

Низкий уровень медицины в африканском регионе выражается отсутствием системы в профилактике, выявлении, лечении и контроля за ГБ. Это происходит из-за сочетания нехватки ресурсов и несостоятельности системы здравоохранения, отсутствия устойчивой лекарственной терапии и наличия препятствий на пути к полному соблюдению назначенных лекарств [6].

Страны с высоким уровнем доходов начали снижать уровень распространенности гипертонии у населения посредством принятия активных мер в области общественного здравоохранения и других областях, таких, например, как сокращение содержания соли в подвергнутых обработке пищевых продуктах и обеспечение доступа к диагностике и лечению, что позволяет решить проблему гипертонии и других факторов риска в совокупности [1].

С 2013 по 2018 гг. в США было проведено исследование различий в распространенности гипертонии среди взрослого населения и контроле над артериальной гипертензией в столичных статистических регионах – ССР (численность населения более 50 тыс. чел.) и не столичных статистических регионах – НССР (численность населения менее 50 тыс. чел.) [7]. Результаты показали, что распространенность ГБ в ССР выше, чем в НССР. В ССР на фоне урбанизации у людей снижается физическая активность, что приводит к появлению лишнего веса. Здесь общество больше подвержено стрессу на работе ввиду высокой конкуренции за рабочие места и поощрения переработок. Это приводит к появлению вредных привычек: употребление алкоголя, курение. Возникает тенденция к «заеданию» стресса – чрезмерное потребление пищи, богатой сахарами и жирами. Последнее приводит к развитию сахарного диабета 2 типа, что потенцирует развитие ГБ.

Результаты исследований зависимости распространенности гипертонической болезни от уровня благосостояния населения говорят об урбанизации как о негативном факторе, который запускает порочный круг развития ГБ. Высокий уровень жизни не гарантирует защищенность от заболеваний сердечно-сосудистой системы. Бедность в странах третьего мира стоит наравне с процессом урбанизации в развитых странах, как фактор, способствующий развитию ГБ. Отсутствие современных технологий, низкий уровень финансирования медицины и экономия на рабочей силе приводит к невозможности обеспечить оптимальный контроль за здоровьем населения в этих странах.

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ELECTROMAGNETIC RADIATION AND HUMAN HEALTH

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Электромагнитная волна (ЭМВ) является важнейшим двигателем современного технологического и экономического роста. Чрезмерное использование электрических устройств на основе электромагнитных волн оказывает некоторое неблагоприятное воздействие на здоровье человека. В данной статье представлен результат исследования влияния неионизирующего электромагнитного излучения от Wi-Fi роутера, электронных гаджетов и бытовой техники на организм человека. Был проведен опрос среди студентов МВШМ с целью выявления и влияния на вредность ЭМВ, излучаемых бытовыми приборами. Окончательный вывод заключается в том, является ли ЭМВ опасной или нет.

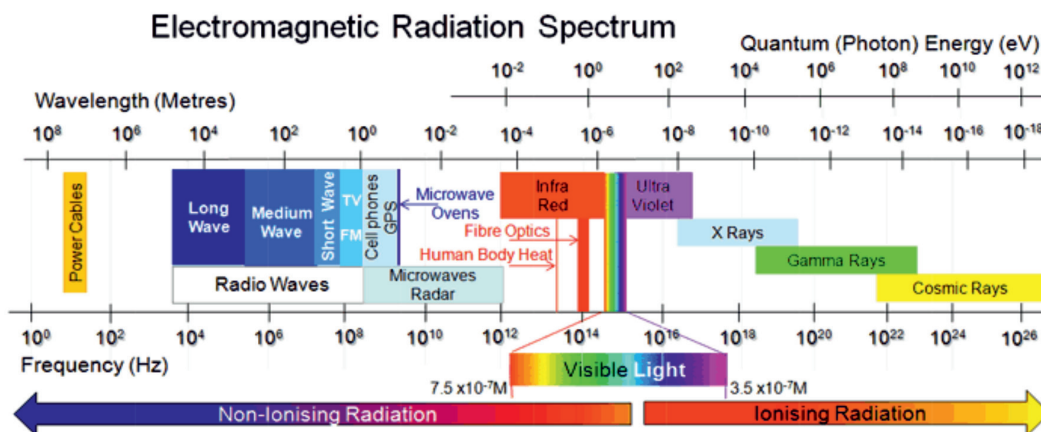
Electromagnetic wave (EMW) is the essential driver of modern technological and economical growth. The excessive use of EM wave based electrical device has some adverse impacts on human health. This article presents the result of a study of the effect of non-ionizing electromagnetic radiation from a Wi-Fi router, electronic gadgets, and home appliances on the human body. A survey was conducted among ISM students to identify and influence the harmfulness of EMW emitted by household appliances. The ultimate finding is whether EMW is dangerous or not.

There are two types of Electromagnetic radiation; ionizing radiation and non-ionizing radiation. These two types depend on whether they are capable of ionizing atoms and breaking covalent bonds or not. Ionizing radiations are ultra violet and higher frequency radiations, such as X-rays or gamma rays.

Non-ionizing radiation creates two major problems that are electrical and biological. Furthermore, this electric current caused by radiation

can ignite fire and produce explosive hazard. The electromagnetic spectrum is divided into several different classes of radiation such as low frequency (LF), radio waves (RW), microwaves (MW), infrared waves (IW), visible light, ultraviolet light, x-rays and gamma rays. This different wave frequency converts from one type to another [1]. Figure shows the spectrum of electromagnetic energy or radiation. EM pollution is significant because of

frequencies which are oscillating more slowly than light waves we are sensing. But in case of x-rays and gamma rays (which oscillate more quickly than visible light) are quite dangerous. But bright side is that these rays are not present at our living and work places. Electromagnetic pollution has been captured everywhere. This short review paper will discuss various health conditions caused by the electromagnetic fields.



The spectrum of electromagnetic energy or radiation at different level indicating human health problems

Non-ionizing radiation (NIR) refers to the formation of energy with lower frequencies, and it has been found non risky for human health by researchers and scientists. But recently, evidence shows that some NIR frequencies may have potential to accelerate biological injury. The research concerning Non-ionizing radiation (NIR) human health hazard is focused on the following two cases: (1) extremely low-frequency (ELF) energy waves produced and emitted by power stations, power lines and some electrical equipment; and (2) radio and microwave frequencies produced from wireless communication technologies, cordless and cellular phones, and some electrical materials. Like fresh water can become contaminated when it passes through a contaminated surroundings, electricity becomes fouled when it comes into contact with electronic equipment. Nominal electricity coming from electrical power line to buildings at a frequency of 50-60 Hz and power becomes 'lousy' or polluted when it develops lots of distorted higher-frequency signals by contacting with equipments such as computers, televisions and some appliances [2].

In current world most new electrical appliances create electromagnetic pollutions. Hence pollution increases exponentially [3].

We live in a generation that relies heavily on technology. Whether for personal use or work, wireless devices, such as cell phones, are commonly used around the world, and exposure to radio-

frequency radiation (RFR) is widespread, including in public spaces [4, 5].

In this review, we address the current scientific evidence on health risks from exposure to RFR, which is in the non-ionizing frequency range. We focus here on human health effects, but also note evidence that RFR can cause physiological and/or morphological effects on bees, plants and trees [6–8].

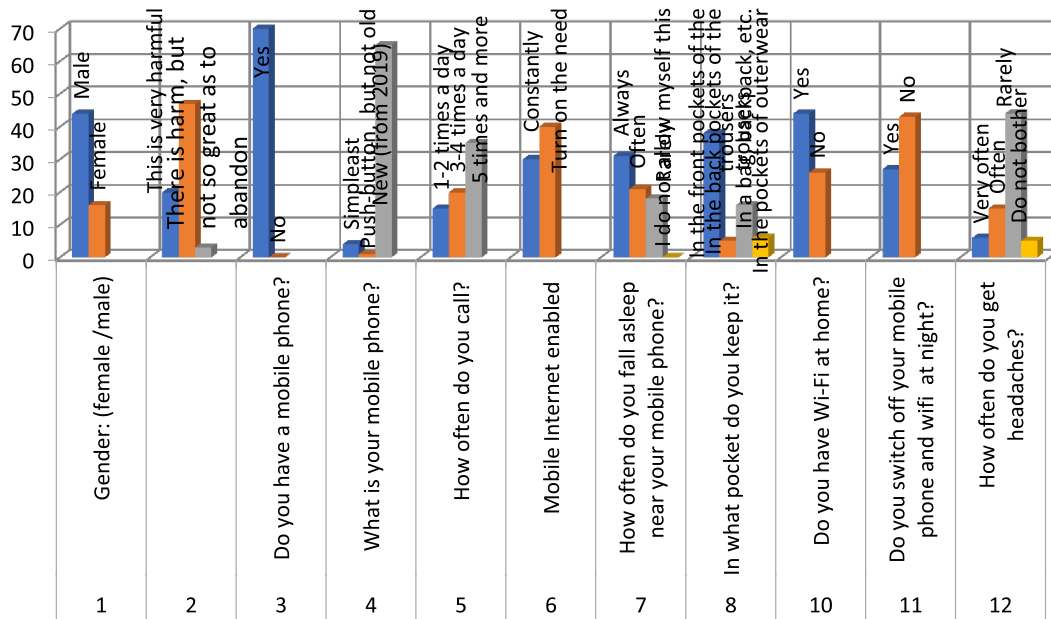
Although electronic devices and the development in communications makes the life easier, it may also involve negative effects. These negative effects are particularly important in the electromagnetic fields in the Radiofrequency (RF) zone which are used in communications, radio and television broadcasting, cellular networks and indoor wireless systems. Along with the widespread use of technological products in daily life, the biological effects of electromagnetic waves has began to be more widely discussed.

Objective: to identify the effect of non – ionizing electromagnetic wave on living organisms

Materials and research methods

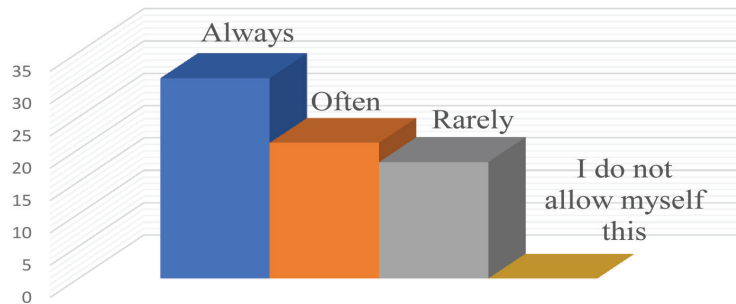
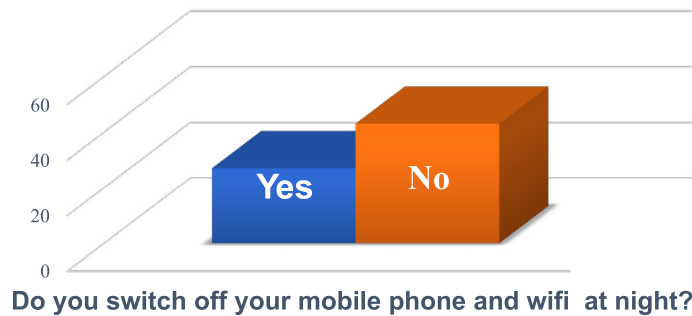
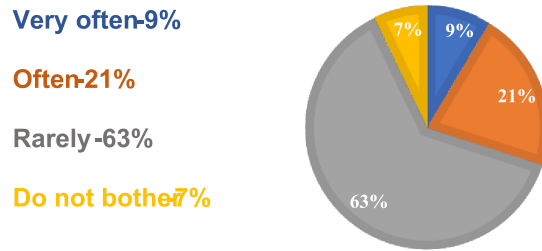
To study the effect of electromagnetic radiation on the human body, a sociological survey was conducted among first-year students of ISM. In the course of the survey, 70 respondents were interviewed. Of these, 54 (77%) are male students, and 16 (23%) are female students. Age structure: 17-26 years.

Social survey



The research results showed:

%AGE OF STUDENTS WITH HEADACHE



Mortazavi and his researchers group [9], has found Electro-hypersensitivity (EHS) from electromagnetic radiation. Electro-hypersensitivity (EHS) is the disordered physiological processes associated with disease or injury of EHS and it is less significant. Also researchers proved that it is related with significant metallic element. Solid metallic element attached with the proteins within tissues and organs are believed to have fewer danger.

In addition, Mortazavi and associates have observed that steady magnetic field usually generated from mobile phones and other wireless devices may affect mercury vapor release from dental amalgam. The diluted mercury gradient is increasing in saliva within amalgam carriers [9, 10].

Cellular phones are being used close to brain tissue. Hence brain tissue is influenced by electromagnetic wave mostly. Many studies show that human sensory system and behavior are affected closely by the radio frequency electromagnetic waves coming from the base stations (BTS) [10]. A study of Heinrich S [10] shows that increasing use of wireless devices forces mass people to live under RF electromagnetic waves and affecting their health particularly in children.

Conclusion

RF – the most obvious biological effects of RF energy on living cells are due to heating. While it is not certain that radiofrequency radiation poses any risk to human health at all, there are some reasons for concern about the health effects of cell phones themselves. These problems exist because the antennas of these phones deliver most of their radio frequency energy to small parts of the user's head, resulting in headaches that were found to be very common among high-end users of such radio-emitting phones, as our study proved beyond doubt. The exponential growth in mobile phone use increases huge concerns about radio frequency and its harmful nature to human health. In vivo and in vitro studies are continuing to find out what exactly is happening at the cellular level. Researchers have confirmed that electromagnetic waves affect brain tumors because billions of people use cell phones near brain tissue.

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EFFECTS ON SYSTEMIC BLOOD PRESSURE DUE TO EXAMINATION STRESS

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Стресс – это часть жизни человека. Стресс – неотъемлемая часть студенческой жизни, особенно в дни экзаменов. Мы провели исследование с участием 86 студентов из нашей группы 5-го курса Кыргызской государственной медицинской академии со средним возрастом 21,53 года, которые участвовали в этом исследовании, 52 (60,04%) были мужчинами и 34 (39,53%) женщинами. Метод, использованный для измерения АД осциллометрическим методом с использованием прибора OMRON 907, показал, что значения систолического артериального давления и частоты сердечных сокращений, проверенные в дни экзаменов, были статистически выше (в среднем 140,60 мм рт.ст. и 90 ударов в минуту соответственно), чем при измерении в обычные учебные дни и во время каникул.

Stress is a part of human life. Stress is inseparable characteristics of student life, especially during exam days. We conducted research on 86 students from our batch of the 5th year Kyrgyz State Medical Academy, with a mean age of 21.53 years, who participated in this study 52 (60.04%) were of the male, and 34(39.53%) of the female gender.

The method used for measurement oscillometric method using OMRON 907 oscillometer BP apparatus, their has been found that the systolic arterial pressure and cardiac frequency values checked on exam days were statistically higher (mean of 140.60 mmHg and 90 bpm, respectively) than when measured on class days or during vacations.