

# Aspirin

## Introduction

Evidence of the use of willow bark as a remedy has been found as long ago as the Sumerian civilisation in 3000BC. In its basic form as salicylate (coming from Salix, the Latin name for Willow) it irritates the stomach. This natural medicine became of more practical use to a physician when the compound was modified in the 1890's to form acetyl salicylic acid (ASA) which reduced the stomach irritation. Named as aspirin by the Bayer pharmaceutical company it has been widely used for over 100 years.

## How does it work?

Aspirin works by blocking the action of prostaglandins and thromboxanes (locally active hormones) in the small sticky platelet cells which are initially responsible for binding together to form clots and scabs. Aspirin reduces how effectively these cells bind together and thus reduces clot formation.

Prostaglandins are locally produced hormones that have many functions in the body including the transmission of pain, producing inflammation and also work on the thermostat in the brain stem to affect temperature. It is because of this action on the prostaglandin hormones that aspirin can also be used as an analgesic (painkiller), anti-inflammatory and as an antipyretic (temperature reducing) medication.

## Clinical Use

**Anti-thrombotic:** The most common use of aspirin when taken on medical advice is as a medication to reduce the risks of clot formation. This use in patients who have suffered strokes, heart attacks, circulation problems and atrial fibrillation is to reduce the risk of clots forming in the heart or the

arteries and causing further problems. In this setting it is used at a low dose for the long term.

**Aspirin for AF:** Aspirin will reduce stroke risk by about 20% in AF. It is very convenient to take and has a low risk of complication. Therefore, although Aspirin is not as effective an anticoagulant as warfarin (which reduces stroke risk by at least 40%), in low risk patients the benefits from warfarin are outweighed by the risks, and so aspirin is the preferred stroke prevention. For further information see AFA factsheet "Stroke Prevention In AF".

## Side Effects and Problems

**Bruising:** As we have discussed above, aspirin affects the way that the sticky platelet cells work. It is due to this affect that aspirin has its value to prevent strokes and heart attacks. However it is also due to this action that it causes bruising in some with minimal accidents and also prolonged bleeding if cut or scratched.

**Indigestion:** Aspirin can cause indigestion and in some cases stomach ulcers and bleeding from the stomach lining. If someone using aspirin to reduce the risk of strokes or heart attacks finds that it is causing indigestion they should consult their normal doctor or specialist nurse who may consider further investigation or the additional prescription of stomach protecting medication.

**Tinnitus:** The symptom of ringing in the ears (Tinnitus) is not normally an issue when prescribed in low dose as used to prevent strokes and heart attacks. If this symptom develops while taking aspirin it is advisable to consult your normal doctor.

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