THE EFFECT OF AN EXERCISE PROGRAMME ON THE INTRINSIC RISK FACTORS OF ANTERIOR KNEE PAIN IN VOLLEYBALL PLAYERS.

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Background: The term 'anterior knee pain' (AKP) is suggested to encompass all pain-related problems of the anterior part of the knee [1]. The cause of AKP is considered to be multifactorial, including both intrinsic and extrinsic risk factors [2]. Despite all studies conducted, the relationship between intrinsic risk factors and AKP stay indefinite. A wide variety of treatment options have been proposed, but studies concerning the prevention of AKP are scarce. A clear consensus regarding the terminology, aetiology and treatment for pain in the anterior part of the knee, has yet to be found [3]. This study examines the effect of a 4-month exercise programme on the intrinsic risk factors for AKP in volleyball players, because AKP and more in particular patellar tendinosis is most prevalent in this group of athletes.

Study design: A randomized clinical trial was set up during the 2005-2006 volleyball season. The intervention group performed the programme twice a week for 16 weeks during the volleyball season, before, after or during the practice and on top of their normal training routine. The control group performed their normal training routine.

Methods: Eventually, 151 subjects (81 control; 70 prevention) participated and were measured pre- and post-intervention for intrinsic risk factors. Normal distribution of the data was examined using the Kolmogorov-Smirnov Goodness-of-Fit Test (p<0.05). The effect of the exercise programme was determined by the Independent samples t-test (p<0.05), or the Mann-Whitney-U test (p<0.05). A Chi square analysis (p<0.05) was used to determine the effect on nominal variables.

Results: Jump height was found to be significantly higher (p<0.05) in the intervention group than in the control group. Hip rotation asymmetry for the left leg was significantly lower in the intervention group during the post-measurements. A significant increase (p<0.05) in quadriceps muscle (both legs) and hamstring muscle flexibility (left leg) was higher in the intervention group than in the control group.

Conclusions: These results indicate positive effects on some of the intrinsic risk factors inherent to the development of AKP. The reason why prevention studies have not been undertaken before is most likely to be found in the lack of uniformity concerning the term AKP and the inconclusiveness of treatment options.

References
2. Bahr R, Krosshaug T. Understanding injury mecha-