

# Otoacoustic emissions

Transient evoked **otoacoustic emissions** (TEOAE, OAE) belong to objective **hearing tests**. This method is non-invasive, quick and simple, used for **hearing screening in newborns**, usually from the **3rd to 4th day of life**, when the amniotic fluid disappears from the middle ear. If otoacoustic emissions are accessory, then normal hearing can be assumed. In the *absence of otoacoustic emissions*, a hearing disorder or defect of varying degrees can be assumed, and a *subsequent examination* of stem potentials (BERA) or steady-state evoked potentials (SSEP) is necessary.<sup>[1][2]</sup>

## Principle

The examination is based on the knowledge that a *healthy ear*, when irritated by a sound stimulus, *generates sounds (emissions)* through *periodic oscillations of the outer rows of hair cells*, which are, among other things, emitted outside the middle ear and can be *recorded and analyzed*. **Otoacoustic emissions** are produced exclusively preneurally and do not show the ability to transmit sound further. Emissions are formed **spontaneously** or as an echo to a sound stimulus, they can be absorbed by a fault in the transmission system.<sup>[3]</sup>

## Execution

A small probe is inserted into the examinee's **external ear canal**, which *emits sounds* and *records emissions* at the same time. The device displays the *pass* result (OAE optional) or *refer*.

## Links

### Related articles

- Hearing
- Hearing examination
- Audiometry

### References

1. KABELKA, Z. *Screening sluchu* [online]. [cit. 2012-01-30]. <<http://www.fnmotol.cz/screening-sluchu.html/?pracoviste=6>>.
2. MYŠKA, P. Postižení sluchu v dětském věku. *Pediatric pro praxi* [online]. 2007, y. -, vol. 2, p. 92-94, Available from <<http://www.pediatricpropraxi.cz/pdfs/ped/2007/02/06.pdf>>.
3. KLOZAR, Jan, et al. *Speciální otorinolaryngologie*. 1. edition. Galén, 2005. 224 pp. ISBN 80-7262-346-X.