

## 22 - Ears

Thanks so much for listening to our podcast, WHO SMARTED? But here's a silly question... HOW are you able to listen to it? With your EARS of course!

But how do your ears work? How do three tiny bones in your ear help amplify sound and translate sound waves to your brain? And how/why does your hearing affect your balance?

Get ready to hang out with the three smallest bones in the human body - The Ossicles - on today's episode about Ears!

Your kids will discover how 3 tiny ear bones, THE OSSICLES, work together to create sound. When your eardrum vibrates in response to sound, it causes these ear bones to move in response. This amplifies the vibrations in the fluid in your inner ear, which touches thousands of nerve endings, triggering electrical impulses your brain then turns into "hearing".

They will learn that the ear is also responsible for your sense of balance, which relies on there, tiny, liquid filled tubes in your inner ear - the vestibular system.

And they'll discover you are more likely to fall when you have a cold because being sick causes a disruption in the inner ear fluid, which leads to dizziness. So no tightrope walking when you have a cold - just like we tell our friend Terry Tightrope in the episode.

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AND ANOTHER THING....

There are tiny muscles around the Ossicles that can cause them to vibrate more or less. It is believed these exist to restrict the ossicles in the presence of LOUD NOISE, to protect your ears! Bats use a more sophisticated version of this to make sense of the ultra-frequency sounds they make for echolocation.

More fun activities:

In the episode, we meet the tiny ear bones, The Ossicles, who are competing on the show Every Body's Got Talent. Have your kid draw Malleus, Incus, and Stapes (otherwise known as the Hammer, Anvil and Stirrup) performing on stage!

Terry Tightrope can't understand why he falls every time he tries to tightrope walk with a cold. Write or draw a comic strip explaining to Terry what happens in his ears when he has a cold and why tightrope walking is maybe not a good idea!<sup>1</sup>

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<sup>1</sup> This activity guide is for the Who Smarted? podcast [www.WhoSmarted.com](http://www.WhoSmarted.com)