Material/patients and methods We conducted a seminar for CAD patients, consisting of 4 successive days of physical activities (Nordic walking, Tai Chi, Qi Gong…) with initial motivational interview and personalized counseling at the end of the stay. Participants completed the Barriers to Physical Activity in Coronary heart disease (BAPAC) questionnaire at the beginning and end of the seminar and 3 months later. They also completed the Dijon Physical Activity Score (DPAS) at the beginning of the seminar and 3 months later.

Results Eleven patients participated in the seminar (9 men, 2 women, 63 ± 8.4 years), had CAD diagnosed for 5.8 ± 4 years and were predominantly overweight/obese (mean BMI: 29.3 ± 3 kg/m²). No adverse events were reported. At the beginning of the seminar, the average BAPAC score was 29.5 ± 8/60 with an average DAPS of 20.8 ± 3/30. At the end of the seminar, the mean BAPAC score was lower: 23.8 ± 7/60 (P < 0.001). Barriers that improved significantly were: fear of heart attack, insufficient fitness, shortness of breath, lack of motivation and fear of another cardiovascular problem. Three months after the seminar, the mean BAPAC score was still lower than before: 26.1 ± 6/60 (P < 0.05) and the DAPS did not significantly change: 21.5 ± 3/30.

Discussion A physical activity seminar with motivational interviews and personalized counseling on PA quickly reduces the barriers to physical activity in CAD patients, measured by the BAPAC questionnaire. Beneficial effect persists 3 months after the intervention. However, these changes are not associated with a significant increase in PA measured by the Dijon physical activity score. Further studies are needed to assess the sensitivity of the BAPAC questionnaire and the long-term correlation between PA barriers removal and the increase in PA. Further studies are needed to assess the sensitivity of the BAPAC questionnaire and the long-term correlation between PA barriers removal and the increase in PA.

Keywords Physical activity; Coronary heart disease; Barriers

Disclosure of interest The authors have not supplied their declaration of competing interest.

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C0039

Wrist movements during isokinetic assessment of muscle rotators of the shoulder

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Objective The assessments of the internal (IR) and external (ER) rotator muscle strength of the shoulder are often studied from a hand held accessory gripped. In these conditions, even if the wrist is in alignment with the radius, it is not possible to eliminate any compensatory movements of the wrist during maximal contractions of the shoulder muscle rotators. The objective of this study was to investigate the movements of the wrist in flexion/extension during an isokinetic assessment of the strength of shoulder rotators.

Material/patients and methods Twenty-two healthy participants were explored. Participant previously installed in a seated position, the shoulder test was performed for IR and ER in concentric (CON) and eccentric (ECC) modes on each shoulder (dominant: D; non-dominant: ND), at 60 /s and 180 /s using an isokinetic dynamometer and an electronic goniometer fixed on the wrist. Data acquisition was recorded continuously and calculated with an analysis software.
Results No significant difference founded in wrist mobility depending on muscle groups (IR or ER) and laterality (D or ND) whereas dominant PT was higher at all velocity for ER (in CON and ECC modes) and for IR ECC. No significant correlation between the movements of the wrist and the strength parameters was shown. However, the wrist movements were greater in the concentric modality \( (P < 0.05) \). In addition, we observed a significant difference \( (P < 0.05) \) between angular velocities for the ND side, with greater movements at low speed \( (60\,^\circ/s) \).

Discussion, conclusion These results highlight compensation strategies of the wrist during isokinetic assessment of the shoulder depending on modality of contraction with a locking strategy in ECC mode, and angular velocity selected. To conclude, isokinetic assessment is to evaluate the muscle potential of an isolated joint by limiting the compensation, but it is important to focus on the surrounding joints due to the fact that the human body is a set of interacting segments with interconnected influences.

Keywords Isokinetic; Shoulder; Wrist; Goniometry

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C0040

Preseason isokinetic profile of knee flexors and extensors in 30 French elite professional basketball players

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Objective Basketball is an aerobic-based anaerobic contact pivot sport with a high knee injury rate. Isokinetic assessment of knee extensor and flexor muscle is currently used in elite athletes for preseason evaluation with the aim of detecting muscular imbalance and preventing orthopedic or muscular injuries. However, only few studies have described isokinetic performances in elite basketball players. The aim of this study is to describe preseason isokinetic knee extensor and flexor muscle strength profile in professional basketball players.

Material/patients and methods Thirty professional basketball players underwent a preseason isokinetic examination to evaluate the knee extensor and flexor concentric peak torque at \( 60\,^\circ/s \) and \( 240\,^\circ/s \) and flexor eccentric peak torque at \( 30\,^\circ/s \), using a ConTrex® dynamometer. Statistical analysis was performed with a paired Wilcoxon Signed-Rank Test.

Results No systematic significant difference was found between dominant or non-dominant side for: knee extensor and flexor muscle strength and knee flexor/extensor strength conventional or mixed ratios. Average deficit for agonist muscle between dominant and non-dominant side was < 10% for all muscle and contraction velocity tested. Average conventional flexor/extensor ratio ranged from \( 60 \pm 12\% \) to \( 67 \pm 18\% \). Average mixed flexor/extensor ratio was of \( 99 \pm 19\% \) and \( 104 \pm 25\% \), respectively for dominant and non-dominant lower limb. According to the criteria used by Croisier et al. (2008) to define muscle strength imbalance, 13 of 30 players (43%) had a preseason isokinetic muscle strength imbalance, with a potential indication for a specific compensating training.

Discussion, conclusion Isokinetic professional basketball players profile is unclear and the presence of a muscular strength asymmetry linked to the intensive basketball practice remains controversial. Although we observed a light trend in favor of the dominant lower limb in term of strength, our study showed no statistically significant difference between the dominant and non-dominant side, but the sample size was limited. A lot of players presented a strength imbalance and had a non-isokinetic compensating training but no isokinetic control. Further studies are needed to check if a compensating training could normalize isokinetic parameters and decrease injury rate in professional basketball players, who have a frequent history of knee injury.

Keywords Isokinetic; Muscle strength; Basketball; Strength dynamometer

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