**Potential Health Risks and Precautions to Minimize**

**the Potential Dangers Involved in Cell Phone Use**

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With the advance in internet and networking the most remarkable growth has been witnessed by this era in the mobile phone technology. Its usage is ubiquitous and has been estimated by WHO that there are 6.9 subscriptions globally. Some people had a concern that the electromagnetic radiation emitted by the cellphones can be a possible carcinogen. Various scientific communities have conducted research on this topic and found that, “the weight of scientific evidence has not linked exposure to radio frequency energy from cell phone use with any health problems at or below the radio frequency exposure limits set by the FCC” (FDA,2020).

Radio frequency (RF) energy is the type of radiation emitted by the cell phones which are low levels of non-ionizing radiation when in use. As stated by the National Cancer Institute, "there is currently no consistent evidence that non-ionizing radiation increases cancer risk in humans. The only consistently recognized biological effect of radiofrequency radiation in humans is heating."

**Children and Teens and Cell Phones**

A large study on effects of cell phone on the kids aged 10 and 24 was completed across 14 countries in Europe, although the study was completed the results are not yet published. So, FDA now recommends some advice on cell phone usage to avoid long exposure to the radio frequency energy by using the phone lesser, texting instead of talking and using earbuds or speakers to maintain the distance from the phone.

**Hearing Aids and Cell Phones**

Those who are wearing the hearing aids or implanted a hearing device can have difficulty using the cell phones because the radio frequency waves can interfere with the hearing aids. The user can hear some whistle sounds, buzz or some interruptions while using the cell phones. Federal Communication Commission (FCC), now requires the cell phone manufactures to test and rate the wireless compatibility using the American National Standards Institute (ANSI) C63.19 standard. These ratings can help the users to understand which product will be compatible with the hearing aids. Higher rating means less interference and vice-versa, the users are recommended to understand before purchasing any cell phone devices.

**Potential Cell Phone Interference with Pacemakers and Other Medical Devices**

Radio frequency energy (RF) from cell phones can potentially interact with some electronic medical devices. This type of interference is called electromagnetic interference (EMI). Cell phones do not pose a significant health problem for pacemaker wearers and does not cause any interference. (FDA,2020). But certain precautions are advised by FDA like, hold the phone to the ear opposite the side of the body where the pacemaker is implanted to add some extra distance between the pacemaker and the phone. Avoid placing a turned-on phone next to the pacemaker implant. For example, don’t carry the phone in a shirt or jacket pocket directly over the pacemaker.

**Mobile device addiction to depression and anxiety**

A new study from the University of Illinois finds that high engagement with mobile technology is linked to anxiety and depression in college-age students. The study was published in the journal Computers in Human Behavior. Using these technologies for escapism was found to have a relationship with higher depression and anxiety scores.

**Short Term effects**

Based on the studies conducted, the short-term effects of the exposure to the radio frequency energy due to cell phone usage can cause tissue cell and the brain cell heating. Studies to find out the effect of the RF energy and its relation to brain electrical activity, sleep disorder, cognitive function, heart rate and blood pressure have not yielded any consistent results. There is no supporting scientific evidence for the “electromagnetic hypersensitivity” or other self-reported symptoms. (WHO)

**Long Term Effects**

Epidemiological research examining the long-term effect from the Radio Frequency exposure to look for the cancer effects because of cell phone usage has been conducted. Since, the cancer effects need a long period to study and the cell phone have been in usage only from 1990s, there is lack of enough data to conclude on this study. Data collected from 13 countries were pooled together and concluded that there is no risk of glioma or meningioma with mobile phone usage for 10 years. (WHO). There is an increased use of cell phones among the young adults and there is no enough data to conclude the effect of brain tumor with the cell phone usage, so WHO has further initiated the long-term study on this aspect

**Conclusion**

Use of Cell phones have no impact on health for any age group as determined by the scientific studies as of now. But because there is lack of data and the usage of cell phones are in exponential phase, several studies investigating potential health effects in children and adolescents have been initiated by WHO. Cell phones may interfere with medical devices like hearing aids and peace maker. Moreover, Increased cell phone usage has been associated with depression and anxiety.

Anyone can take precautions to reduce the exposure of Radio Frequency energy by using the cell phone for less time and maintaining distance between the device and the body. Non-profit organizations can help increase awareness to the public and it is in the hands of users to use the technology wisely.

**Reference**

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