

"The Clinical Advantage"™

# System 4 Multi-Joint System

**NEW**

Injury Risk Management

**HAMSTRINGS**



## Reduce Hamstring Injury and Re-Injury

New System 4 software update includes two test protocols with strong correlation to reduce hamstring injury or re-injury.

[www.biodes.com/s4](http://www.biodes.com/s4)



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[www.biodes.com](http://www.biodes.com)

**1-800-224-6339**

Int'l 631-924-9000

## SYSTEM 4 ADVANTAGE SOFTWARE UPDATE SUPPORTS HAMSTRING PROTOCOLS.

Hamstring injury is serious business. Regardless of whether you have an existing process for protecting and strengthening hamstrings, the objective test protocols offered with the Biodex System 4 will provide valuable, isolated muscle-performance data. Test results, combined with established targeted outcomes, can be used for pre-emptive injury screening, managing rehabilitation and determining readiness for return-to-play.

For software update, visit [www.biodex.com/software/s4hamstring](http://www.biodex.com/software/s4hamstring)

### PROTOCOL #1:

#### Multiple Angle Comparison Test

Examines isometric bilateral flexion peak torque symmetry where the limb position puts the hamstring in a lengthened (stretched) state. Passive stretch is the inherent force (or torque) produced by the hamstring in the lengthened state. When deficits are within 10%, predisposition to re-injury is significantly reduced.

*NOTE: This Protocol requires 830-550 Hamstring Attachment. Use of any attachment other than the 830-550, with this protocol, is outside proper and intended use.*

#### Download Abstract:

(Paper in Review)

ECCENTRIC STRENGTHENING AT LONG MUSCLE LENGTHS REDUCES HAMSTRING STRAIN RECURRENCES. Tyler, et al; Orthopedic J Sports Med. Aug, 2014.

[www.biodex.com/research/15151](http://www.biodex.com/research/15151)

**Have you considered adding lengthened state eccentric training to your current hamstring program? If so, check out this protocol:**

HAMSTRING INJURY REHABILITATION AND PREVENTION OF REINJURY USING LENGTHENED STATE ECCENTRIC TRAINING: A NEW CONCEPT

[www.biodex.com/protocol/15214](http://www.biodex.com/protocol/15214)

### PROTOCOL #2:

#### Mixed H/Q Ratio Test

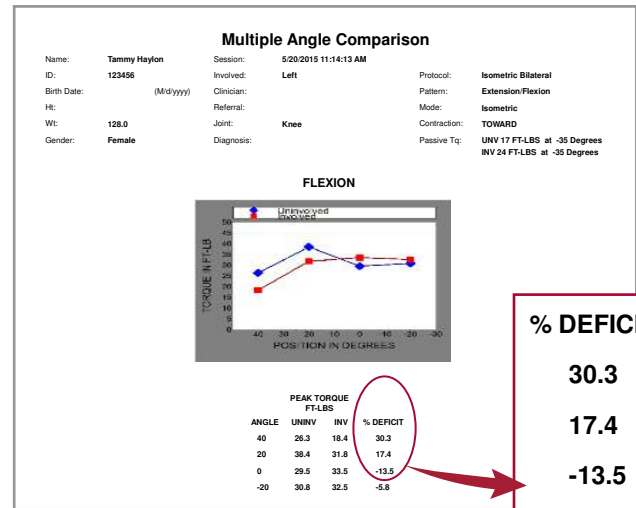
Uses a ratio of eccentric and concentric flexion peak torque where, if the ratio exceeds 1.4, hamstring injury is nil.

*NOTE: This Protocol utilizes standard Biodex Knee Attachment.*

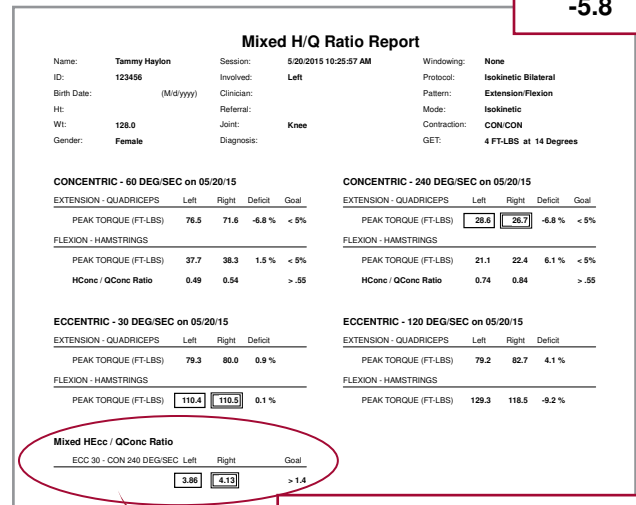
#### Download Study:

STRENGTH IMBALANCES AND PREVENTION OF HAMSTRING INJURY IN PROFESSIONAL SOCCER PLAYERS. Croisier, et al; The American Journal of Sports Medicine. April 30, 2008.

[www.biodex.com/research/15213](http://www.biodex.com/research/15213)



% DEFICIT
30.3
17.4
-13.5
-5.8



Mixed HEcc / QConc Ratio
ECC 30 - CON 240 DEG/SEC: Left 3.86, Right 4.13, Goal > 1.4

No Guesswork! Biodex software does the calculations.

**830-550** Attachment, Hamstring (set)  
For use with Multiple Angle Comparison (Lengthened State) Test

*NOTE: For System 4 customers only*

[www.biodex.com/s4](http://www.biodex.com/s4)

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