

# Electromagnetic effect from laptop: The invisible threat to mankind

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## *Abstract*

Laptop has engulfed a bigger part of life for students, professionals, businessman and even kids since last decade. Now a days, its excess use lead to a concern of public about the harmful health effect of electromagnetic (EM) radiation that are discharged by laptops. The exposure of electromagnetic radiation (EMR) can impact on cognitive and non-cognitive behaviours of human beings. Studies have demonstrated that exposure to electromagnetic fields may lead to physical illness like headaches, anxiety, nausea, fatigue, general eye irritation and cataracts etc. Anyway, if we maintain some guidelines while using the laptop, it may reduce the adverse effect on our body.

## **1. Introduction:**

Being portable and lightweight, laptop computers are popular all over the world. The development of memory space and processor speed has increased the use of laptop among every professional. But at the same time this popular electronic gadget is the most significant sources of Electromagnetic Fields (EMF) radiation which World Health Organization has declared as toxic. Many researchers have reported that male infertility may be the reason of exposure to electromagnetic fields [1-5]. Mostly, it has been observed that laptops are being used by keeping it in direct contact with our lap. It undersides emit 40-100 milliGauss EMF which is 40X to 100X higher than the standard limit of EMF exposure. Using a **laptop** on the lap concentrates EMF radiation on the lower abdominal area which is especially harmful to the reproductive organs in both males and females. The growing age of technology can not deny the use of laptops but it is suggested to take acceptable measures that can make the laptop usage safer.

## **2. Well-known occurrences:**

### **2.1. Thermal effect**

Human tissue absorbs RF energy. Since the 1930's, when RF diathermy was tried for the treatment of various diseases, the thermal effects of EMF have been accepted. The temperature rise can impact physiological function of the body, which is sometimes beneficial to health, but can also result in adverse health effects.

## 2.2. Recognition of electromagnetic dosimetry

When the wavelength is comparable with the scale of the object, waves are scattered in a complex manner by an object. It was known that a human body could resonantly absorb EMF energy at frequencies with wavelengths around the height of the body. Recent studies with well-conducted dosimetry provide negative results on the presence of some “non-thermal effect”.

## 2.3. Other phenomena

There is an established effect of EMF due to a non-thermal mechanism. Unexpected absorption of power of EMF causes a small but rapid temperature rise in tissue. This may lead to a permanent skin scar.

## 3. Safety guidelines:

Various organizations in the world have given the safety guidelines with regard to human exposure to EMF that can be helpful in reducing the impact of **laptop radiation on body and mind**. To begin with, the laptop user should always keep the laptop on a desk or a surface away from the lap. This will also help in reducing the overheating of laptop fan. Therefore, always create a space between the laptop and the lap, so that EMF may disperse. This reduces the impact of EMF drastically.

## 4. Conclusion:

Many people work for long time in front laptop which emits radiations. These radiations are incident on the face of users. It affect to the eye and other organs of the body. The radiations enter inside the body and EMF is absorbed by the cells and tissues. If proper guideline is maintained, the harmful effect can be minimized.

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