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DYNAMIC AND MEASURING ORTHOSIS FOR THE HIP JOINT WITH THE WIRELESS DIAGNOSTIC AND MEASURING MODULE, AND THE WAY OF MEASURING DIAGNOSTIC PARAMETERS OF THE HIP JOINT

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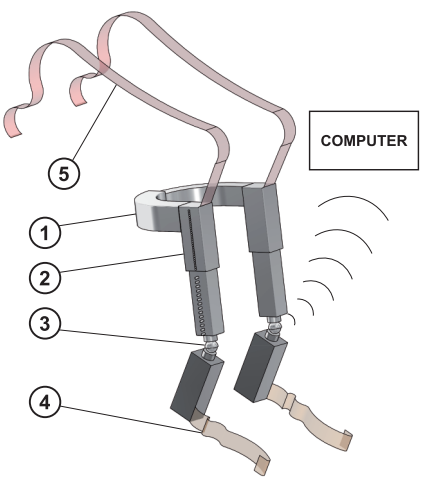
The essence of the invention is the use of digital sensors integrated with the dynamic and measuring orthosis, and the way of measuring diagnostic parameters of the hip joint. The measurement system of the orthosis, as a general rule, measures and records the values of hip joint inclination angles and the force exerted by muscles. The digital data obtained via wireless transmission is next transmitted to the software which enables controlling the system and interpreting the results.

The advantage of the invention is the possibility of using the integrated system of sensors ensuring multiple cyclical reading of parameters, thus allowing for decreasing measurement errors (in relation to the known analogue measurement methods), and achieving the results that are necessary for automatic assessment of correctness of patient's walk and its virtual simulation.

The creators of the invention plan to use the orthosis for measuring diagnostic parameters of the hip joint in order to specify the correctness of walk of orthopaedic patients (e.g. before and after the surgery of implantation in the area of femoral head), as well as in healthy people for modelling the patterns of walking in computer simulations.

The embodiment of the invention:
sets of sensors with a switch (3) are mounted on the height adjuster (2) which, together with the hoop (1), constitutes the frame of the orthosis. In order to take a measurement from one or two legs, the dynamic and measuring orthosis should be put on by fastening the hoop (1) at the waist. Determine, with the use of the height adjuster (2), the location of a set of sensors (3) at the height corresponding to the anatomical location of the femoral head, and then fix the dynamic and measuring orthosis with Velcro-fasteners (4) to the thigh of the examined person. Harness (5) put on the shoulder girdle provide additional stability of the diagnostic and measurement system when taking measurements, both dynamic as well as static.



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