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The effect of use of mobile communications to the human body

This article contains information about the impact of mobile communication on the human body. And also it considers the harmful of mobile phones to the human health. It is clear that electromagnetic radiation from mobile phones has a negative impact on the physiological state and psyche of the person. Not following the rules of using of mobile phones are doing a lot of damage to the health of people.

Key words: mobile phone, pupils, burden and hazards, eye disease, respiratory disease, musculoskeletal disease, nerve disease.

The development of science and technology of the 21st century, information breakthrough is certainly a result of the prosperity of particular human thinking.

On the one hand this saves golden time of people reducing their work, but on the other hand it has a negative impact on their health [1].

We know that today all the modern people have mobile phones in their pockets. The mobile phone has now become a familiar household of each person which is used in everyday life. Mobile phone is so developed that we can say that no one can go without it. It is true that it has everything that we need [2]. For example: a clock, calendar, calculator, take a picture or record a video, record a song that you want, remember, listen and others. You cannot really solve anything without the help of this little substance. With the help of it, you can find the person you need without searching through the city. It has become necessary object for people when they are at work, at school or wherever they are, but the mobile phone is not only useful for human but we should not forget that there is a danger [3]. That's why I chose this topic for the analysis of very interesting question but the mobile phone is not only in favor of the health of the people, must not forget that there are dangers. That's why I chose this topic for analyzing; it is a very interesting problem.

Mobile phone is the most advanced and available form of wireless communication. 5–6 years ago, the mobile phones were in people who have important jobs, but now almost every person has it [4]. Even now, just crossed the thresholds of the school pupils have the phones of latest and valuable brand. Parents buy mobile phones for their children to know where their children are. People not only talk by the phone and they also use calendar, alarm clock, reminder, clock, and so on in it [5]. Experts are alarmed that in the next 10–15 years because of the harm wireless phone number of people with cancer will increase. This year, the World Health Organization has announced that mobile phones are harmful to the health of the young generation. Scientists believe that talking on a cell phone for half an hour a day for 10 years will increase the risk of contracting the disease of glioma up to 40 percent. So it is clear that mobile phone is main mechanism of electromagnetic radiation [6].

They are the radiation affecting on the complication of diseases such as nervous, endocrine and venereal diseases. Even in some countries, children of school age are forbidden to carry mobile phones [7–10].

Because children who regularly use mobile phones from the age 10–11 years there is a probability of occurrence of brain tumors. Because electromagnetic radiation penetrates into the central nervous system of the brain that controls thinking. Experts do not conceal that the main cause of complications of epilepsy, psychiatric disease, blood disease is a wireless phone. Worldwide comprehensively studied the danger of mobile phones on human life [8–10]. Spanish researchers have proved that children aged 11–13 years, after two minutes of talking on the phone, the bioelectric activity of the brain comes to its former condition for 2 hours. Conducting research scientists in several cities of the UK is also not excluded it. Research conducted by the Institute for Hygiene Russia showed that people aged 20–29 years who used a mobile phone for 5–10 years, have risk of brain tumors. These studies show that how early the younger generation begins to use mobile phones, so increases the risk of disease. However, there are scientists who do not agree with this opinion. Still not fully proved that mobile phones are so affect on the human body. Although various studies carried out in different parts of the world, there are enough people who think that this is an indirect view. According to the words Professor and Dr. Asker Esenkulov, such studies have not proved yet. «Therefore, it

is not necessary to alarm and talk about danger of the mobile phone. It is only a small study.» — he says [11].

Basically, the group which is interested in mobile phones are children and young people. To attract the attention of children, mobile operators offer a variety of games and new services. In 2001 Research Department of the European Parliament forbade the children who are under age, to use of mobile phones. Since then, European countries forbade the students to use of mobile phones. For example, if in the UK on the sale of mobile phones should be brought leaflets informing about their danger, then in France, parents have to monitor how much time their children are talking on the phone [12]. A team of scientists studying the effects of radiation on the human body, supposed to write on the boxes of mobile phones such warnings as «Health Organization warns».

Taking a cue from European countries, in Tajikistan it is forbidden to use of mobile phones for the students of higher and secondary education. However, despite the ban, the main users of mobile phones are children and youth. It's no secret that mobile phones weaken the interests of the school children to the lessons.

In the UK about 20,000 antennas are established only of cellular communication.

However, there is evidence of indirect harm of cellular antennas which are installed in the settlements. According to German scientists protesting the three cellular standards NMT-450, GSM 900 and GSM 1800 (tested directly phones) and 231 pacemakers from different manufacturers, more than 30 % from the pacemaker interfered phones working in the NMT-450 standard and GSM 900. The influence of standard phones GSM 1800 on the work of pacemaker was not detected [13]. In the study was not carried out the measurement of the radiation near the cellular antennas, but it is safe to say that the radiation power of the base station is between 6 and 10 W, in contrast to the tubes, radiating from 0.05 W to 0.6 W. Despite such large tolerances of issues in the security of mobile communication devices the United Kingdom first began to consider the impact of mobile phones on children's health. On the 11.05.2000 it was published the report of group of leading British scientists to study the effects of mobile phones on children's health [14–16]. The report says that children should not use mobile phones because of the greater susceptibility of children's body to the action of electromagnetic radiation. The study was commissioned by the British government, which immediately reacted to the received report. Ministers got instruction to work out new rules for the use of mobile phones by children, in which it will be pointed the minimum age of users, the maximum duration of talking and the number of possible daily calls. The notice about of possible risk for the child-users of mobile phones has brought in confusion of many mobile phone companies, because they reckoned on the contingent in their business plans. About the most exposure to the radiation of young people says and research, which was held among 11,000 cellular users on request by Norwegian Radiation Protection Board, National Institute of «Working life» (Sweden), as well as SINTEF Unimed (Norway). The study showed that even people who use the phone less than 2 minutes a day, complained of discomfort and side-effects [17]. The problem of health grows, if the phones are used longer. Those who use the phone for about 30 minutes each day, increases the probability of losing of memory nearly 2 times, compared with those who confined to two minutes per day. Half of the surveyed users reported that when they use cell phones they experience the unpleasant heating of the head around the ear. Young people are subjected to the greatest risk. Those who are not yet 30, they are 3–4 times more often subjected to the side-effects. And in Japan, unlike to the UK in which a total of 30 million cellular users, the percentage of cellular phones in terms of population of the country is much higher. Perhaps it is this fact forced the Japanese government to revise the standards for levels of mobile phone radiation to the direction of tightening the requirements. Mobile phone manufacturers will be required to maintain the level of radiation does not exceed 2 watts per kilogram of brain client. The adoption of this decision reflects the concern of the possible impact of electromagnetic radiation on health, which is particularly increased after the publication of the report about the study of English scientists. However, the manufacturers do not consider that the government's new requirements greatly will affect on the development of mobile communications, as currently manufactured phones give radiation at levels from 0.13 to 0.6 watts [18, 19]. As we can see, the Japanese government does not want to harm with their actions to the most high-tech and the main profitable field of manufacture. Therefore, some legislators boggled taking restriction on deliberately inflated levels compared to the manufactured phone models. Since the phone is distributed electromagnetic radiation, and it is close to the human body, there is concern about the danger of radiation on health. This radiation is not ionizing, but it can cause a local increase of the temperature of living tissues and according to some scientists, lead to the appearance of chromosomal aberrations in cells (the presence of the effect is debatable) [20]. As the main possible effect of long-term exposure to RF fields is

considered cancer (brain tumor). It was investigated the effect on the activity and cognitive function of the brain, sleep, work of the heart and blood pressure; exposure in this area are small and have no obvious health values. Also, as the impact of mobile phone on health are considered risks of road accidents. While driving the use of mobile phones (including the speakerphone, in which the hands are free) increases the risk of traffic accidents 3–4 times. A dispute about the dangers or safety of mobile phones is constantly underway. Supporters of harm often express version of that financial interest of phone manufacturers is the reason of hide or «embellishing» the results of research on this topic. Under the principle of prevention, health organization recommends to minimize the time of using of mobile phone and its location close to the head, especially for children. Therefore, we consider that students must not use the mobile phones at school or they must abide by the following rules. When talking on the phone it is better to use headphones and loudspeaker, to keep away from the ear, it is not harmful. In order to mobile phone does not hurt your health, try not to talk a lot. The phone does not have to be in bed, in the workplace, it affects the nervous system and spoil the sleepy phase. Do not wear your phone on your belt, on the chest, in the pockets of your trousers and jackets. Electromagnetic waves are bad for the internal organs. If you talk on the phone for longer than 15 minutes, as stated in the second paragraph, it is very harmful to the ear [21].

Conclusions. Summarizing all the above, it should be noted that today we cannot be accurate to say that the use of cell phone is safe or harmful. Research in this area has been conducted, but the results are mixed.

We can draw general conclusions only comparing standards and phone each other:

The more wasting time talking on the phone, the more impact it has on people.

The greatest impact on the human body have an analog cellular standards such as NMT450i and AMPS [22].

This is due to high power as base stations and telephone transmitters themselves. Modern digital standards such as GSM 1800 and CDMA 800 has the least impact on the human body.

The more expensive the phone, the more likely that it has less impact on the human body. The high sensitivity of the receiver in the phone not only increases the transfer distance communication, but also allows you to use lower power transmitter at the base station.

It may be that to the health affects not only the emission of cellular phones, but the set of factors. For example, radiation and unhealthy lifestyle. I would like to add that the most secure today is the standard CDMA 800 MHz IS-95 [23].

This is mainly due to the fact that due to the peculiarities of the organization of the network, mobile terminals CDMA can maintain a quality connection to the database at minimum power — because power of all mobile terminals CDMA does not exceed 0.2 watts (compared to GSM & nbs; 900 where the tube emit «no more than» 2 W — the truth is it is the peak value of some older models of phones in unstapled connection). But the most «dangerous» from the point of view of the possible consequences of the impact of operation of the cellular terminal is a standard AMPS (which is almost not used in its pure form, although all the standard equipment DAMPS supports transition at poor communication with base to analog mode — in this case improves the range of the terminal in connection with the best path delay, but also increases the radiation power) [24].

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Ұялы байланыс құралдарды қолданудың адам ағзасына әсері

Мақалада адамдардың ұялы байланыс құралдарын қолдану барысында денсаулығына тигізетін әсері туралы мәліметтер берілген. Ұялы телефонның пайдасымен қоса адам денсаулығына зияны көрсетілген. Ұялы телефоннан шығатын электромагниттік сәулелердің адамның психикасына және физиологиялық жағдайына кері әсерін тигізіп жатқандығы белгілі. Адамдардың ұялы телефонды қолдану ережелерінің сақталуы туралы мәліметтер жан-жақты қарастырылған.

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Влияние использования сотовой связи на организм человека

В статье представлены сведения о влиянии сотовой связи на здоровье человека. Показаны положительные и отрицательные стороны использования сотовой связи. Рассмотрены вопросы отрицательного влияния электромагнитных излучений, выделяемых сотовыми телефонами на психику и физиологическое состояние организма человека. В статье даны основные правила использования сотовых телефонов.

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