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Mobile Telephony and Health

– A common approach for the Nordic competent authorities

Introduction

The development of mobile telephony has been fast in the Nordic countries. Mobile radiotelephony was first demonstrated in the US in 1946, but the first modern mobile telephone net was introduced in the Nordic countries in 1981, the NMT 450 (Nordic Mobile Telephone) system. Other nets in several countries soon followed. In 1986 the NMT 900 system was introduced. These analogue systems are often described as the first generation of mobile telephony. A new digital system, the second generation, called GSM (Global System for Mobile communication) at 900 MHz and later 1800 MHz, was launched in 1992. GSM is used in a large number of countries all over the world. The third generation system UMTS (Universal Mobile Telecommunications System) is being introduced in a number of countries since the year 2000. Today 80-90 per cent of the population in the Nordic countries use mobile phones.

Risk from Electromagnetic Fields

In the last couple of years national or international expert groups have reported extensive risk assessments for electromagnetic fields in the Nordic countries on three occasions. In 2000 the Swedish so called RALF-report *"Elöverkänslighet och hälsorisker av elektriska och magnetiska fält"* (Electrical hypersensitivity and health risks from electric and magnetic fields) was presented. In 2003, a Norwegian expert group reported to the Norwegian Government on *"Mobiltelefoner og helse"* (Mobile telephones and health) and Statens strålskyddsinstituts (SSI's) international Independent Expert Group on Electromagnetic Fields reported on *"Recent Research on Mobile Telephony and Cancer and Other Selected Biological Effects"*. In short these expert groups have reached the same conclusion as phrased by the Stewart Commission in the UK in 2000*: "The balance of evidence to date suggests that exposures to radio-frequency radiation below the ICNIRP guidelines do not cause adverse health effects to the general population"*. A number of national expert groups in other countries have made similar risk assessments, among others in Canada (1999), Germany (2001), the Netherlands (2000-2002), France (2003) and a follow-up report to the Stewart report in the UK (2003). The US Food and Drug Administration writes on its website *"The available scientific evidence does not show that any health problems are associated with using wireless phones"*.

The View of the Nordic Authorities

The Nordic authorities agree that there is no scientific evidence for any adverse health effects from mobile telecommunication systems, neither from the base stations nor from the handsets, below the basic restrictions and reference values recommended by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). However, certain knowledge

gaps exist that justifies more research in this field. There are a number of published reports suggesting that biological effects may occur at exposure levels below the ICNIRP guidelines. These studies need to be reproduced and the scientific progress in these fields of research should be followed carefully. In this context, however, it is important to note that biological effects do not necessarily imply health hazard.

The exposure to the general public from base stations is extremely low, normally 100 to 10 000 times lower than the ICNIRP guidelines and very much lower than the exposure from the handsets.

It is uncertain if children and young people are more sensitive than adults to electromagnetic fields from mobile telephony, very few direct studies of this subject have been performed. A recent compilation by the Health Council of the Netherlands concludes that there is no scientific evidence that children are more sensitive to radio frequency radiation than adults and that no special restrictions for children are needed.

A Precautionary Attitude for the Use of Handsets

For the foreseeable future some scientific uncertainty will prevail with respect to electro-magnetic fields and health. A strategy for dealing with this uncertainty is thus needed. The WHO is currently developing such a strategy, referred to as a precautionary framework. The basic goal of the WHO precautionary framework for public health protection is to respond to health risks before significant harm has occurred.

A well known and well tested principle in risk management practice is, that even if the scientific suspicion of a health risk is weak or uncertain, the exposure from a practice or a substance should be reduced or avoided if this can be achieved in simple ways and at low costs for individuals and society, so called prudent avoidance.

The existing knowledge gaps and the prevailing scientific uncertainty justify a certain precautionary attitude regarding the use of handsets for mobile telephony. Due to the widespread use of mobile phones even a very small risk could have consequences for public health. Because of the lack of knowledge in certain fields of research the Nordic authorities find it is wise to use, for instance, a hands-free kit that reduces the exposure to the head significantly. This information should be addressed both to adults, young people and children. It is important that parents inform young people and children about how to reduce the exposure from mobile phones.

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