

# **BONE MINERAL DENSITY, OSTEOPOROSIS AND ITS CONSEQUENCES IN UKRAINIAN POPULATION**

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## **BONE MINERAL DENSITY, OSTEOPOROSIS AND ITS CONSEQUENCES IN UKRAINIAN POPULATION**

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The population of the Ukraine is 46 million people (21 million men and 25 million women) while the number of people aged 50 years and older is 17.3 million (37% of the total population). It is predicted that the population of Ukraine will decrease to 33 million people by 2050 and thus 50% of the population will be 50 and over and 21% will be 70 and over.

In Ukraine the estimated number of postmenopausal women with osteoporosis risk and osteopenia comprises 7 million (28% of

total number of women). According to research carried out in 2007-2008 by the Ukrainian scientific medical centre using DXA, it is estimated that 2 million postmenopausal women (20% women and older) suffer from hip osteoporosis. Osteopenia was estimated in 4.6 million men and 5.8 million women.

We determined the bone mineral density (BMD) of normal Ukrainian female subjects and compared results with USA/European reference data. The research was conducted at the Ukrainian scientific-medical centre for the problems of osteoporosis, and included 353 women aged 20-79 years. Conventional BMD measurements of the spine, proximal femur and radial shaft were determined by DXA using a densitometer Prodigy (GE Medical systems). Age-related changes in BMD were similar in form to those of USA/Northern Europe and US/European reference data. However, BMD data of spine for subjects of 50-59 years in our sample were lower than published values. The prevalence of osteoporosis and osteopenia for female subjects was 11% at the femoral neck, and 20% and 24% at the spine and radial shaft respectively. These data were published in the Annals of New York Academy of Sciences (2007).

Analysis of osteoporotic hip fractures occurring from 1997 to 2002 in Vinnitsa (Ukraine) was performed. During this period the frequency of hip fractures varied from 117.1 to 171.1 per 100,000 population of 50 years and older and was almost twice as high in women compared to men. These data are a bit lower in comparison with other European countries, a fact which may indicate lack of diagnosis of these fractures. The incidence of osteoporotic fractures of the wrist was significantly higher. The highest figures were shown in 60-64 year age group (women 1940.0, men 403.1 per 100,000 population), 70-74 years (women 1987.0, men 399.3 per 100,000) and 75-79 years (women 1986.2, men 422.7 per 100,000). This type of fracture was also predominant among women. The incidence of wrist fractures in women increases from 55-59

years to its maximal level at the age of 75-79 years with the following decline at the age of 80 years and older reliably exceeding the incidence of fractures in men of all age groups.

We carried out a multicentral study of structural-functional bone state of children residing in environmentally unfriendly regions of Ukraine, Belarus, Lithuania and Moldova. The results show significant changes of structural-functional bone state of children depending on their place of residence.

Thus, Ukrainian population is aging very fast and osteoporosis is becoming a real epidemic. Osteoporosis is better to prevent than to treat.

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