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# Pain Relievers and Your Heart

*Every NSAID raises the risk of heart attack, stroke and heart failure, and the size of that risk varies a lot from drug to drug.*

**2×**
the risk of a heart failure flare, roughly, with every NSAID

**40 to 50%**
more major heart and vessel events on diclofenac, roughly

**Week 1**
the added risk can show up within the first week of taking them

HOW THEY STRAIN THE HEART

## Clots, blood pressure and fluid

**NSAID**
blocks the COX-2 enzyme

→

**Less prostacyclin**
the substance in vessel walls that keeps them relaxed and keeps platelets from sticking together

→

- **Clots form more readily** — a cracked plaque is more likely to close the artery
- **Blood pressure rises** — often by several points, from holding on to salt and water
- **Fluid builds up** — strains a weak heart, a classic trigger for a heart failure flare

NSAIDs (nonsteroidal anti-inflammatory drugs) include ibuprofen (Advil, Motrin), naproxen (Aleve), diclofenac (Voltaren), meloxicam (Mobic) and celecoxib (Celebrex). The harm is small in a healthy person and dangerous in a heart that's already compromised.

DO ALL NSAIDS RAISE HEART RISK EQUALLY?

## Some are much riskier than others

More heart risk ↓ Less heart risk

| | | |
|---|---|---|
| **Ketorolac** (Toradol) | Highest, short-term | highest risk of any single NSAID |
| **Diclofenac** (Voltaren) | High | roughly 40 to 50% more major events |
| **Ibuprofen, high dose** (2400 mg/day) | Moderate to high | more than doubled major coronary events |
| **Celecoxib, moderate dose** (Celebrex) | Lower than expected | no worse than ibuprofen or naproxen |
| **Meloxicam** (Mobic) | Relatively favorable | fewer large trials behind it |
| **Naproxen** (Aleve) | Lowest, traditionally | no clear increase in major events |

**Order follows the studies in the article. No NSAID is free of heart risk.**

**Lowest dose, shortest time**

If you have coronary disease, a prior heart attack, heart failure or treated high blood pressure, treat these pills as a real medical decision. If you need an oral NSAID, choose it with your cardiologist.

HANDLING PAIN WHEN YOUR HEART IS INVOLVED

# A safer pain plan, step by step

## START WITH THE SAFEST OPTIONS

the guideline ladder, top to bottom

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| **Non-drug measures first** | Physical therapy, heat and ice, exercise, weight loss, a Mediterranean diet and topical agents, always tried before any pill. |
| **Acetaminophen (Tylenol)** | The first-line drug, with no meaningful heart risk at recommended doses, though it does less for a swollen joint. For your liver, generally stay at or below 3,000 to 4,000 mg a day. |
| **Non-acetylated salicylates** | Older anti-inflammatories with a gentler profile for the heart and blood vessels. |
| **Naproxen** | The preferred NSAID when one is truly needed, at the lowest dose that works. |
| **Other NSAIDs, briefly** | Moderate-dose celecoxib or meloxicam, while avoiding diclofenac and high-dose ibuprofen. |

## HIGHEST RISK FROM NSAIDS

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| **Heart attack or coronary disease** | Already prone to plaque rupture and clots. After a heart attack, avoid NSAIDs. If one can't be avoided, celecoxib or meloxicam carried the lowest risk in one study. |
| **Heart failure** | Fluid retention triggers hospital stays and works against diuretics. For most heart failure patients, oral NSAIDs are best avoided entirely. |
| **High blood pressure** | NSAIDs raise pressure, usually by 3 to 5 mmHg, and blunt ACE inhibitors, ARBs and diuretics. |
| **Blood thinner or antiplatelet** | Avoid NSAIDs with warfarin, a DOAC such as Eliquis, or an antiplatelet such as clopidogrel. On two antiplatelets after a stent, even under 3 days of an NSAID raised bleeding. |
| **Kidney disease, older age** | Less blood flow to the kidneys, and more heart, kidney and stomach vulnerability with age. |

## COMMON TRAPS

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| **Adding aspirin** | A daily baby aspirin doesn't reliably cancel the clot risk, and the combination raises the risk of a stomach bleed. Ibuprofen taken close to aspirin can also blunt aspirin's protection. |
| **"Just a short course"** | The risk can start in the first week. A few days for an injury is far lower risk than daily use for weeks or months. |
| **Voltaren gel** | The rubbed-on gel, now sold over the counter in the US, puts far less drug in the bloodstream. It's a reasonable option for one sore joint, while the tablets carry the high heart risk. |

## HEART FAILURE WARNING SIGNS

| | |
|---|---|
| **Call 911** | Breathlessness at rest, waking up gasping, pink frothy sputum, chest pain or fainting. |
| **Call the same day** | Weight up about 2 to 3 lb in a day or 5 lb in a week, new or worse swelling, or more pillows to breathe at night. |

## MENTION THE ADVIL

People list their prescriptions carefully and leave off the pain reliever from the grocery store. Tell your cardiologist about every one you take. If your home blood pressure creeps up after starting a daily pain pill, the pill is a prime suspect.

## READ THE FULL ARTICLE

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nsaids-and-the-heart

For education only, and not a substitute for advice from your own physician. Sources include the CNT Collaboration (Lancet 2013), PRECISION (NEJM 2016), Bally et al. (BMJ 2017), Schmidt et al. (BMJ 2018), Kang et al. (JACC 2020), the SOS Project studies and the 2014 AHA/ACC guideline.

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