



## NSAIDs in high risk groups

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### Introduction

There are a range of over-the-counter (OTC) medications that may be purchased without a prescription to relieve or treat short-term pain such as headache or minor injuries including sprains and strains. This does not mean that they are completely free of side-effects as each different pain medication has advantages and risks. Some types of pain respond better to certain medicines than others. Each person may also have a slightly different response to a pain reliever.

### OTC pain medications

The two main types of OTC pain medicines are paracetamol and nonsteroidal anti-inflammatory drugs (NSAIDs). Paracetamol and NSAIDs provide relief in mild to moderate pain. Superficial and musculoskeletal pain responds most favourably to these mild analgesics. A combination of paracetamol and ibuprofen may be an appropriate option for stronger pain relief. There are wide individual variations in analgesic requirements and responses to analgesics. These may be affected by the source of the pain, emotional and psychological factors. OTC medicines should not be taken in higher doses or longer than the package insert recommends.

#### Paracetamol

Paracetamol is one of the most commonly used OTC medications and is effective, if used correctly. When taken as directed, it is generally well-tolerated by most people and at typical doses has fewer side-effects than NSAIDs. When taking paracetamol and other medications concurrently, it is important to check that none of the other medicines contain the same active ingredient, as paracetamol may cause serious liver damage if taken in larger doses than recommended (e.g. OTC cold and flu medicines or arthritis medications may contain paracetamol). The mechanism of

analgesic action is not completely established. It is known to inhibit prostaglandin synthesis in the brain, but not peripherally, explaining its lack of anti-inflammatory properties.

#### NSAIDs

NSAIDs are commonly used to manage the pain and inflammation (swelling and redness) associated with musculoskeletal disorders, including muscle and bone injuries and painful inflammatory conditions such as arthritis. They are also used to treat non-inflammatory conditions such as toothache, period pain, migraine and postoperative pain. Some commonly used NSAIDs include ibuprofen, diclofenac, naproxen and aspirin. NSAIDs such as ibuprofen, naproxen and mefenamic acid are beneficial in the management of dysmenorrhoea. Aspirin is a NSAID with 'blood-thinning' properties. It may be used in low doses to reduce the risk of heart attack and stroke in high-risk patients.

Because of the wide availability and frequency of use of NSAIDs, it is important to be aware of their proper use, dose, and potential side-effects. It can be difficult to know which NSAID is best for a given individual. In addition, a person's response to a particular NSAID is hard to predict. If two people take identical drugs and doses, their individual responses may be considerably different. Lower doses of OTC NSAIDs are adequate to relieve pain in most people. NSAIDs should be used at the lowest dose that improves symptoms and only for a short period of time.

#### How NSAIDs work

Prostaglandins are hormone-like chemicals in the body that contribute to pain and inflammation by raising temperature and dilating blood vessels. This causes redness and swelling in the area where they are released. NSAIDs block an enzyme called cyclooxygenase used by the body to make prostaglandins. By inhibiting the effects of prostaglandins, NSAIDs help relieve associated pain and reduce inflammation.

#### Side-effects of NSAIDs

Most patients tolerate NSAIDs without any difficulty. However, NSAIDs may cause unwanted side-effects in some people. In general, using NSAIDs occasionally rather than every day, and at the

lowest dose possible, reduces the chances of developing serious side-effects.

Short-term use of NSAIDs may cause stomach upset (including nausea), indigestion or stomach pain. Long-term use of NSAIDs, especially at high doses, may lead to peptic ulcer disease and bleeding in the stomach and other parts of the gastrointestinal tract, increased blood pressure, kidney impairment and fluid retention. NSAIDs may also increase bleeding risk and worsen asthma. NSAIDs (with the exception of low-dose aspirin) may also increase the risk of heart attack and stroke, even in healthy people. Ringing in the ears (tinnitus) is common in people who take high doses of aspirin, although it is uncommon for this to occur in people who take other NSAIDs. The ringing usually resolves when the dose is decreased.

### *Reducing ulcer risk*

The risk of developing ulcers may be reduced by taking an anti-ulcer medication (e.g. ranitidine or pantoprazole) in addition to a NSAID.

### *NSAIDs in high-risk groups*

Some patients are at higher risk of developing serious complications from taking NSAIDs. The following factors should be considered:

- Increasing age – side-effects are more common in people aged 65 years and over.
- Drug interactions – taking certain other medicines while taking NSAIDs may increase the risk of NSAID side-effects.
- Taking high doses of NSAIDs.
- Taking NSAIDs for more than a few days at a time.
- Medical conditions – having particular heart problems (for example, heart failure), high blood pressure, diabetes or kidney disease.
- Previous or current gastrointestinal problems such as ulcers or bleeding.
- Pregnancy or breastfeeding – certain pain medicines may not be suitable for use during pregnancy.
- Children under the age of 16 should not take aspirin due to the life-threatening condition called Reye's syndrome.
- People who have had hives (urticaria) or other symptoms of an allergy to aspirin should generally avoid NSAIDs, unless they have specifically discussed their reaction with a healthcare provider. People with certain types of reactions to one NSAID may be able to take another type safely.

### *Interactions with other medications*

NSAIDs may interact with other medicines to cause unwanted effects. When combined with another type of NSAID (including

low-dose aspirin) or with a corticosteroid medicine (for example, prednisolone), NSAIDs may increase the risk of gastrointestinal ulceration or bleeding. People taking one NSAID should not take a second NSAID at the same time because of the increased risk of side-effects. Some OTC medicines contain NSAIDs, for example, cold and flu medicines. If already taking a NSAID, the risk of side-effects or an accidental overdose is increased.

Patients using anticoagulant medications such as warfarin should generally not take NSAIDs or aspirin because of an increased risk of bleeding when both classes of drugs are used.

Alcohol can irritate the stomach lining. Regular or heavy drinking of alcohol while taking NSAIDs may increase the risk of gastrointestinal damage or bleeding.

## **Conclusion**

Patients may experience many different types of pain and there is an increasing demand for access to effective OTC medicines for the relief of pain. A variety of OTC analgesics are available and patients will often seek advice from the pharmacist's assistant to effectively self-manage these painful conditions. It is also important to be able to identify when the patient should be referred to the pharmacist or doctor.

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