

## DRUGS

## AND TINNITUS

### FACT SHEET

## Can some drugs cause tinnitus? Learn more about medicines and tinnitus.

Many people with tinnitus worry that certain drugs or medicines may have caused their tinnitus. A search on the internet would seem to reinforce that view as there are numerous reports of tinnitus being associated with medication. In fact, when these claims are subjected to proper scientific scrutiny, the number of drugs that genuinely cause tinnitus is extremely small, and these are outlined below. For most drugs, there is no scientific evidence to either support or refute claims that they cause tinnitus.

For the majority of the most commonly prescribed drugs the number of people who report tinnitus while taking the drug is tiny, usually less than one in 1000 people. Tinnitus is a relatively rarely reported adverse reaction in most cases compared to the total number of adverse reactions. This applies to most drugs for high blood pressure, cholesterol-lowering drugs (statins), drugs given for anxiety and most antidepressants. Even those drugs that do cause tinnitus tend to result in temporary tinnitus: once the drug is discontinued the tinnitus usually disappears. Also, where drugs do cause tinnitus, the effect is usually dose dependent. In other words, the normal dose that a doctor would prescribe does not cause tinnitus. It is only unusually large doses that result in tinnitus.

### WHY SO MANY ADVERSE REPORTS, BUT SO FEW CONFIRMED CASES?

The reasons for this apparent contradiction are interesting. Firstly, tinnitus is common and taking medication for one condition or another is also common. It is therefore inevitable that there should be some coincidences and some people will develop their tinnitus while taking certain drugs just by chance. They may then blame the drug even though it is blameless. If the patient reports this to their general practitioner the doctor has a duty to fill in a report for the Therapeutic Goods Administration (TGA). The information is then stored so that other doctors can access it to advise their patients. Thus a small number of reports of tinnitus can label a drug as a "tinnitus causer" even though the tinnitus may have been coincidental to taking the medication. There is another way that drugs may get accused of causing

tinnitus: drugs are administered to treat medical conditions or illnesses. Having the illness that requires treatment is a stressful event. Stress is a well recognised trigger for tinnitus and it may well be that it is the stress of the illness rather than the drug used to treat the illness that triggers the tinnitus.

### SPECIFIC DRUGS & TINNITUS

Nonetheless, there are a small number of drugs that do cause tinnitus. Many of these drugs are only given for serious illnesses where there is no alternative: no one should alter their medication without first discussing it with the prescribing doctor.

**Aspirin** in large doses has long been recognised as being able to cause tinnitus and indeed researchers use this property to deliberately produce tinnitus in animal experiments. In the normal small doses used to treat headaches or flu it is very unlikely that aspirin will cause tinnitus. Similarly the tiny doses of aspirin that many middle aged and elderly people take to prevent heart attacks or strokes are extremely unlikely to result in tinnitus. A very small number of people are unusually sensitive to aspirin and develop reversible tinnitus at very low doses. Clearly, such people should avoid aspirin and contact their doctor for advice regarding alternative drugs.

Aspirin used to be used in much larger doses to treat some rheumatological conditions and when given at these very high doses tinnitus sometimes did occur. However, this effect was generally reversible: once the aspirin was stopped or the dosage reduced, the tinnitus disappeared. Such large doses of aspirin are almost never used nowadays as there are more effective, modern drugs available to treat these conditions.

**Quinine** and some of the other antimalarial drugs can occasionally cause damage to the ear when given in high or prolonged doses, such as in the treatment of malaria. However, taken in low doses this does not usually happen. In the rare cases where people on these low doses of quinine do report tinnitus it is temporary and stops as soon as they discontinue the medication.

There is a small group of very specialised, powerful antibiotics that can be ototoxic – in other words they can damage the inner ear. This damage can cause hearing loss and a small number of the affected people develop tinnitus as a consequence of this hearing loss. This group is known as the **aminoglycoside antibiotics** and includes streptomycin and gentamicin. These drugs are not available as tablets, syrups or other oral preparations and are generally given by injection in hospital for severe, life-threatening infections. Damage to the ear only occurs when the amount of the drug in the blood stream exceeds certain levels. For this reason the level is closely monitored by regular blood tests. However, there are certain conditions such as renal failure when the level of the drug can rise unpredictably and allow dangerous levels to be reached. In these rare circumstances, tinnitus can occur.

Aminoglycosides are also a component of some ear drops. These ear drops are only available on prescription: the ear drops that can be purchased at a pharmacy without a prescription in Australia do not contain aminoglycosides. Although there is a theoretical risk, aminoglycoside ear drops do not generally cause ear damage and ear specialists are happy to prescribe them in reasonably short courses. However, any patient who is worried about taking such drops should discuss the matter with their doctor.

The other main group of drugs that can damage the inner ear are the **cytotoxic drugs** used in treating cancer. Despite the power of such drugs, damage to the ear is surprisingly uncommon. The main group of cytotoxic drugs that can damage the ear is the group containing platinum, including cisplatin and, to a lesser extent, carboplatin and oxaliplatin. The specialist doctors who prescribe such drugs are very well aware of their potential side effects and usually discuss the matter in great detail prior to treatment. Also, where possible, patients receiving such drugs will have their hearing tested on a regular basis to identify any ear damage at an early stage, before any serious deterioration occurs.

Some other drugs that are occasionally ototoxic are a group of drugs called **loop diuretics**, which are used to increase the production of urine in the treatment of high blood pressure, heart failure and some kidney disorders. Ototoxicity only occurs with large doses and the relatively small dose given for mild or moderate hypertension (high blood pressure) does not cause damage to the ear. Even with large doses, such diuretics probably only cause permanent damage when used in combination with other ototoxic drugs.

This factsheet is intended to be a guide of a general nature, having regard to general circumstances. The information presented should not be relied on as a substitute for medical advice, independent judgement or assessment by a healthcare professional, with consideration of the particular needs and individual circumstances. This factsheet reflects information available at the time of its preparation, but its currency should be determined having regard to other available information. Tinnitus Australia disclaims all liability to users of the information provided.

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For hearing, social & emotional support, & general enquiries, Monday to Friday, 9am – 5pm

#### LET'S CONNECT



#MoreThanJustEars  
#MoreThanJustDevices

#### TINNITUS AUSTRALIA IS A SOUNDFAIR INITIATIVE



#### IDIOSYNCRATIC DRUG REACTIONS

Although the vast majority of drugs do not cause tinnitus, there is a small group of patients who will have an unexpected – or idiosyncratic – reaction to their medication. Anyone who suspects this should discuss the matter with their doctor. There may well be a suitable alternative medication or a different dosage regime that may help.

#### RECREATIONAL DRUGS

Although Tinnitus Australia cannot condone the use of such substances, there is no evidence that marijuana, cocaine or heroin usage increases the risk of developing tinnitus. Indeed, there has been discussion among some patient groups as to whether marijuana could help tinnitus. Although there is not much research on this topic, the evidence that is available suggests that it is not helpful. The use of hallucinogenic drugs and inhalants (solvents) does seem to be associated with increased risk of developing tinnitus.

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