



# Death of the Human Embryo Caused by Electromagnetic Radiation – Short Report<sup>1</sup>

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**Abstract.** This article considers the consequences of environmental pollution by high frequency electromagnetic radiation (EMR). It was shown that it may lead to the death of human embryos (miscarriage) in the womb. This is happening in some countries, and in Russia it has had a catastrophic effect on the demographics of the nation. For example, in St. Petersburg, it was shown that high frequency EMR from cellular and other mobile devices is one of the main causes of decreasing birth rates and their consequent impact on the number of children in the city. Due to the destruction of embryos in the womb, the number of children in the city from 1990 to 2007 has decreased by 400 thousand people. This is more than all the population losses of Japan from the atomic bombings of Hiroshima and Nagasaki. Another consequence of the influence of EMR on women in the perinatal period is the development of a number of diseases in an embryo and the birth of children with these diseases. In St. Petersburg, 30% of children are born with serious diseases.

**Keywords.** *human embryo, death, diseases, environs, electromagnetic radiation*

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## Introduction

A continuous decrease in the population of children in Russia began to take place in the 90s and continued up to 2007 (Mirabishvili V.M., Dychenko O.L., 2008). It was so significant that the government urgently introduced a program providing financial assistance to families with two or more children. The depopulation stopped and an increase in the number of children was observed. However, this increase turned out to be “imported” due to immigration. A birth rate increase in the native population was not achieved.

The paper (Soboleva S.V., 2011) was even subtitled “We Are Dying Out”.

The ordinate axis indicates the dynamics of total birth rate shown, i.e. number of children born to one mother in the Russian Federation and in the Siberia Regions. The abscissa axis indicates years.

Birth rates are a multifactorial figure, and the population of children is an even more complex

figure. Not only are birth rates a factor, but child deaths due to diseases, accidents, and even intra-uterine deaths should be taken into account.

Studies dedicated to the dangers of electromagnetic radiation (EMR) from a cellular telephone on the development of chicks were conducted at the Biophysics Institute of the Russian Academy of Sciences in Pushchino Town, Moscow Region. (Grigoriev Yu.G., Grigoriev O.A., 2013). Two hatchers each with a 63 egg capacity were employed. The eggs were placed on a special stand, and cellular phones were placed 10 cm above them. One device operated on a GSM 900/1890 system and was remotely switched on for one and a half minutes, then switched off for a half a minute. The phone operated in this mode for 21 days until all the eggs were hatched. The second hatcher was used for the purposes of a control and contained no operated phone. In the experimental hatcher, embryonic development disorders began as early as the third day, and the chicks died one by one. In total, 16 eggs (25%)

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were hatched, but the chicks were unviable and soon died. In the control hatcher, 51 normal eggs were hatched. Therefore, even very low intensity EMR was proven to drastically impact developing animal embryos.

Professor B.I. Glukhovets of the Pediatric Center in Saint Petersburg has drawn our attention to the miscarriage pregnancy phenomena. This occurs when women lose their baby during the first trimester of pregnancy. An embryo is not considered a human being before the delivery, so such

cases are not accounted for in our city. These data are stored in the archives of local clinics for a certain period of time. How many children have been lost in our city due to miscarriage pregnancy? We were able to find this number in 2011. Some doctors stated that they had encountered only one or two miscarriage pregnancy cases per department every year since the 60s. Recently, such cases were registered almost every day.

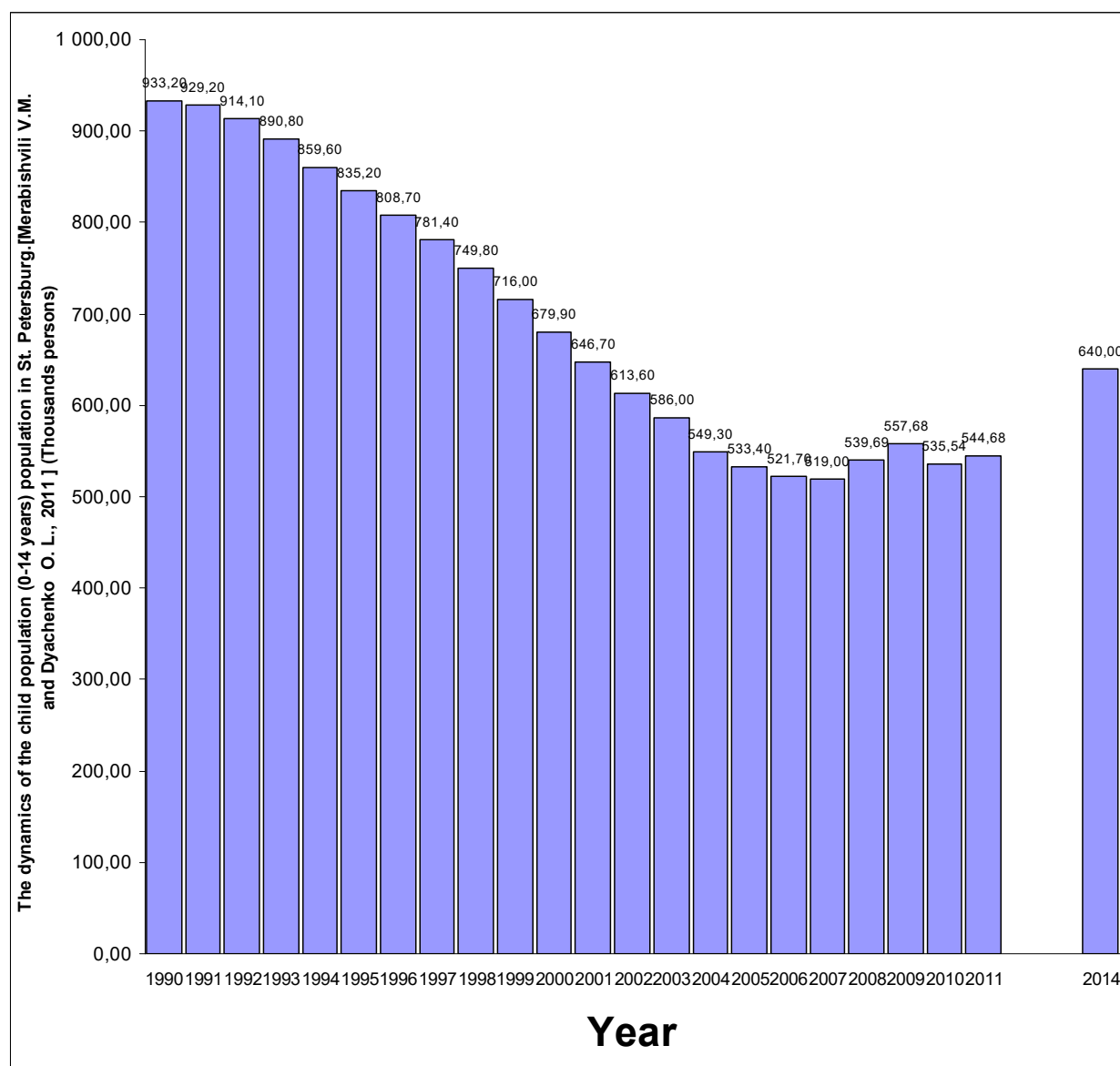


**Figure 1:** Quantitative Dynamics of Children Population (0 – 14 years old) in Saint Petersburg (Merabishvili V.M., Dyachenko O.L., 2008)

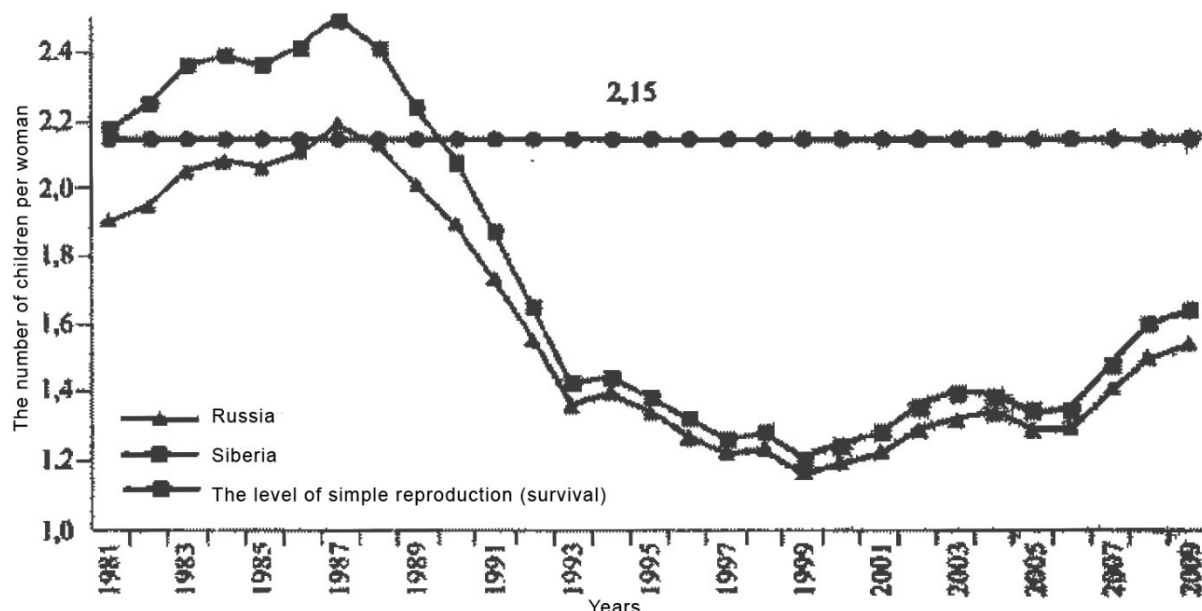


**Figure 2:** Demographic Situation in Russia. (Soboleva S.V., 2011)

**Table 1**

Number of Miscarriage Pregnancy Cases in 2011.

| Hospitals                | City's Districts | Expected, but not Delivered | Cases in total in the department |
|--------------------------|------------------|-----------------------------|----------------------------------|
| St. George Hospital      | Vyborgsky        | 1740                        | 3000                             |
| St. Elisabeth Hospital   | Kalininsky       | 1004                        | 8000                             |
| Hospital No. 26          | Moskovsky        | 1021                        | 6720                             |
| Alexandrovskaya Hospital | Nevsky           | 1279                        | 9500                             |
| Mariinskaya Hospital     | Tsentralny       | 390                         | 3500                             |
| Total:                   |                  | 5434                        | 30720                            |

It is obvious that there are many miscarriage pregnancies. In five hospitals there were more than five thousand women who lost their pregnancies. There are 18 districts and several major official hospitals in Saint Petersburg. Thus, we tentatively assume that some 20,000 babies were not included in the city statistics due to miscarriage pregnancy in 2011. This is the yearly children depopulation in our city from 1990 to 2007.

According to the data found on the Internet (Wikipedia, 2015), miscarriage pregnancies rates amounted to 30% in Europe, 20% in the USA, and 31% in New Zealand. This demonstrates that miscarriage is an issue in countries all over the world. Analysis of the causes of embryo death was conducted at the Pediatric Center in Saint Petersburg in 2009.

**Table 2**

Analysis of Miscarriage Pregnancies in 2009 by the Pediatric Center of Saint Petersburg.

| Diagnosed Conditions in Embryo | Number of cases | Rates,% in total |
|--------------------------------|-----------------|------------------|
| Ascending bacterial infection  | 196             | 36,8%            |
| Haematogenous infection        | 132             | 24,8%            |
| Immune pathology               | 65              | 12,2%            |
| Endocrine pathology            | 30              | 5,6%             |
| Chromosome pathology           | 109             | 20,5%            |

All causes of death are of the usual pathological nature, but they lead to embryo death in a few weeks.

In order to clarify the causes of this phenomenon, it is necessary to determine how the conditions of peoples' lives have changed over the last few years in these countries.

These years are characterized by the rapid development of a new industry—cellular or mobile communication. Its distinctive feature is a close proximity of a radio transmitter to the human body. Another factor is the creation of basic retransmitted station networks. Compared to old broadcasting stations, they are much closer to people, and many people are exposed to their radio waves, regardless of whether they use a cellular phone or not. If there are several phone operators in a city, emissions of their networks are combined together.

In order to demonstrate the damage to health from electromagnetic radiations (EMR), we must mention the fact that Korean scientists have established that EMR with intensity of  $1 \mu\text{W}/\text{cm}^2$  or greater from broadcasting radio stations (in case a family lives about 1 km away from the antenna tower) was associated with an exponential increase of the likelihood of brain tumors (1000 cases statistics) and leukemia (2000 cases statistics) in children (Ha M. et al. 2003).

Numerous studies conducted on animals have demonstrated that chronic exposure to high-frequency radiation of energy of 10 to  $50 \mu\text{W}/\text{cm}^2$  "resulted in substantial changes in cell and humoral immunity systems, which persisted for a long period after the exposure" (Grigoriev Yu.G., Grigoriev O.A. 2013). Here are the results obtained by the S. M. Kirov Military Medical Academy (Saint Petersburg) during studies of health conditions in the people who live under "microwave smog" exposure. A complex study on the impact of microwave EMR "on humoral immunity and non-specific resistance status of residents in Konyshi Village, Arkhangelsk Region" was published in 2000 (Petlenko S.V. et al., 2000). A short-wave radio communication retransmitter with a capacity of 100 mW was installed in the center of this village. This study demonstrated both a reduction of humoral immunity and changes in T- and B-cell immunity

systems in all village residents. As a response to the EMR exposure, increased susceptibility to infectious diseases, respiratory diseases, and gastrointestinal diseases was recorded in all village residents. Thus, it was demonstrated that exposure to high-frequency EMR could significantly change (reduce) immunity both in animals and in humans. This is why EMR is very dangerous for human embryos: in the beginning of embryonic growth, the immunity only begins to develop and right away it can be suppressed by the EMR impact.

Table 2 clearly shows that more than half of the lost embryos were ruined by infections. Disease appears in the embryo organism and makes swift progress due to its weak immunity, which ruins the embryo. Immune, endocrine, and chromosome abnormalities in Table 2 are associated with changes in genetic properties of the embryo organism and accounts for the loss of the other half of the embryos. The investigation in England (Jauniaux E., Kaminopetros P., El-Rafaey H., 1999) showed the same values. At least 50% of miscarriage cases were accompanied by chromosomal abnormality.

The process of changing the genetic properties of living cells under the influence of various carcinogens, including EMR, is discussed in detail in "Energy Model of Carcinogenesis" (Ovsyannikov V.A., 2005a, 2005b). They originate from the exposure to external EMR, which can induce electric currents in embryo tissues.

The only consecutive chain of events for this process is presented below.

1. Alternating EMR in embryo tissues can induce electric currents; these currents cause loss or degradation of some cells in which these currents flow.
2. Degradation and loss of cells are accompanied by the release of energy in the ultraviolet (UV) range.
3. This energy is transmitted by the radiation or non-radiation to adjacent living cells and absorbed by them.
4. UV energy quanta are primarily absorbed by bases of cell DNA molecules.
5. After absorption, DNA molecules switch to excited status in which the molecular structures

may reconfigure themselves and move to new stable structures of higher probability; the same numbers of atoms are in new arrangements.

6. Some energy is accumulated in this state; thus, molecules are more active.
7. Such reconfiguration may occur in some proto-oncogenic areas of the genome, then this area may become an active oncogene.
8. When any genome area has transformed into an active oncogene, new proteins (oncoproteins) would form there and change a normal cell into a cancerous one.
9. When such structure transformations have occurred in haematogenous areas or endocrine areas, they might lead to immune or endocrine abnormalities.
10. Thus, abnormal genetic changes appear in embryo tissues.
11. It is a known fact that when living tissues are exposed to carcinogenic factors, it leads to more significant changes in cell genomes as chromosome aberrations, which are observed during analysis of such tissues (Olinitci, K D., 1978).
12. Thus, under the impact of various carcinogenic factors in a living organism, cancer cells appear. Usually, they are detected and eliminated by the body's immune system. Only when it is weak, or when the density of a carcinogenic effect exceeds the capacity of the immune system, does it begin to create nodes of cancers.
13. If a new active oncogenic area appears in embryo tissues after exposure to EMR, the first tumor cells soon turn into malignant neoplasms because the embryo's immune system is not ready yet. However, if at its creation, embryo will affect high-frequency EMR, that can to suppress work of immune system, the result can be tragic.

In some cases, tumor cells may not only become mature, but even move to the metastasis stage. Hence the fact that tumors and even metastases are sometimes found in embryos during post-mortem examinations. See Figure 3 and Figure 4 (Glukhovets B.I., Ovsyannikov V.A. 2010, Ovsyannikov V.A., 2014).

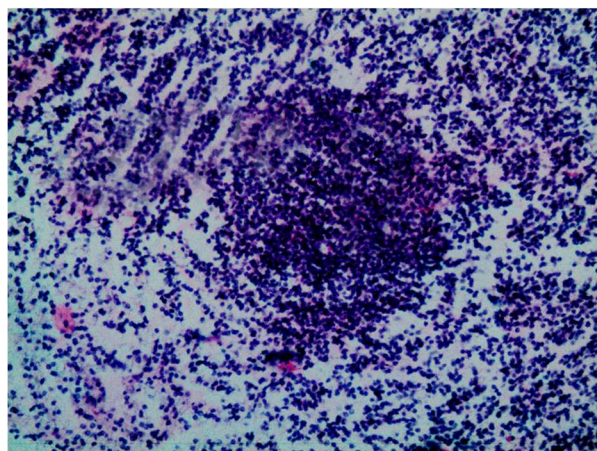


**Figure 3: Tumor in an Embryo**

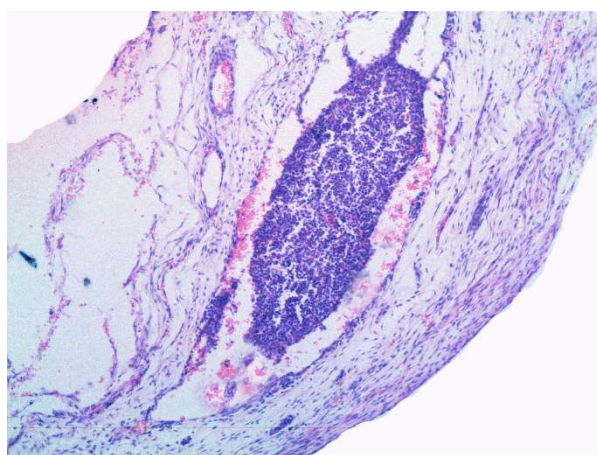


**Figure 4: Metastases in Embryo Myocardium**

EMR value measurements in our country and elsewhere in the world have shown that the people who lived at a distance from 30 to 50 meters away from base stations of cellular telephone networks are exposed to EMR of  $3 \mu\text{W}/\text{cm}^2$  to  $10 \mu\text{W}/\text{cm}^2$  (Baltrenas P., Buckus R., 2011).

There are many places in Saint Petersburg where base stations are installed in close proximity to residential or office buildings. Many people in the city may be exposed to their high level emissions.

A cellular phone has maximum power of 1 W to 2 W during communication with the base station. When a pregnant woman brings the phone close to her small pelvis, at that moment, EMR density will amount to approximately  $1000 \mu\text{W}/\text{cm}^2$  (ignoring tissue attenuation), which is thousands of times higher than the permissible level.

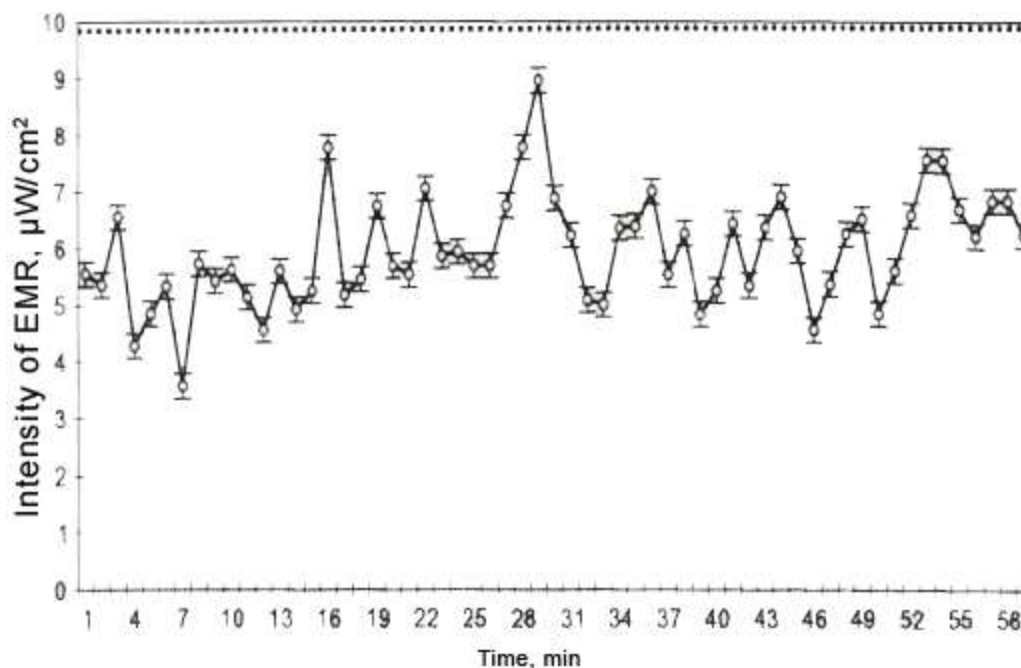


**Figure 5:** EMR value measurements

At that point, only tissue attenuation between the phone and the embryo will protect her.

Exposure of pregnant women to EMR from cellular phones and retransmitter base stations represents serious risks for growing embryos. Which emission source of these two is more dangerous requires further evaluation.

It may already be concluded that a baby in the mother's womb may receive a rather harmful radiation dose before being born. Consequently, E. K. Ailamazyan, the chief obstetrician of Saint-Petersburg, stated in his report in 2008, "Children with serious abnormalities make up to one third of all children born in our city". This could represent 15,000 to 20,000 children a year (Ailamazyan E.K., 2008). This number continues to grow.

This is why now no more than 5% of all children in Russia can be considered completely healthy (Rappoport I.K. 2005).

## Recommendations and Conclusions

We must fight this new threat to humanity. The recommendation is to engage the World Health Organization on behalf of the present this Conference with the following proposals:

1. To extend the right to healthcare of human beings to embryos.
2. To inform the public about the risks of EMR exposure from cellular communications and other radio wave sources.
3. To classify women and children as a separate category susceptible to EMR and to set standard safe EMR levels for them.
4. To introduce personal protection suits for pregnant women against harmful EMR.

## References

- Ailamazyan, E.K. (2008), "Ecological and Genetic Grounds for Reproductive Health Disorders and their Prevention". Report at *the II International Environment Forum*, St. Petersburg, 01-04 July
- Baltrenas, P., Buckus, R. (2011), "Indoor measurements of the power density close to mobile station antenna". *The 8th International Conference Environ-Mental Engineering*, Selected papers, 19-20.05.2011. Vilnius. Lithuania pp. 16-21
- Glukhovets, B.I. and Ovsyannikov, V.A. (2010), "Spontaneous Disorder in Embryonic Erythropoiesis in Observations of Miscarriage Pregnancy: Morphological Signs and Possible Ecological Grounds". Report at the *IVth Russian Congress of children Pathologists*. Viborg. Congress Proceedings, pp.85-88
- Grigoriev, Yu.G., Grigoriev, O.A. (2013), "Cellular Communication and Health. Electromagnetic Environment. Radiobiological and Hygienic problems. The prognosis of hazard". "Economy". Moscow. P. 567
- Ha, M. et al. (2003), "Incidence of cancer in the vicinity of Korean AM radio transmitters". *Arch. Environ. Health*. Vol. 58 (12). pp. 756-762
- Jauniaux, E., Kaminopetros, P., El-Rafaey, H. (1999), "Early pregnancy loss". In Martin, J. Whittle and C.H. Rjdeck. *Fetal medicine: basic sciences and clinical practice*. Edinburgh: Churchill Livingstone. P. 837. ISBN 0-443-05357-X
- Mirabishvili, V.M., Dyachenko, O.L. (2008), "Dynamics of Oncological Morbidity and Mortality of Children Population in St. Petersburg". *Problems in oncology, St. Petersburg*, Vol. 54, No. 3, pp.272-280
- Olinitci, K D. (1978), "Cromozomii in cancer". "Medicala", Bucuresti, p. 232
- Ovsyannikov, V. A. (2005a), "Energetical Model of Carcinogenesis", *Problems in oncology, St. Petersburg*, Vol. 51, No. 1, pp.34-41
- Ovsyannikov, V.A. (2005b) "Energetical Model of Carcinogenesis: Conformations." *Problems in oncology, St. Petersburg*, Vol. 51, No. 2, pp.154-159
- Ovsyannikov, V.A. (2014), "Impact of Electromagnetic Radiation upon Children Population Dynamics in St. Petersburg". Report at the *IV International Conference "Man and electromagnetic fields"*. Conference Proceedings, pp. 222- 233, Sarov, Russia
- Petlenko, S.V. et al. (2000), "Status of Humoral Immunity and Non-Specific Resistivity Factors in Persons Dwelling under Exposure of Microwave Smog". "RMMA", *St. Petersburg. Topical issues of Military-field therapy*, No. 3, pp. 128-134
- Rappoport, I.K. (2005), "Evaluation of Disease Incidence Dynamics in Students according to the Results of Prophylactic Medical Examinations". *Mjsw. Hygiene and Sanitation*, №6, pp. 48-50.
- Soboleva, S.V. (2011), "Demographic Setting in Russia: We are Dying out", *Union Bulletin, SD RAS*, No. 4(12), pp.8-11
- Wikipedia (2015), "Miscarriage". <https://en.wikipedia.org/wiki/Miscarriage>