

PROTECTING STYLE IN ALPINE SKIING - HIP AND KNEE JOINT SPECIFIC TECHNIQUES

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INTRODUCTION. With joint complaints such as back pain, hip or knee osteoarthritis respectively total endoprosthesis for many patients the question arises of further physical activity, also in alpine skiing. In recent years the way to do this was basically affirmed if appropriate guidelines are observed.

PRECONDITIONS. Essential requirement among muscular preparation and experience is a joint protecting skiing technique. Essential basic elements of protecting style are a hip wide ski control and a mean body position with slight anteverted upper body. Body transverse axis should maintain a neutral position with frontal orientation. Turn initiation can be facilitated by various measures as ahead-side-tipping, step-position of ski, edge-pressure of foot, pedalling etc. While turning among leading outer-ski-loading also inner-ski should be somewhat loaded (Kuchler et al., 2011, Schönle et al., 2014). Additional to this basic technique in certain joint problems of back, hip or knee, or even after total joint replacement more symptom-orientated specific techniques should be applied and observed (Jöllenbeck et al., 2012).

RESULTS. A protecting-technique knee should be aligned that compression forces of femorotibial joint and patella glide bearing are reduced most widely as well as loads of quadriceps and patellar tendon. Single-sided additional loads of the lateral knee compartments should be avoided as well as loaded distinct knee-bending. With wide ski-leading outer-leg in preferably extended knee position should be more loaded, flexed inner-leg preferably slightly. Body's centre of gravity should be shifted forward by a more anteverted position. A retroverted position is absolutely to avoid as well as inside knee buckling, a slight to moderate hip buckling is allowed (Jöllenbeck et al., 2012). Because rotations and varus or valgus positions of knee are not to be avoided, patients with knee endoprosthesis have an increased risk of endoprosthesis easing, so from medical perspective skiing is actually not recommended. Nevertheless, it is reported that skiers with knee replacement haven't any problems for years. A protecting-technique hip should be aligned that single-sided loads of hip joint and increased joint loads through increased hip-buckling are avoided. With hip-wide ski position both skis should be loaded continuously, a moderate hip-buckling is allowed. Knee and ankle joints should be slightly flexed to absorb or reduce shocks. A slight to moderate anteverted upper body position should be observed and an extreme turning pressure should be avoided (Schönle et al., 2012). From medical perspective there are hardly any objections against skiing with hip endoprosthesis. However, rotational forces through body twisting and falls on hip joint should be avoided. Additionally wearing of a hip-protector is necessary.

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