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DETERMINATION OF ANTHROPOMETRIC INDICES OF MEDULLARY CANAL OF THE PROXIMAL FEMUR

ABSTRACT. Background. The relevance of this research is caused by a deficiency in the data of anthropometric parameters and structure of the femur needed for development of hip endoprosthesis. **Objective.** To determine the anthropometric characteristics of the proximal part of the femoral channel. **Methods.** 263 intact hip joints were examined with x-ray-anthropometric methods. The statistic analysis was performed and histograms were created. **Results.** It was estimated, that the average size of the transversal section of the femoral channel in diaphyseal part is larger in males than in females and also larger in right extremity than in left one, larger in senile persons than elderly or middle age persons. In all cases the difference was about 10%. This divergence is reliable for right and left extremities and for senile patients and not reliable for gender. **Conclusion.** Significant differences of the femoral channel sizes were revealed. It shows the necessity of determining several sizes of transversal section of the prismatic part of the stem of hip endoprosthesis. It is important to determine 5 typical sizes for the modular cementless stem of hip endoprosthesis. These sizes have to correspond to the following sizes of transversal section of femoral channel: X=12, 14, 16, 18, 20 mm.

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Fig. 1. Scheme of endoprosthesis contacting the cortical bone in sagittal plane.

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