

BONE DENSITY IN THE HIP AND THE LUMBAR SPINE IN HEALTHY MALE POPULATION

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OBJECTIVES

Low bone density is a frequent finding in both women and men of older age. There is not enough data about bone density in healthy males per decade of age

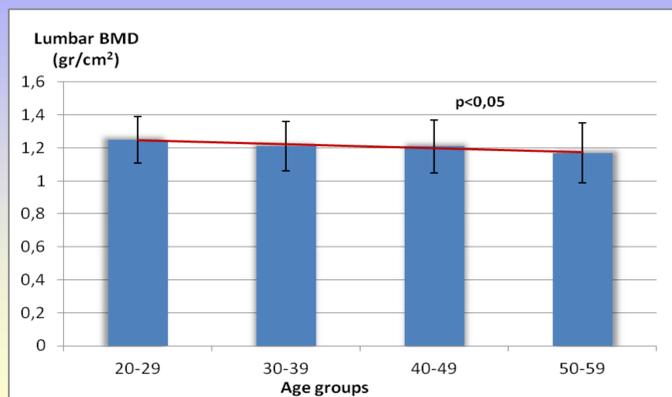


Figure 1. Comparison of spine BMD between age decades.

METHODS

We measured bone density (BMD), T-score, Z-score and body mass index (BMI) in 1745 healthy men, age 20-59 years old. The study population was divided into four groups according to their age: Group A 20-29 years old, Group B 30-39, Group C 40-49, Group D 50-59, and we compared the bone density between groups. Mean age of the total study population was 39.4 years, mean weight 83.6 kg and mean BMI 26.5 ± 3 kg/m².

	GROUP A 20-29	GROUP B 30-39	GROUP C 40-49	GROUP D 50-59
N	546	132	725	342
Height	1,79±0,06	1,79±0,06	1,77±0,06	1,75±0,1
Weight	80,3±9,9	84,3±9,8	85,6±10,6	84,2±11,2
BMI	25±2,7	26,2±2,8	27,3±2,9	27,3±3,3

Table 1. Anthropometric characteristics of the healthy men population (mean ± 1 SD).

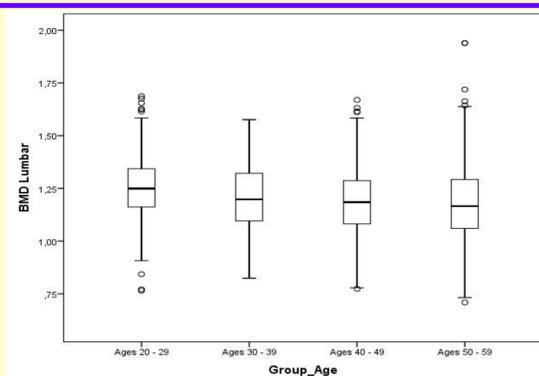


Figure 2. Box and Whisker plots in regard to the comparison of spine BMD between age decades.

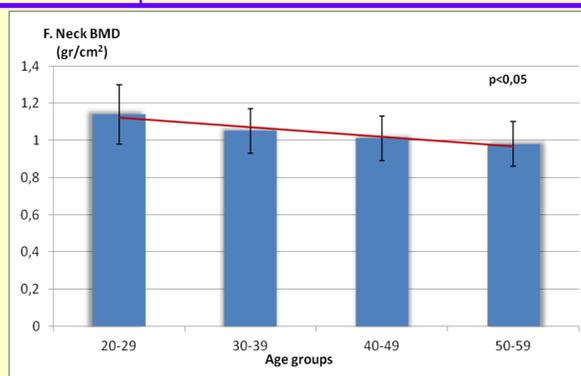


Figure 3. Comparison of Femoral Neck BMD between age decades. ($p<0.05$ between each other).

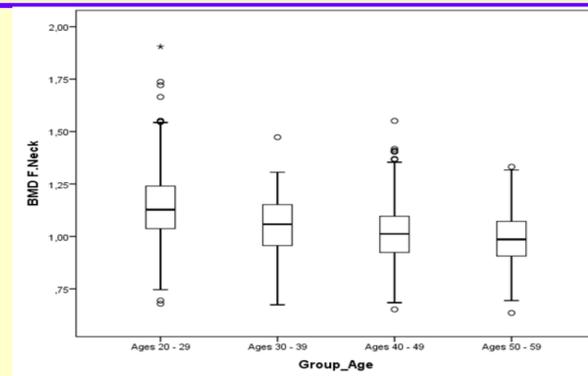


Figure 4. Box and Whisker plots in regard to the comparison of Femoral Neck BMD between age decades.

RESULTS

The BMD's per decade for the lumbar spine were as following: Group A $1.25 \pm 0,14$ g/cm², Group B $1,21 \pm 0,15$ g/cm², Group C $1,20 \pm 0,16$ g/cm², Group D $1,17 \pm 0,18$ g/cm². Statistically significant differences were observed only between Group A and all other groups. There was no statistically significant difference between Groups B,C and D when compared to each other.

The BMD's for the hip were as following: Group A $1.15 \pm 0,28$ g/cm², Group B $1,08 \pm 0,33$ g/cm², Group C $1,01 \pm 0,12$ g/cm², Group D $0,98 \pm 0,12$ g/cm².

Statistical analysis showed that for each age group, there was a statistically significant difference ($p<0.05$) when all age groups were compared with each other.

CONCLUSIONS

In a population of healthy men :

- There is a progressive decrease in bone density according to age
- The decrease is more obvious in the hip
- In the lumbar spine there is also a decrease but not statistically significant
- One possible explanation is the appearance of osteophytes after the age of 50 which may falsely increase bone density