

Pain relievers

Pain relievers (analgesics) are common medicines that many people use at some time in their lives. There are two broad categories of analgesics:

- **Non-opioid** – such as aspirin and paracetamol, mainly used for mild to moderate pain
- **Opioid** – such as morphine and oxycodone, mainly used for severe pain.

The side effects and potential problems related to using opioid (narcotic) analgesics, such as addiction and overdose, are generally well known. However, most people assume that non-opioid (non-narcotic) analgesics are harmless. In fact, over-the-counter pain relievers can cause unwanted side effects and some can be quite serious, particularly if the medicine is taken in large doses over a long period of time.

Pain receptors

Pain receptors are attached to two main types of nerves – one relays messages quickly (resulting in a sharp, acute pain) and the other relays messages slowly (resulting in a dull, throbbing pain). Some areas of the body have more pain receptors than others. For example, the skin is loaded with receptors that can give specific information on the exact location and type of pain, while the relatively few receptors in the gastrointestinal tract (gut) means it is harder to pinpoint the precise location of a stomach ache.

The message relay

The sensation of pain is relayed from pain receptors in the body, along nerves, to the spinal cord and brain for interpretation. The spinal cord receives the message and sends it to a structure in the brain called the thalamus. The thalamus also contributes to mood and arousal, which helps to explain why our interpretation of pain partly depends on our state of mind. The pain message is then delivered to the brain's cerebral cortex.

Interestingly, some people who have injuries to areas of their cerebral cortex still experience pain, but don't care so much about it.

How analgesics work

Analgesics work in various ways. For example, opioid analgesics alter pain messages by influencing brain chemistry, which is why these drugs tend to be addictive. Aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs) work by blocking an enzyme in the body needed to create prostaglandins. Prostaglandins are chemicals, which trigger physiological changes like increased temperature and dilation of blood vessels. They also cause an increased sensitivity to pain.

Blocking the action of prostaglandins reduces fever, inflammation and pain. However, prostaglandins also help the stomach lining to resist gastric acid, which is why aspirin and NSAIDs can cause stomach irritation and bleeding in some people.

Side effects of pain relieving medicines

Some of the side effects of common analgesics include:

- **Paracetamol** can cause skin rash, liver and kidney damage (if used in large doses for a long time).
- **Aspirin** – can cause stomach irritation, allergic reactions in susceptible individuals (such as triggering an asthma attack), tinnitus (ringing in the ears), kidney damage (if used in large doses for a long time) and reduced blood-clotting ability.

- **Non-steroidal anti-inflammatory drugs (NSAIDs)** can cause headache, nausea, stomach irritation and upsets, skin rashes, fatigue, dizziness and sleep problems.
- **Combination analgesics** such as preparations that contain paracetamol and codeine, can cause nausea, vomiting, constipation, dizziness, liver and kidney damage (if used in large doses for a long time).
- **Opioid analgesics** such as morphine, oxycodone and codeine can cause nausea, vomiting, constipation, drowsiness, reduced physical coordination and balance.

General cautions

Over-the-counter analgesics need to be treated with respect and caution, just like any other drug. It's always a good idea to discuss any medication with your doctor. General suggestions include:

- Don't self-medicate with analgesics during pregnancy – some medications can reach the fetus through the placenta and potentially cause harm.
- Don't give children over-the-counter analgesics unless you have been advised to do so by your doctor or pharmacist.
- Don't give children adult medicines – they don't metabolise drugs in the same way as adults. A medication that works for an adult may not work for a child, or it may cause dangerous side effects.
- Make sure you administer the correct dose for your child's weight and age according to instructions on the label.
- Keep all medicines out of reach of children.
- Take care if you are elderly or caring for an older person. Older people have an increased risk of unwanted side effects. For example, taking aspirin regularly for chronic pain (such as arthritis) can cause a dangerous bleeding stomach ulcer.
- Always tell your pharmacist about any prescription medicines you are taking so they can help you choose a safe analgesic. Over-the-counter medicines can interact with other medicines, possibly to stop them working correctly and sometimes dangerously.
- Don't take more than one over-the-counter medicine at a time, or you may unintentionally take an overdose. For example, many 'cold and flu' tablets already contain paracetamol, so it is important not to take any other paracetamol-containing medicine to avoid an overdose.
- See your doctor or health care professional for proper treatment for sport injuries; don't use pain reliever medicines to 'tough it out'.
- Consult your doctor or pharmacist before using any over-the-counter medicine if you have a chronic physical condition, such as heart disease or diabetes.

Pain relief without medicine

Other ways to relieve pain either alone or with the help of pain-relieving medicines include:

- Acupuncture
- Biofeedback therapy
- Hot and cold compresses
- Local anaesthetic creams
- Meditation
- Therapeutic ultrasound
- Transcutaneous electrical nerve stimulation (TENS).

Where to get help

- Your doctor
- Pharmacist
- National Prescribing Service,
- Australian Drug Foundation Tel. 1300 85 85 84 (for information); 1800 888 236 (for counselling and referral)

Things to remember

- There are two broad categories of analgesics: non-narcotic (such as aspirin) and narcotic (such as morphine).

- Pain-reliever medicines (analgesics) are common medicines most people use from time to time.
- Over-the-counter pain relievers can cause a range of unwanted side effects, particularly if they are taken in large doses over a long period of time.

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