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## Fund "Nauka" Project № 22002 Resume – Competition-Based Session 2022: "Bone health and fracture risk in men according to their androgen status" Project leader: Assoc. prof. Mira Valentinova Siderova, MD, PhD

The aim of this research study is to look for correlations between outcomes that provide information on androgen status (male sex hormone levels) among men and their impact on bone density and future fracture risk. Respectively, the impact of prostate cancer as a current socially significant disease and the influence of therapeutic approaches on patients' bone health will be investigated.

The research **tasks** include:

- 1. Assessment and analysis of the patient's androgen status, according to the patient's physical status and relevant laboratory hormonal tests;
- 2. Assessment of bone density, using generally accepted imaging methods;
- 3. Measurement of bone metabolic status, using appropriate laboratory bone markers;
- 4. Collection of retrospective lifestyle and dietary information, using relevant validated questionnaires;
- 5. Determination of the nature and relationships between the parameters studied and their impact on the fracture risk.

The subjects of the study are patients with prostate cancer who are cured with androgen deprivation therapy (with levels of male sex hormones comparable to that after castration) and a control group, patients not taking medications affecting androgen levels.

In the course of the project, the following established **methods** and technologies will be used:

- 1. History and physical status, giving information about risk factors associated with fractures, as well as signs of hypogonadism;
- 2. Laboratory tests hormone analysis, markers of bone metabolism, prostate specific antigen, etc.;
- 3. Imaging methods osteodensitometry;
- 4. Statistical analysis and graphical presentation of results.

**Expected results:** to obtain data on male sex hormone levels among different groups of patients and their correlation with bone strength and future fracture risk.