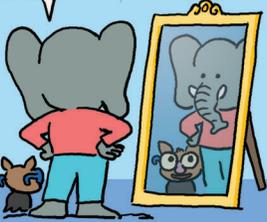


# HEARING



KYLFA, NICE TO MEET YOU!

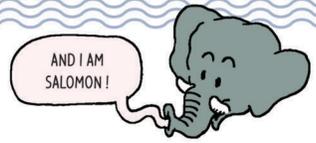
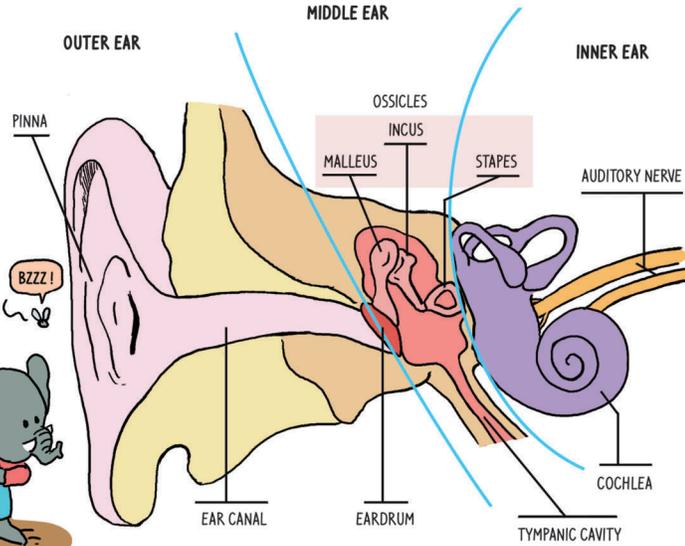
MAGIC MIRROR, TELL ME WHO HAS THE MOST BEAUTIFUL BIG EARS?



AND DID YOU KNOW HOW THESE BIG, BEAUTIFUL EARS WORK?

IN HUMANS, THE EAR HAS THREE PARTS, EACH WITH ITS OWN ROLE.

VERY IMPRESSIVE!



AND I AM SALOMON!



THE OUTER EAR CONSISTS PRIMARILY OF THE PINNA, WHICH CAPTURES SOUND VIBRATIONS. OUR TWO PINNAE ALSO PLAY A MAJOR ROLE IN LOCALIZING SOUNDS IN SPACE.



SOUND VIBRATIONS ARE THEN TRANSMITTED THROUGH THE EXTERNAL AUDITORY CANAL TO THE TYMPANIC MEMBRANE (EARDRUM).

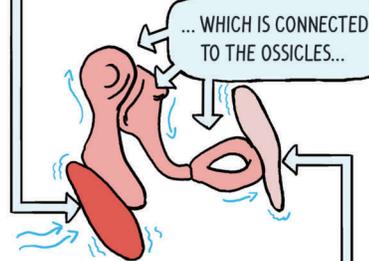
SO, WHEN YOU WEAR EARPLUGS TO PROTECT YOUR HEARING, YOU PREVENT SOUND FROM REACHING THE MIDDLE EAR?

EXACTLY!



WAIT, I CAN'T HEAR ANYTHING, I'M WEARING EARPLUGS.

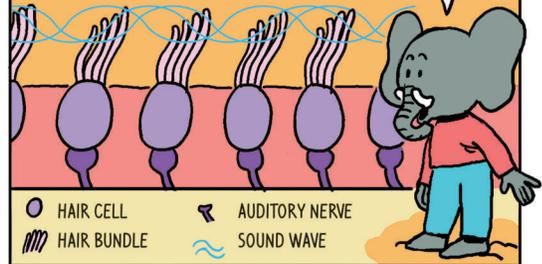
THE EARDRUM IS THE START OF THE MIDDLE EAR. SOUND VIBRATIONS CAUSE VIBRATIONS IN THE EARDRUM...



... AND THE VIBRATIONS EVENTUALLY REACH THE OVAL WINDOW, THE ENTRANCE TO THE INNER EAR. A BIT LIKE DOMINOES...

AND FINALLY, THE INNER EAR. THE VIBRATIONS THEN SPREAD THROUGH THE SNAIL-SHAPED COCHLEA. IT CONTAINS THE HAIR CELLS, WHICH VIBRATE AT DIFFERENT PLACES IN THE COCHLEA, DEPENDING ON THE FREQUENCY.

THE HAIR CELLS ARE LIKE SEAWEED IN THE OCEAN, MOVING TO THE RHYTHM OF THE WAVES



○ HAIR CELL  
 ▬ AUDITORY NERVE  
 ▬ HAIR BUNDLE  
 ~ SOUND WAVE



FINALLY, THE MOVEMENTS OF THE HAIR CELLS ARE TRANSFORMED INTO NERVE SIGNALS, THEN ANALYZED BY THE BRAIN, WHICH PROCESSES ALL THIS SOUND INFORMATION.

DING

AH, A NEW MESSAGE FROM THE EARS...

HMMMM...

THAT SOUNDS LIKE A BUZZING FLY TO ME.



EVERYTHING WE'VE JUST DESCRIBED HAPPENS CONSTANTLY (UNLIKE OUR EYES, OUR EARS STAY OPEN AT NIGHT).

SO, THEY NEVER STOP WORKING?

ALL OF WHICH LETS ME COMMUNICATE, HEAR WARNING SIGNALS, AND KNOW WHERE SOUNDS ARE COMING FROM.

JUST LET ME SLEEEEP...



AMAZINGLY, EVEN SOME OF OUR BONES (SKULL, JAW) ALSO LET US HEAR; THIS IS CALLED BONE CONDUCTION. WE HEAR OUR OWN VOICE THROUGH BONE CONDUCTION AND THE AIR, UNLIKE A VOICE PICKED UP BY A MICROPHONE, WHICH COMES ONLY FROM THE AIR.

YOU'VE REACHED THE VOICE MAIL OF ULTRASALOMON...

YOU'VE REACHED THE VOICE MAIL OF ULTRASALOMON...

IS THAT REALLY HOW I SOUND?

OH, YOU GET USED TO IT...

