

Ulman M.V., Kartashov E.Yu., Kineva T.A.

DEVELOPMENT OF MEDICINE BASED ON NUCLEAR TECHNOLOGIES

*Seversk Technological Institute of NRNU MEPhI,
65, Kommunisticheskiy Prospekt, Seversk, Tomsk Region, 636036,
e-mail: clouseton7@gmail.com*

Nowadays, issues of increasing morbidity and mortality from neoplasms, cardiovascular pathologies and their late detection are urgent for the Russian Federation as well as the lag in the development and equipping of medical institutions with nuclear medicine technologies. Cancer is the second leading cause of death in the world, and the incidence rate is constantly growing. A unique diagnosis helps to quickly solve this problem, and this requires equipment that could quickly and most safely for human health detect cancer in the early stages of its development.

The study is devoted to the development of the nuclear industry in medicine. The history of the creation and use of nuclear technologies in medicine since the 1930s is outlined. Information about the most significant devices of our time is presented.

Particular attention is paid to nuclear medicine technologies which are primarily aimed at improving the situation in the field of diagnosis and treatment of cancer.

Nuclear physics has given us chemical elements that do not exist in nature, including heavy elements with a mass exceeding uranium. Some isotopes of these elements have found application in nuclear medicine: they are used as sources of neutrons for irradiating tumors and for diagnosing diseases. Such elements are incredibly difficult to obtain, and therefore they are expensive and rare.

It is concluded that at present the Russian Federation differs significantly from developed countries in terms of equipment for radiological diagnostics and treatment. Thus, the problems of nuclear medicine dictate the need to create a developed infrastructure for the diagnosis and treatment of diseases using modern technologies, as well as the development of new educational programs to train doctors, medical physicists and radiochemists in this field.