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Questions and answers on the mandate for new safety standards for personal music players

What are personal music players?

For the purposes of this mandate, "personal music players" are defined as battery-powered consumer electronic devices that play music through headphones or earphones and allow the user to walk around while listening. They can reproduce music at high sound levels without distortion and are very widely used, especially by young people. Mobile phones which can play music through headphones or earphones are also considered as personal music players.

What is the issue?

The use of personal music players at high volume settings over a sustained period of time can lead to permanent hearing damage. Consumers, particularly young people, need to be aware of the risks, and products need to be designed so that they are safe.

Are all users at a risk of permanently damaging their hearing?

No, many users of personal music players choose sound volume settings which are unlikely to cause hearing loss. However, some people set the volume control very high and listen to music for several hours per day. It is these people who are at risk of permanently damaging their hearing.

How many people are affected?

The Commission requested the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) to assess whether the health of citizens is appropriately protected by the current requirements of the above-mentioned Community Directives and the relevant European standards. In October 2008, the opinion of SCENIHR concluded that personal music player (PMP) listeners risk both hearing and non-hearing problems. The most worrying is the conclusion that there is a risk of permanent hearing loss, if listening for more than one hour per day each week at high volume (exceeding 89 decibels) for at least 5 years. This approximates to 5-10% of the listeners, which could equate to up to **10 million people in** the EU.

In particular, such usage patterns have become quite common, especially with youngsters.

The European Commission had asked the independent scientific committee to examine this issue, given the widespread use of personal music players and the surge in the number of young people exposed to such noise. Scientists confirm that there is cause for concern

What are the current standards for personal music players?

The regulatory framework governing the safety of this equipment includes: (1) The Radio and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC1 which governs the health and safety aspects of radio equipment, including mobile phones. (2) The Low Voltage Directive (LVD) 2006/95/EC2 governing the health and safety of electrical equipment within certain voltage ranges l(3) The General Product Safety Directive (GPSD) 2001/95/EC3 seeks to ensure that all consumer products are safe.

None of the standards currently prescribe any maximum pressure limit nor require any specific labelling in respect of noise emissions but require that a statement be put in the instruction manual to warn against adverse effects of exposure to excessive sound pressure.

At least one Member State has introduced a maximum limit of 100 dB(A).

Without an EU standard, what kind of sound levels are currently found the market for MP3 players?

The maximum sound levels of personal music players on the market range between 80-115 dB(A) across different devices, and different earphones may increase sound level by up to 7-9 dB(A).

There can be a big difference in sound between 80 and 115 or 120 dB. 80 dB(A) is the equivalent of traffic noise from a nearby road. But the maximum volume setting on some personal music players can in some cases generate up to about 120 dB(A) which is equivalent to an airplane taking off nearby.

What are the current protection standards in the workplace?

In the late 1990s, international standards established limit values for long-term exposure of workers to noise. According to these standards, action should be taken to protect workers who are exposed to an equivalent continuous sound level of 85 dB(A) or more for 8 hours per day, 5 days per week. This limit was set by the International Organization for Standardization (ISO) and the US National Institute for Occupational Safety and Health (NIOSH).

More stringent action levels were introduced in the EU since 2003 with the EU Noise at Work Regulations (Directive 2003/10/EC) which came into force in 2006. It recommends three protection levels at the workplace depending on equivalent noise level for an 8-hour working day.

Action levels:

- At 80 dB(A) employers shall make hearing protectors (e.g ear plugs or muffs) available to workers. Below this limit, the risk to hearing is assumed to be negligible.
- At 85 dB(A) protection of workers is mandatory.
- 87 dB(A) is the maximum exposure limit value.

Because the risk of hearing damage from long-term sound exposure depends both on the level of the sound and on the exposure time, there is a trade-off between the two factors. As a result, listening to loud sounds over many hours per day entails a similar risk as listening to an even louder sound for a shorter period per day. In order not to increase overall exposure, increases in sound levels must thus be compensated by decreases in the listening time.

How is hearing damage diagnosed?

Sound-induced hearing damage is not limited to deafness or an inability to hear certain sounds, but also includes difficulties understanding speech in noisy environments, ringing in the ears (tinnitus) and hypersensitivity to loud sounds.

The initial damage caused by loud sounds is often small and causes slight hearing problems that disappear some time after the sound exposure, so these often go unnoticed.

With repeated exposure to loud sounds, hearing disturbances increase. By the time they are noticed, the damage has become permanent and almost always incurable.

In everyday situations, listeners are exposed to combinations of many different sounds. People with hearing loss at high frequencies have difficulties understanding speech in noisy environments such as a party where there are many different conversations taking place or in large rooms with a lot of echoes such as a church hall. For instance, if a normal-hearing person can communicate at a party at a distance of about one meter, a high-frequency hearing loss of about 40 dB makes it impossible to do so; the listener has to come closer to the speaker and reduce the distance to half a meter.

People with a more significant hearing loss at high frequencies will find it impossible to understand speech in noisy environments unless they get extremely close to the speaker, which may be socially unacceptable. Hearing aids can only partly compensate such loss. Therefore, high-frequency hearing loss, whether aided or not, will cause poorer speech understanding in a noisy environment

Why are young people a particular concern?

Young people are likely to listen to music through personal music players for long periods of time on a regular basis and, if they set the volume control too high, they may be permanently damaging their hearing without even knowing it.

What is a safe sound level for personal music players?

There is no single safe sound level because the risk of hearing damage depends on two factors: (1) the sound level (2) the length of the listening time:

- For example, for sound levels below 80 dB(A) – a level that is roughly equivalent to traffic noise from a nearby road – the probability of acquiring a hearing loss is negligible. Sound levels below 80 dB(A) might therefore be regarded as safe, no matter how long (daily or weekly) a person listens to a personal music player.
- For sound levels above 80 dB(A), the listening time has to be limited in order for them to be safe. As the sound level increases, the safe listening time decreases.

Will there be one maximum cap on sound?

No. Risk of hearing damage depends on 2 factors – the level of noise and the exposure.

Therefore the new standard will have to be able to take account of both factors. On its own, one maximum cap would not necessarily help consumers – as risk depends not just on how high the noise is but how long you listen for.

What is the objective of the mandate to the European standardisation bodies?

The European Commission is asking the European standardisation bodies to develop new safety standards for personal music players that will ensure that, first, exposure to high sound levels from personal music players is limited in order to avoid hearing damage and, second, users are provided with adequate warnings and information on the risks of hearing damage.

The process can take up to 24 months. At this stage the mandate sets the objectives to be achieved – the technical details are worked in the coming months.

In particular, the mandate provides:

- **That, exposure to sound levels is to be limited to avoid hearing damage**: The safe sound level depends on the length of listening time. For example, at 80 dB(A), exposure should not exceed 40 hours/week and at 89 dB(A) exposure should not exceed 5 hours/week.
- **For adequate warnings on the risks involved,** and on ways to avoid them. Information should also be provided covering the situation when the original set of earphones is replaced with another type and this causes higher unsafe sound levels.

How will consumers be given information? On the box, on the product itself.

The mandate from the European Commission sets objectives – the details of how the objectives will be put into place will be worked out with industry in the months to come. But at this stage it would see likely that information will be given to consumers – both in perhaps an instruction manual, where detailed information can be provided. And on the product itself – using the digital screen or other ways to provide consumers with information about usage and exposure levels.

Will users be able to exceed the safe exposure level if they want to?

Yes, the safe exposure level will be the default setting on personal music players but users will be able to override the default setting if they expressly choose to do so. The key is that they make and informed choice, fully aware of any potential health risks.

How will products meet the new safety requirements?

At this stage, the mandate does not prescribe the technical details as to how personal music players should meet the new safety requirements. Industry is a key player in driving the process of developing the standards and it is for industry working with the standard setting bodies and other stakeholders including consumer groups to devise innovative technical solutions to deliver on the requirements set.