

**EVALUATION OF ISOKINETIC
PARAMETERS AND CORE STABILITY IN
SWIMMERS WITH AND WITHOUT
SWIMMER'S SHOULDER SYNDROME**

By

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Thesis

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تقييم الخواص الايزوكينيتيكية والثبات المحوري لدى السباحين الأصحاء والمصابين بمتلازمة كتف السباح

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موجز الرسالة

عنوان البحث: تقييم الخواص الأيزوكينيتيكية والثبات المحوري لدى السباحين الأصحاء والمصابين بمتلازمة كتف السباح.

هدف البحث: يهدف هذا البحث إلى مقارنة الخواص الأيزوكينيتيكية والثبات المحوري لعضلات حزام الكتف والجزع لدى السباحين الأصحاء والمصابين بمتلازمة كتف السباح مما قد يفيد في تقييم وعلاج ومتابعة مستوى أداء السباحين وتجنب الإصابة وكذلك تعديل الحمل التدريبي مما يتوافق مع الخواص العضلية لحزام الكتف والثبات المحوري ومتطلبات التدريب

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المجال البشري:

أجريت هذه الرسالة على ثلاثون متطوعاً من السباحين

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ناقش هذا الفصل النتائج المتوصل إليها من هذه الدراسة و تم تفسيرها مستنداً على الركائز العلمية و الدراسات السابقة.

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الفصل السابع: اشتمل على المراجع و المجالات العلمية التي تم الاستناد إليها.

موجز الرسالة

عنوان البحث: تقييم الخواص الأيزوكينيتيكية والثبات المحوري لدى السباحين الأصحاء والمصابين بمتلازمة كتف السباح.
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احتوى هذا الفصل على مقدمة لعلم التشريح الوظيفي و ميكانيكا المرض. كذلك احتوى على الدراسات السابقة و التي تمت و أجريت حول هذا الموضوع و النتائج المختلفة حول هذا الموضوع. كما احتوى أيضاً على التعريف بجهاز القياسات الأيزوكينيتيكية والثبات المحوري.

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اشتمل على المراجع و المجالات العلمية التي تم الاستناد إليها.

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Evaluation of Isokinetic Parameters and Core Stability in Swimmers with and without Swimmer's Shoulder Syndrome / Bassam Ahmed Nabil Abd Elmaboud: 6 October University, Faculty of Physical Therapy. Department of Biomechanics. Supervisors: Prof DR. Salam Mohammed ElHafez, Dr. Nagui Sobhi Nassief, and Dr. Ahmed Salama Yamani. Thesis: M Sc: Biomechanics, 2010.

Abstract:

Swimmer's Shoulder syndrome (SSS) is the most common condition affecting both competitive and recreational swimmers and surfers. It is basically an overuse injury. The purposes of this study were to analyze the difference between normal swimmers and swimmers with shoulder problems (swimmer's shoulder syndrome) in shoulder isokinetic parameters, scapula isokinetic parameters, arm isokinetic parameters, trunk isokinetic parameters, agonist/antagonist ratio after maximal ten repetition at two velocities (60°/sec and 180°/sec) and to examine the relationship between shoulder external rotation peak torque and lumbar extension peak torque, pain level, Sahermann test, and unilateral bridge test. Thirty volunteer swimmers of both sexes, were divided into two groups: control group of 15 swimmers have no history of shoulder pain or instability and an experimental group of 15 matching swimmers suffering from SSS. Swimmers were examined by a) VAS for pain, b) Functional core stability score for core stability and c) Isokinetic assessment for peak torque and agonist/antagonist ratio recorded for shoulder, scapula, arm, trunk and lumbar movements. Data were analyzed using SPSS program and using repeated measure of MANOVA with alpha level set at $p < 0.05$. Results revealed that swimmers with SSS had significant decreases in shoulder external rotation, lumbar extension, and all functional core stability tests compared to the control group. There was a significant increase in the pain level in swimmers with SSS compared with the control group. Moreover, shoulder external/internal rotation ratio, scapular protraction/retraction ratio, lumbar extension/flexion ratio decreased significantly in the experimental group compared with control group. On the other hand the shoulder external rotation peak torque at (60°/sec) has a significantly positive correlation with lumbar extension peak torque, Sahermann test and unilateral bridge. Despite the importance of swimming as a sport, it produces muscular imbalances between flexors/extensors of the trunk, internal/external rotators of the shoulder. Care must be directed towards improving muscle balance more than concentrating strength towards one group of muscles.

Keywords: Swimmer's Shoulder Syndrome, Isokinetic, Core stability.

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