



## Short Article

# World Cancer 2021: Prevention and rehabilitation in oncology - Pechersky A.V - North-Western State Medical University named after I.I. Mechnikov, St. Petersburg, Russia

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## Abstract

Insufficient replacement of dead old cells by progenitor cells in people after 35 years (due to a reduction in the pool of stem cells occurring at an intensity of 1% per year) leads to compensatory excess formation of cellular growth factors that stimulate the division of the remaining cells. Prolonged, increasing with age, stimulation of mitogenic activity causes malignant cell degeneration. Increased stimulation of mitotic activity in people older than 35-40 years can be reduced to a normal level by restoring the number of pluripotent stem cell pool during transfusion of the mononuclear fraction of peripheral blood harvested from young donors aged 18-23 years of the same blood groups and gender as recipients. The renewal of epithelial-reticular thymus cells that train T-helpers by donor pluripotent stem cells leads to the recipient's immune system perceiving tissue-specific antigens of donor cells as "its own". For this reason, donor pluripotent stem cells and the cells into which they differentiate are not rejected by the recipient's immune system (RF Patent No. 2350340). The restoration of tissue renewal is accompanied by a decrease in elevated levels of cellular growth factors. Violation of gonad renewal (regeneration) in people over 35 years of age leads to a decrease in the production of sex hormones and to the subsequent development of metabolic syndrome, as well as to an increased risk of tumor transformation of tissues whose cells carry sex hormone receptors (due to a violation of their division and differentiation). A decrease in testosterone production in men after 35 years leads to a violation of the differentiation of androgen-independent epithelial cells of the prostate gland into androgen-dependent cells (which need further differentiation and division in testosterone formed in a physiological pulse mode). In response to a decrease in testosterone production, compensatory and adaptive reactions develop aimed at increasing mitogenic stimulation: the levels of dihydrotestosterone and estradiol, cellular growth factors, insulin and other factors increase

These factors are reduced when adequate testosterone replacement therapy is carried out with a corresponding dose of the drug to a decrease in testosterone with age. At the same time, the levels of LH and FSH become normal (ensuring the formation of testosterone by Leydig's own cells in a physiological pulse mode and the preservation of spermatogenesis). For women, the most preferred are precursor drugs with the active substance "tibolone" (pregnenolone), from which estradiol, progesterone and testosterone are formed in physiological proportions under the influence of the patients' own enzymes. Restoration of regeneration and compensation of sex hormones can be used for prevention and rehabilitation in oncology

## Biography

Pechersky, Alexander is an Associate Professor at North-Western State Medical University named after I.I. Mechnikov, St. Petersburg, Russia. His achievements include the original articles devoted to the influence of partial androgen deficiency among aging men (PADAM) on the development of benign prostatic hyperplasia, prostate cancer and metabolic syndrome, diagnostics and treatment of partial androgen deficiency of aging men, regeneration, immune system, carcinogenesis, cicatrization, desensitization, immunological tolerance and antitumor immunotherapy.