ECHODIA®

shift-OAE

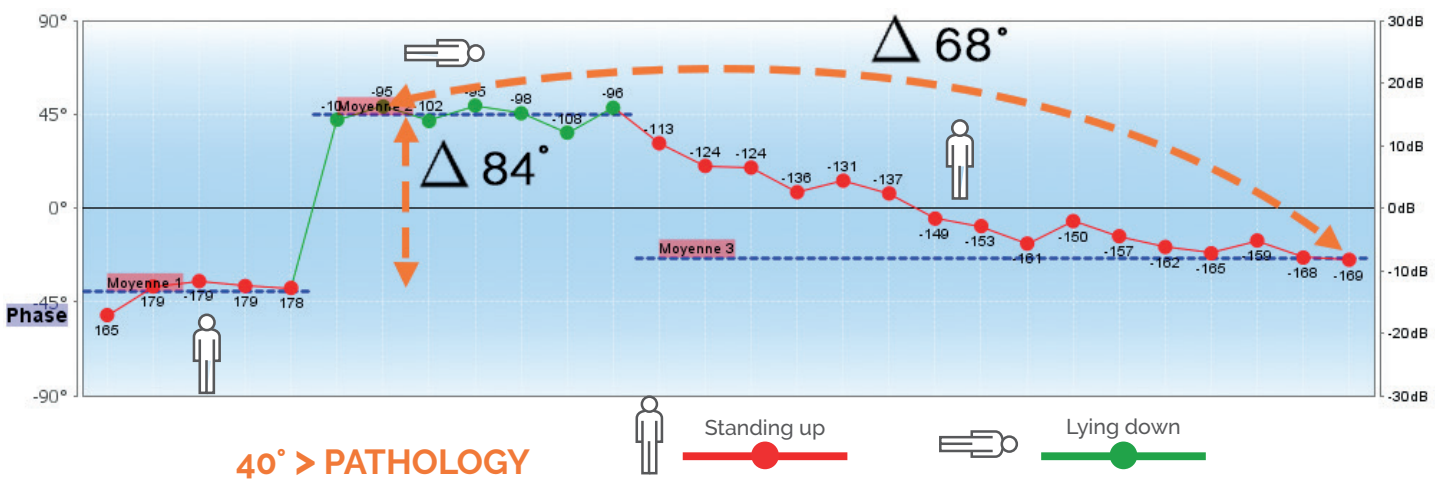
This measure, based on acoustic distortion products, records the response time of outer hair cells of the cochlea. Our exclusive clinical studies have shown that the measured parameters represent the pressure in the perilymph (apex).

Monitoring of Shift-OAE can detect reproductible or isolated presure changes in the cochlea and thus highlight a cochlear hydrops.

DISEASES

Hydrops - Vertigoes - Non-invasive diagnosis of the Menière's disease - Cochlea pressure

TYPICAL CURVE



40° > PATHOLOGY

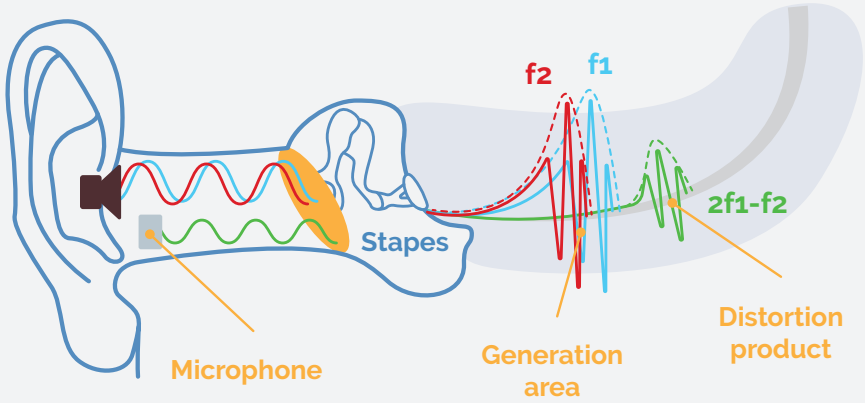
Standing up

Lying down

Developped in collaboration with Pr. AVAN, Patent n° WO/2008/096064

METHOD

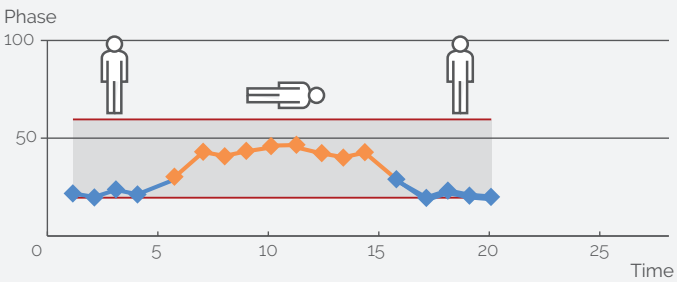
In acoustic distortion products (ADP) recording, bitonal acoustic stimulation is applied (simultaneous sending of two pure tones). These two primary stimuli, with repective f1 and f2 frequencies, will generate a human physiological characteristic distortion product at frequency of 2f1-f2.



On healthy subjects as for subjects with endolymphatic hydrops, a postural test (transition form standing up to lying down) causes an increase of intra-cochlear pressure (exaggerated in the context of Menière's disease).

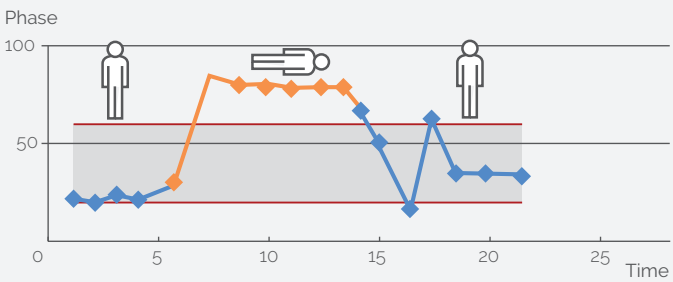
NO HYDROPS

Typical response for a healthy subject.
The signal varies regularly by transient bearing from one position to another and returns to its initial value.



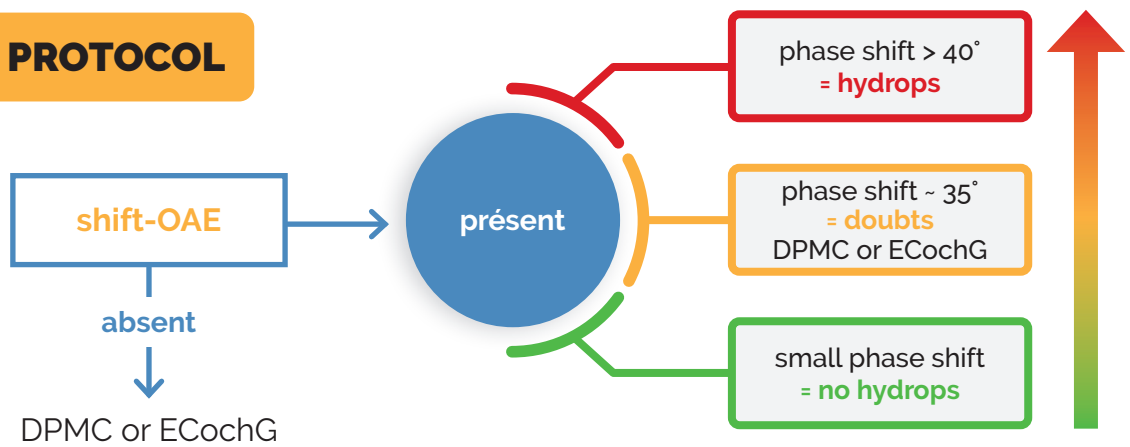
HYDROPS

Typical response for a subject with Menière.
The signal varies unpredictably as soon as there is a change of position.



Indeed, during a postural test, cerebrospinal fluid distribution changes impacting intra-cochlear pressure via the cochlear aqueduct. Monitored over the time, physiological cochlear parameter allows real-time detection of the intra-cochlear pressure change.

PROTOCOL



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