. Aspirin is an NSAID, although low-dose aspirin has a separate role in preventing certain blood clots when prescribed for that purpose.

How it works

Inflamed or injured tissue produces chemicals called prostaglandins . These chemicals contribute to pain, swelling, fever, and tenderness.

NSAIDs reduce prostaglandin production by blocking enzymes called cyclooxygenase, usually shortened to COX . Some mainly target the COX-2 enzyme, while others affect both COX-1 and COX-2.

Prostaglandins have useful jobs as well. They help protect the stomach lining, support blood flow through the kidneys, and influence blood vessels and blood clotting. Reducing them can relieve pain, but it also explains many NSAID side effects.

Aspirin has a longer-lasting effect on platelets, the blood cells involved in clotting. This is why prescribed low-dose aspirin is used differently from an occasional pain reliever. Do not start, stop, or replace prescribed aspirin without checking with the clinician responsible for it.

Topical NSAIDs, such as diclofenac gel, act mainly near the area where they are applied. Less medicine usually reaches the bloodstream than with tablets, but topical products can still cause side effects and interact with other medicines.

Why it matters for your health

NSAIDs can make movement, sleep, and daily activities easier when pain or inflammation is limiting them. Whether one is suitable for you depends on the reason for using it, how long you need it, and your other health conditions and medicines.

The main safety concerns involve the stomach and intestines, kidneys, heart, circulation, and allergic reactions. Risk may be higher with longer use, larger amounts, older age, or certain medical conditions. Taking more than one NSAID can also increase harm without providing better relief.

Particular care is needed if you have had:

Medicines that can affect NSAID safety include blood thinners, antiplatelet medicines, corticosteroids like prednisone or hydrocortisone , some antidepressants like sertraline or fluoxetine , diuretics or "water tablets," and some blood pressure medicines. This is not a complete list. A pharmacist can check your full medication record, including supplements and nonprescription products.

NSAIDs also require special attention during pregnancy. The US Food and Drug Administration advises avoiding them from 20 weeks of pregnancy unless a clinician specifically recommends them. Later use can create additional risks. If you are pregnant or could be pregnant, check

before using an NSAID.

- A stomach ulcer or digestive-tract bleeding
- Kidney, heart, or liver disease
- High blood pressure, a heart attack, or a stroke
- Asthma or a previous reaction to aspirin or another NSAID
- A bleeding disorder

What can go wrong

NSAIDs can irritate the digestive tract. This may lead to indigestion, inflammation of the stomach lining, a peptic ulcer , or bleeding from the stomach or intestines. Serious bleeding can occur without much warning.

Reduced blood flow through the kidneys can cause acute kidney injury , meaning a sudden decline in kidney function. This is more likely during dehydration, vomiting, diarrhea, or severe illness. People with existing kidney or heart disease may be more vulnerable.

NSAIDs can cause fluid retention, ankle swelling, and higher blood pressure. They may worsen heart failure. Except for aspirin used for specific medical reasons, NSAIDs can also increase the chance of heart attack or stroke. These events can occur early in treatment, although the individual level of risk is not the same for everyone.

Some people develop an allergic reaction or an asthma flare after taking an NSAID. Rarely, serious skin or liver reactions occur.

During pregnancy, NSAID exposure from around 20 weeks can affect fetal kidney function and reduce the fluid surrounding the fetus. Later in pregnancy, it may also affect an important fetal blood vessel.

Seek emergency help for:

Seek urgent medical advice for a major reduction in urine, rapidly increasing swelling, severe abdominal pain, yellow skin or eyes, or a widespread blistering rash.

For routine follow-up, discuss recurring indigestion, rising blood pressure, ankle swelling, or a need to use an NSAID most days. These are not always emergencies, but they may mean your medicine or monitoring needs review.

- Trouble breathing, facial or throat swelling, or collapse
- Chest pressure, sudden one-sided weakness, or difficulty speaking

- Vomiting blood or material resembling coffee grounds
- Black, sticky stools, especially with weakness or fainting

What you can do

Read the active-ingredient section on every medicine label. Cold, flu, period-pain, and combination pain products may already contain ibuprofen, naproxen, aspirin, or another NSAID.

Do not take two NSAIDs together unless a clinician has specifically told you to. This includes combining a prescription NSAID with an over-the-counter product. Taking acetaminophen with an NSAID is a different situation, but you should still check that it is appropriate and that no combination product duplicates it.

Keep an up-to-date list of your medicines, including gels, nonprescription products, vitamins, and supplements. Show it to a pharmacist or clinician before starting an NSAID.

Ask whether an NSAID is suitable if you have kidney disease, heart disease, high blood pressure, a previous ulcer, asthma triggered by pain medicines, or if you take a blood thinner. Also ask before use during pregnancy or while trying to become pregnant.

Follow the product label or prescription. Do not exceed the stated amount or continue longer than directed. Taking an NSAID with food may reduce stomach upset, but it does not reliably prevent ulcers or bleeding.

If you use an NSAID regularly, ask whether you need blood pressure checks, kidney-function blood tests, or a blood count to look for anemia from hidden bleeding. There is no single test required for every NSAID user.

Avoid becoming dehydrated. If you develop significant vomiting, diarrhea, or difficulty drinking fluids, ask a pharmacist or clinician whether to pause the NSAID and whether other medicines need review.

Common questions

Are ibuprofen and naproxen the same medicine?

No. Both are NSAIDs, but they have different active ingredients and durations of action. Do not combine them.

Is acetaminophen an NSAID?

No. Acetaminophen reduces pain and fever but does not belong to the NSAID group. It has different risks, including liver injury if too much is taken.

Does taking an NSAID with food make it safe?

Food may ease nausea or indigestion. It does not remove the risk of an ulcer, internal bleeding, kidney injury, heart attack, or stroke.

Are NSAID gels risk-free?

No. Topical products usually produce lower blood levels than tablets, but some medicine is still absorbed. Follow the label, avoid applying more than directed, and include the gel on your medication list.

Is low-dose aspirin treated like other NSAIDs?

Not always. Low-dose aspirin may be prescribed to reduce blood clot formation after certain heart or circulation problems. Other NSAIDs can increase bleeding risk and may interfere with aspirin's effect. Check before combining them, and do not stop prescribed aspirin on your own.

Can children take NSAIDs?

Some NSAIDs have products intended for children, but the correct product and amount depend on age, weight, and the medical situation. Aspirin should not be given to children or teenagers with a viral illness unless specifically directed because of the risk of Reye syndrome, a rare but serious condition.

Sources

- US Food and Drug Administration: FDA strengthens warning that non-aspirin NSAIDs can cause heart attacks or strokes
- US Food and Drug Administration: Avoid NSAIDs in pregnancy at 20 weeks or later
- NHS: Non-steroidal anti-inflammatory drugs
- MedlinePlus, US National Library of Medicine: Pain relievers
- National Institute of Diabetes and Digestive and Kidney Diseases: Keeping kidneys safe when using medicines