

Pulsatile tinnitus

About this factsheet

This factsheet has been produced by the British Tinnitus Association (BTA) and RNID. It is written for people who have tinnitus, their families, friends and the professionals who work with them. Tinnitus is the word for noises that some people hear 'in the ears' or 'in the head' – buzzing, ringing, whistling, hissing and other sounds.

Read this factsheet to find out about the following information:

- What is pulsatile tinnitus?
- What causes pulsatile tinnitus?
- How is pulsatile tinnitus diagnosed?
- How is pulsatile tinnitus treated?

At the end of this factsheet we give you details of organisations you can contact for further information.

If you would like this factsheet on audio tape, in braille or in large print, please contact the RNID Tinnitus Helpline.

What is pulsatile tinnitus?

Pulsatile tinnitus is a type of tinnitus where you hear rhythmical noises that beat at the same rate as your heart. If you check your pulse at the same time as listening to your pulsatile tinnitus, you will notice that both beat at the same rate.

What causes pulsatile tinnitus?

Pulsatile tinnitus is either due to changes in the blood flow in the blood vessels near your ear or it occurs when you become more aware of the blood flow near your ears. It is only dangerous or life threatening in very exceptional cases.

Changes in blood flow

The blood flow in the large arteries and veins in the neck and base of the skull, and smaller ones in the ear itself, can change for a number of reasons:

- You might develop a general increase in the blood flow throughout your body, for example if you exercise strenuously.
- You might develop a localised increase in blood flow, which might happen if a blood vessel is narrower than usual. To compensate for this, other neighbouring blood vessels have to carry extra blood and this extra flow generates noise.
- You might develop a turbulent blood flow. This happens when your arteries harden – atherosclerosis – and this causes the blood vessel to narrow and prevents blood from flowing smoothly. This flow then becomes noisy in the same way that a smoothly-running river becomes noisier at a set of rapids or a waterfall.
- Increased awareness of blood flow.
- If you have a perforated ear drum or glue ear, you may become more aware of sounds inside your body as they are no longer masked by external sounds. Glue ear is a condition where a sticky glue-like fluid builds up in the ear.
- If you have an increased sensitivity in your hearing pathway, your brain can become more aware of normal noises in your blood vessels. This is similar to becoming aware of non-pulsatile tinnitus.

How is pulsatile tinnitus diagnosed?

You will need to see your GP (family doctor) first. They will then refer you to a hospital consultant. They will take a detailed medical history and examine you. In particular, they will look at your eardrums and the blood vessels in your neck and skull. They will use a stethoscope to see if they can hear a pulsatile noise in your neck and skull. If they can, this is known as 'objective tinnitus'.

You will also have a series of hearing tests, which is usual for any type of tinnitus. You may also have tests involving 'imaging techniques'. These help the consultant to get more detailed information about how blood is flowing through your body and these may include one or more of the following:

Ultrasound. This is a similar test to the ultrasound scan for pregnant women and their babies. It uses high frequency sound waves to get an image of the inside of your body and the blood flow within blood vessels.

CT scan. This uses computer controlled X-rays to generate X-ray images of your body, however the images are clearer than X-ray images.

Magnetic resonance imaging (MRI). This uses magnetic fields to produce similar images to a CT scan and can show up irregularities in blood vessels.

Magnetic resonance angiography (MRA) scanning. Some MRA scanners can produce scans of flowing blood. These show a picture of the inside of the artery or vein and can show if there is anything wrong with the blood vessels.

Angiography. This looks at the inside of vessels by injecting a substance directly into the blood vessel being looked at. This helps the blood vessel show up clearly when an X-ray is taken.

How is pulsatile tinnitus treated?

If a specific cause for pulsatile tinnitus can be found – such as high blood pressure, or glue ear – then it may be possible for this to be treated. However, it is rare for a specific cause to be found. If this is the case, you will be shown how to manage your tinnitus. You may be offered counselling, sound therapy, relaxation therapy and tinnitus retraining therapy (TRT). You can find out more about these by contacting the British Tinnitus Association or the RNID Tinnitus Helpline.

Further information

British Tinnitus Association (BTA)

The British Tinnitus Association campaigns for better services for people with tinnitus. It supports a network of local tinnitus groups around the country, has a range of publications and produces a quarterly magazine, *Quiet*.

British Tinnitus Association, Ground Floor, Unit 5, Acorn Business Park, Woodseats Close, Sheffield S8 0TB.

Tel: 0800 018 0527. Fax: 0114 258 7059.

E-mail: info@tinnitus.org.uk Website: www.tinnitus.org.uk

RNID Tinnitus Helpline

If you want to find out more about tinnitus, you may find the other factsheets in our tinnitus range useful. You may also want to look at our leaflet *Questions about tinnitus*.

The RNID Tinnitus Helpline offers information and advice to people with tinnitus, their families and friends and the professionals who work with them. You can contact us for further copies of this factsheet and the full range of our information factsheets and leaflets.

Alternatively, fill in the *Want to know more?* order form at the end of this factsheet and return it to RNID.

Contact a local group

If you feel you need more help with your tinnitus directly from other people, who also have it, you could contact a local tinnitus support group. There are about 100 of these in the UK. They are set up and run by people with tinnitus. The type of support and help they are able to offer varies between groups. Contact the British Tinnitus Association or RNID Tinnitus Helpline for details of your nearest group.

RNID Tinnitus Helpline

RNID Tinnitus Helpline, 19-23 Featherstone Street, London EC1Y 8SL.
Tel: 0808 808 6666. Textphone: 0808 808 0007. Fax: 020 7296 8199.
E-mail: tinnitushelpline@rnid.org.uk Website: www.rnid.org.uk

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Acknowledgement

This factsheet was produced with the help and advice of Don McFerran FRCS, Consultant Otolaryngologist, Essex County Hospital, Colchester.

Want to know more?

This factsheet is available in **audio tape**, **braille** and **large print**. We can also send you more information on many of the subjects covered in this factsheet. Just tick the boxes below, tell us what you particularly need to know about, or see our website at **www.rnid.org.uk**

Please send me:

Pulsatile tinnitus audio tape braille large print

The RNID *Publications Catalogue*.

Information about RNID Typetalk and BT TextDirect.

Details of RNID communication services in my area.

RNID's fundraising leaflet. RNID relies heavily on donations from individuals, companies, trusts and fundraising events. Our leaflet shows how *you* can help.

Details on supporting RNID's future work with a legacy.

Information on how to take part in RNID campaigns.

A copy of the RNID Sound Advantage *Solutions* catalogue, giving details of equipment for deaf and hard of hearing people.

Other information – please tell us what you would like to know.

We are always keen to know what our customers think about our publications. If you have any suggestions for ways we could improve this factsheet you can use the space below. Please send your suggestions to the address overleaf.

Please send this information to: (Please write clearly using block capitals)

Title (Mr/Mrs/Ms/Miss) First Name _____

Surname _____

Address _____

Postcode _____ **E-mail** _____

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Your contact details will be held on our database so that occasionally we can send you information on our work. Please tick this box if you do not wish your details to be kept on the database. We will use any information you give below to monitor requests for this factsheet and help us tailor our services to your needs. You do not have to give this information, but if you do, please tick this box to confirm we may keep it on our database.

Tick all boxes that apply

Is the information:

- For you
- For a friend or family member
- A professional enquiry

How would you describe yourself?

- Profoundly/severely deaf
- Hard of hearing
- Hearing
- Hearing aid user
- I have tinnitus
- I have balance problems

If we could provide it, would you like information in another language?

- Yes. Please tell us which one.

Are you?

- At school or below school age
- A student
- Working age
- Retired

If we could provide it, would you like to receive information in a different format? Please use number 1, 2 or 3 to show your preferred choice.

- Videotape in British Sign Language (BSL) and with subtitles
- E-mail
- Face-to-face

Please return this form to: RNID Tinnitus Helpline, 19-23 Featherstone Street, London EC1Y 8SL or order from our website at www.rnid.org.uk