

# Pulsatile Tinnitus Foundation

## Top 10 PULSATILE TINNITUS (PT) Tips For Doctors

People with pulsatile or pulse-synchronous tinnitus (PT) hear a sound that is in sync with their heartbeat or pulse. Most commonly described as a “whooshing,” the sound can be heard on one or both sides of the head. PT is a symptom of an underlying disorder, rather than a disease unto itself. Unlike the more common form of constant tinnitus, in which a “ringing in the ears” tone is often perceived, PT more commonly has an identifiable and correctable mechanical cause. PT is typically related to some kind of vascular process close to the ear (hence its pulsatile nature), rather than dysfunction of the ear apparatus itself, though there are diseases of the ear that can heighten its ability to hear otherwise normal blood flow.

PT may sound like a whooshing, swooshing, screeching, creaking, clicking, or other rhythmic sound. The key that distinguishes the sound from “regular” tinnitus is that it is in sync with the heart rate. PT, unlike constant tinnitus, is only rarely described as “ringing in the ears.”

The differential diagnosis of PT is very different from its non-pulsatile counterpart, and its workup is different as well. It is often possible to diagnose and remedy the underlying cause of PT. More than half of people with PT have an identifiable cause; it may be the sole symptom of a potentially dangerous vascular condition. PT warrants a thorough medical evaluation to look for known, identifiable, and treatable causes, and to exclude the possibility of a worrisome problem. For these reasons, it is especially important for doctors to know how to recognize a patient who is experiencing PT, and to adequately distinguish and evaluate the patient’s symptoms, while also acknowledging the effects that PT may have on a patient’s quality of life.

This file provides helpful information for doctors to support a patient experiencing PT. We encourage patients who think they may be experiencing PT to review this information sheet with their doctors.

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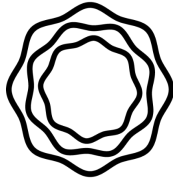
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1. PULSATILE TINNITUS (PT), DEFINED AS SYNCHRONOUS WITH THE HEARTBEAT, IS LESS COMMON THAN TINNITUS, WHICH IS A SOUND NOT SYNCHRONOUS WITH THE HEARTBEAT. PT IS USUALLY A SYMPTOM OF A VASCULAR PROBLEM RATHER THAN A PROBLEM WITH THE EAR APPARATUS ITSELF.
2. PT IS A SYMPTOM THAT AFFECTS MEN AND WOMEN OF ALL AGES AND SIZES.
3. PT MAY MANIFEST AS DIFFERENT SOUNDS FOR DIFFERENT PEOPLE, BUT IT RARELY IS A "RINGING IN THE EARS," AS REGULAR TINNITUS IS OFTEN DESCRIBED.
4. PT MAY BE SUBJECTIVE (HEARD ONLY BY THE PATIENT) OR OBJECTIVE (HEARD BY THE PATIENT & OTHERS).
5. A GENERAL PRACTITIONER OR ENT DOCTOR PROVIDING INITIAL EVALUATION SHOULD TRY TO LISTEN FOR A BRUIT WITH A STETHOSCOPE AT THE ANGLE OF THE JAW, OVER THE MASTOID BONE, AND AROUND THE EAR, PREFERABLY IN A SOUNDPROOF OR VERY QUIET ROOM, TO DETERMINE WHETHER THE PATIENT'S PT IS OBJECTIVE OR SUBJECTIVE. THE USE OF AN ELECTRONIC STETHOSCOPE MAY BE USEFUL.
6. A PATIENT EXPERIENCING PT SHOULD UNDERGO A THOROUGH MEDICAL EVALUATION AND MAY REQUIRE CONSULTATIONS BY A VARIETY OF SPECIALISTS, DEPENDING ON SPECIFIC SYMPTOMS. A SYSTEMATIC DIAGNOSTIC APPROACH INCLUDES CONSIDERATION OF ARTERIAL, VENOUS, ARTERIOVENOUS, AND MISCELLANEOUS CAUSES. POSSIBILITIES INCLUDE:

- CAROTID STENOSIS (DISSECTION/ATHEROSCLEROSIS/OTHER)
- TORTUOSITY, LOOPING OR IRREGULARITY OF THE CAROTID OR VERTEBRAL ARTERY (E.G. FIBROMUSCULAR DYSPLASIA)
- ANEURYSM
- VENOUS SINUS STENOSIS
- DIVERTICULA
- OTHER VENOUS IRREGULARITIES
- INTRACRANIAL HYPERTENSION (WITH OR WITHOUT SINUS STENOSIS)
- DURAL ARTERIOVENOUS FISTULA
- HYPERVASCULAR TUMORS

POSSIBILITIES ALSO INCLUDE HYPERDYNAMIC STATES SUCH AS:

- HYPERTHYROIDISM
- ANEMIA
- SUPERIOR CANAL DEHISCENCE SYNDROME
- VALVULAR DISEASE
- PREGNANCY

7. THERE IS NO SINGLE BEST DIAGNOSTIC MODALITY THAT CAN ESTABLISH A CAUSE OF PT, THEREFORE MANY PATIENTS UNDERGO MULTIPLE TESTS. THESE IMAGING MODALITIES MAY VISUALIZE THE ARTERIES AND VEINS. CATHETER ANGIOGRAPHY IS NOT USUALLY A NECESSARY PART OF THE INITIAL EVALUATION, THOUGH VENOUS PRESSURE MEASUREMENTS AND TEST OCCLUSION MAY BE HELPFUL IN SOME CASES. AN AUDIOGRAM (HEARING TEST) SHOULD BE OBTAINED IN ALL PATIENTS. SOME NON-INVASIVE TESTS TO EVALUATE THE CIRCULATION INCLUDE:
  - CT ANGIOGRAPHY
  - MR ANGIOGRAPHY
  - DUPLEX ULTRASOUND
8. IT IS NOT COMMON FOR PT TO GO AWAY ON ITS OWN.
9. MANY PATIENTS HAVE DIFFICULTY ENDURING PT, WHICH OFTEN LEADS TO INSOMNIA, LOSS OF CONCENTRATION, PROFOUND ANXIETY AND, IN EXTREME CASES, SUICIDAL IDEATION. HEARING AIDS OR MASKING DEVICES, AMONG OTHER METHODS, MAY BE USED AS COPING TOOLS , BUT NOT AS "CURES."
10. PT HAS MANY PSEUDONYMS (E.G. PULSE-SYNCHRONOUS TINNITUS; VASCULAR TINNITUS; BRUIT; MACHINERY MURMUR, ETC.). INCLUDE THESE TERMS IN YOUR SEARCH WHEN REVIEWING MEDICAL LITERATURE AND REPORTS.

#### **PULSATILE TINNITUS ICD-10-CM CODES**

- H93.A1 Pulsatile tinnitus, right ear
- H93.A2 Pulsatile tinnitus, left ear
- H93.A3 Pulsatile tinnitus, bilateral
- H93.A9 Pulsatile tinnitus, unspecified ear

The Pulsatile Tinnitus Foundation, Inc. (PTF) is a public charity devoted to those that experience pulsatile tinnitus and the medical professionals that support them. Whooshers.com, a site maintained by PTF, provides information and support, including links to medical reports, along with personal accounts from real "Whooshers" that describe pulsatile tinnitus experiences, diagnoses, and, in a growing number of cases, treatments. Patients should review the information with their doctors; doctors are encouraged to compare the details in medical reports to the symptoms presented by their patients.