Cheatography

Biology 14 Human ears Cheat Sheet

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Structure

3 regions	outer
	middle
	inner

How we hear

Sound waves	collected by pinna are directed to eardrum
	causes eardrum to vibrate
Earbones	amplify and transmit vibration to oval window
Oval window	vibrates
	cause perilymph in cochlea to vibrate
	vibrations in perilymph is transmitted to endolymph of cochlea
Sensory hair cells (central canal)	stimulated
	generate nerve impulses
produce sensation of hearing	nerve impulses travel along auditory nerves to auditory centre in brain
	vibration in perilymph transm-itted to round window
Round window	releases fluid pressure in the cochlea to the air in middle ear

Outer ear

Pinna (ear flap)	flap of cartilage covered by skin
	collects sound waves in surrou-nding
	directs them along auditory canal to eardrum
Auditory canal	produces wax
wax	lubricates canal
	traps dirt and bacteria to prevent them entering the middle ear
Eardrum	thin, elastic membrane at the end of auditory canal
	convert sound waves to vibrations

Middle ear

Ear bones	3 tiny ear bones
	smallest bones in body
	amplify and transmits vibration from eardrum to oval window
Oval window	flexible membrane
	transmits vibration from ear bones to inner ear
Round window	releases fluid pressure in cochlea into the air
Eustachian tube	tube connecting middle ear to pharynx
	normally closed

Middle ear (cont)

	swallowing to open it to allow air to enter or leave middle ear
	equalised the pressure on either side of eardrum
Unequal pressure	eardrum will bulge
	bulging eardrum cannot vibrate freely
	cannot hear clearly

Inner ear

Cochlea	for hearing
	coiled tube with three parallel canals separated by membranes
perilymph	fluid in upper and lower canal
endolymph	fluid in central canal
sensory hair cells	in central canal
	detects vibrations of endolymph
endolymph vibrates	sensory hair cell hairs are bent
	sensory hair cells generate nerve impulses
	nerve impulses travels along auditory nerves to auditory centre in brain
Semici-rcular canals	not involved in hearing

Inner ear (cont)

sensory hair cells	detection of head movements
	stimulated, send nerve impulse to brain
	brain coordinate muscled to maintain body balance