

 

HearAngel®

How can new technology help stop
headphone users suffering from avoidable
hearing loss?

Stephen Wheatley – CEO & Co-Founder

 

Problem

- Not obvious to us when we are harming our ears
- Large sound doses damage our hearing
- Biggest source of sound dose for most is from headphones
- Growth in digital content is driving headphone use, increasing exposure to large sound doses
- 68% of headphone users are aware of dangers but don't have tools to measure and manage their risk

 

Current Regulation - Europe

Smartphones in Europe have warning triggered by the volume setting:

'Listening at high volume for a long time may damage your hearing. Tap OK to allow the volume to be increased above the safe level'

The warning is based only on the predicted volume level of the headphones or earbuds supplied with the handset

It doesn't take any account of how long you listen or what you listen to

If adhered to, content is inaudible in many common listening situations

Warnings are often ignored

Many listen too loud, for too long, risking permanent hearing damage

NHCA
National Hearing Conservation Association



Regulation – From December 2020

International Electrotechnical Commission (IEC)'s new standard IEC 62368-1:2018 replaces early standards on that date

Adopted by Europe (EN) and North America (CSA/UL); others following.

Handset manufacturers have the choice to provide:

Either

Volume-setting-based handset warning (as per current European standard)

Or

Presentation of calculated sound dose from headphones along with warnings and user options such as automatic protection

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IEC* Recommended Option – Calculated Sound Dose

Providing users with relevant, individual information is understood to change their behaviour

This requires monitoring the individual's sound dose from headphones

At defined sound dose thresholds, users are prompted with information so they can make effective decisions.

A "Fitbit for your ears"

The user may also choose dose-based automatic protection which will gradually intervene should they be in danger of exceeding the recommended sound dose

Enhanced protection for children (recommended by International Telecommunications Union ITU-T H870) can be accommodated.

*Matches The World Health Organisation's recommendations

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Making the best of IEC's Recommendation



For individuals:

- Manage their sound dose using easy to understand information
- Automatically protect themselves, if they wish

For parents or carers:

- Manage their children's exposure
- Control child's maximum:
 - Volume level
 - Sound dose
 - Listening period
- Automatically protect them

 

Challenges for Technology

Volume-setting-based option only works for the headphones supplied with the handset – if any

Sound-dose-based option requires knowledge of headphones; changing them can invalidate the calculations

More than 300 Million headsets sold per annum worldwide and growing

How can these be integrated into an effective protection scheme?

 

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