



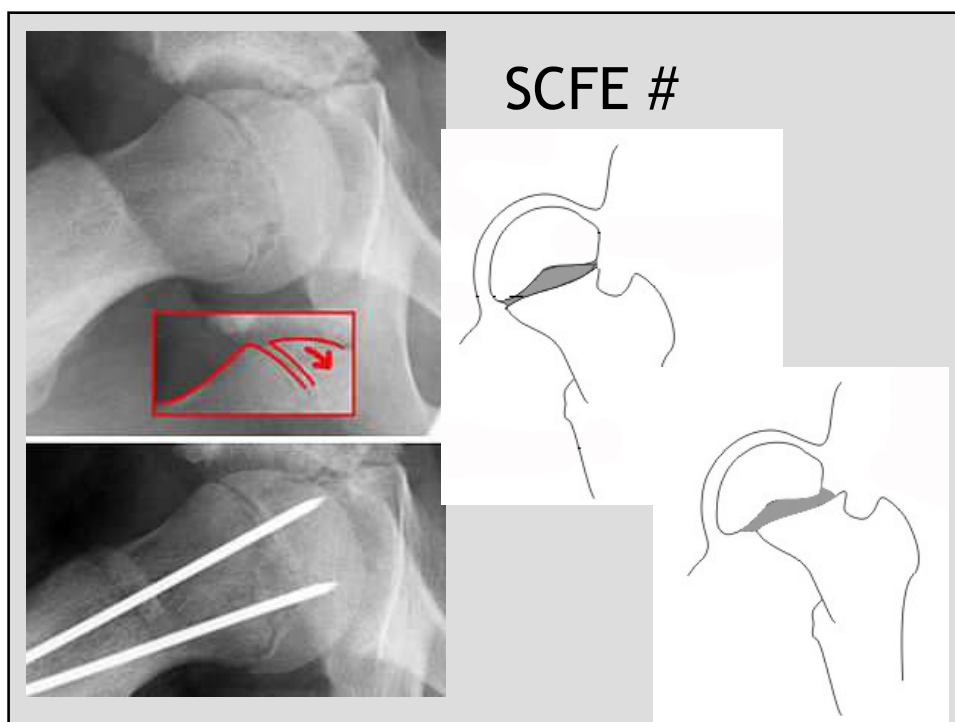
Managing Injury in Performance Clubs

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Epiphyseal damage





Osgood Schlatter's



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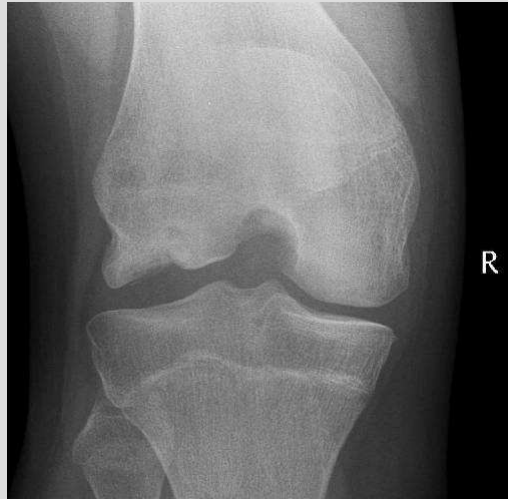
Sever's



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Osteochondritis dessecans



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Prevention and management

SECTION 1 - CLUB ACADEMY/PLAYER ACADEMY REGISTRATION NUMBER

1. CLUB ACADEMY/PLAYER: 0041

2. PLAYER ACADEMY REGISTRATION NUMBER: 1217

SECTION 4 - POSTURE EVALUATION/INDICATORS

4.1. HEAD: Pain Score 1 to 2
None None

4.2. SHOULDER/GROU JOINT MOTIVE: Pain Score 1 to 2
None None

4.3. THYRE: Pain Score 1 to 2
None None

4.4. HEAD/NECK: Pain Score 1 to 2
None None

4.5. NECK: Pain Score 1 to 2
None None

4.6. SPINE: Pain Score 1 to 2
None None

4.7. CHEST: Pain Score 1 to 2
None None

4.8. FEET: Pain Score 1 to 2
None None

4.9. ANKLE JOINT AND FOOT: Pain Score 1 to 2
None None

* SECTIONS 5 AND 6 ARE OPTIONAL MEASUREMENTS *

OPTIONAL MEASUREMENTS

A.1. JOINT FUNCTION/RANGE OF MOTION/ANTHROPOMETRIC MEASUREMENTS

5.1. SPINE: Pain Score 1 to 2
None None

5.2. ELBOW: Pain Score 1 to 2
None None

5.3. WRIST: Pain Score 1 to 2
None None

5.4. SHOULDER: Pain Score 1 to 2
None None

5.5. HIP: Pain Score 1 to 2
None None

5.6. KNEE: Pain Score 1 to 2
None None

5.7. ANKLE: Pain Score 1 to 2
None None

5.8. FOOT: Pain Score 1 to 2
None None

5.9. HAND: Pain Score 1 to 2
None None

5.10. FINGER: Pain Score 1 to 2
None None

5.11. TOE: Pain Score 1 to 2
None None

5.12. HEEL: Pain Score 1 to 2
None None

5.13. ARCH: Pain Score 1 to 2
None None

5.14. BALL: Pain Score 1 to 2
None None

5.15. HEEL: Pain Score 1 to 2
None None

5.16. ARCH: Pain Score 1 to 2
None None

5.17. BALL: Pain Score 1 to 2
None None

5.18. HEEL: Pain Score 1 to 2
None None

5.19. ARCH: Pain Score 1 to 2
None None

5.20. BALL: Pain Score 1 to 2
None None

5.21. HEEL: Pain Score 1 to 2
None None

5.22. ARCH: Pain Score 1 to 2
None None

5.23. BALL: Pain Score 1 to 2
None None

5.24. HEEL: Pain Score 1 to 2
None None

5.25. ARCH: Pain Score 1 to 2
None None

5.26. BALL: Pain Score 1 to 2
None None

5.27. HEEL: Pain Score 1 to 2
None None

5.28. ARCH: Pain Score 1 to 2
None None

5.29. BALL: Pain Score 1 to 2
None None

5.30. HEEL: Pain Score 1 to 2
None None

5.31. ARCH: Pain Score 1 to 2
None None

5.32. BALL: Pain Score 1 to 2
None None

5.33. HEEL: Pain Score 1 to 2
None None

5.34. ARCH: Pain Score 1 to 2
None None

5.35. BALL: Pain Score 1 to 2
None None

5.36. HEEL: Pain Score 1 to 2
None None

5.37. ARCH: Pain Score 1 to 2
None None

5.38. BALL: Pain Score 1 to 2
None None

5.39. HEEL: Pain Score 1 to 2
None None

5.40. ARCH: Pain Score 1 to 2
None None

5.41. BALL: Pain Score 1 to 2
None None

5.42. HEEL: Pain Score 1 to 2
None None

5.43. ARCH: Pain Score 1 to 2
None None

5.44. BALL: Pain Score 1 to 2
None None

5.45. HEEL: Pain Score 1 to 2
None None

5.46. ARCH: Pain Score 1 to 2
None None

5.47. BALL: Pain Score 1 to 2
None None

5.48. HEEL: Pain Score 1 to 2
None None

5.49. ARCH: Pain Score 1 to 2
None None

5.50. BALL: Pain Score 1 to 2
None None

5.51. HEEL: Pain Score 1 to 2
None None

5.52. ARCH: Pain Score 1 to 2
None None

5.53. BALL: Pain Score 1 to 2
None None

5.54. HEEL:

* SECTIONS 1 AND 2 ARE TO BE COMPLETED *									
SECTION 1 – ACADEMY & PLAYER INFORMATION									
CLUB No.	34		1.1 MEASURER REGISTRATION NO.						
1.2 DATE OF BIRTH:	01 Nov 1992								
1.3 ETHNIC ORIGIN	White	X Chinese	Black African	Black Caribbean	Black Other	Pakistani			
1.4 DOMINANT SIDE	Upper Limb	Left X Right Biateral	Lower Limb	Left X Right Biateral					
SECTION 2 – ANTHROPOMETRIC EVALUATION INSTRUMENT									
2.1 DATE OF EVALUATION	23 Feb 04								
2.2 HEIGHT (cm): STANDING HEIGHT SITTING HEIGHT BODYWEIGHT (kg):	158.2 83.3		47.0						
2.3 SKIN FOLD (mm): TRICEPS BICIPES SUBSCAPULAR SUPRILAPEL	9.5 3.5		16.0 4.0						
2.4 APPARENT LEG LENGTH (cm): TRUE LEG LENGTH (cm): TIBIAL LENGTH (cm): FOOT LENGTH (cm): HUMERAL EPICONDYLAR WIDTH (cm) Forearm Reach: FEMORAL EPICONDYLAR WIDTH (cm) High Sitting: LIMB GIRTH - UPPER ARM (cm) Best Torsoed Standing: LIMB GIRTH - LOWER LIMB Body Position STANDING MID THIGH (cm): LOWER THIGH (cm): calf Maximal Circumferential Measure (cm): calf Specific Site Measure (cm):	Left 89.6 83.6 36.0 23.9 6.8 9.7 23.4		Right 89.7 82.8 35.9 24.0 6.7 9.7 24.8						
SECTION 3 – JOINT MOTION/MUSCLE MEASUREMENTS									
3.1 SPINE Motion					Body Position				
3.1.1 Flexion (cm):					Bending				
3.1.2 Extension (cm):					Standing				
3.1.3 Lateral Flexion (cm):					(standing feet together)				
3.2 HIP JOINT									
3.2.1 Femoral Anteversion (°)									
3.2.2 Internal Rotation (°)					Prime Long - Knee Flexed 90°				
3.2.3 External Rotation (°)					Prime Long - Knee Flexed 90°				
3.2.4 Medial Rotation (°)					High Sitting				
3.2.5 External Rotation (°)					High Sitting				
3.3 KNEE JOINT									
3.3.1 "Q" Angle (°)					Standing				
3.4 MUSCLE EXTENSIBILITY – Lower Limb									
3.4.1 Iliosacra (")									
3.4.2 Rectus Femoris (") Resting									
Rectus Femoris (") Passive									
3.4.3 Long Hip Adductors (")									
3.4.4 Short Hip Adductors (")									
3.4.5 Hamstrings (") @ Straight Leg Raise									
Hamstrings (") @ Skin Test									
3.4.6 Gastrocnemius (")									
Comments									

[Signature]

More simple screening

Date	1 st November 2011			
Weight				
Height				
Waist				
Neck				
Foot Size				
Climbing shoe size				

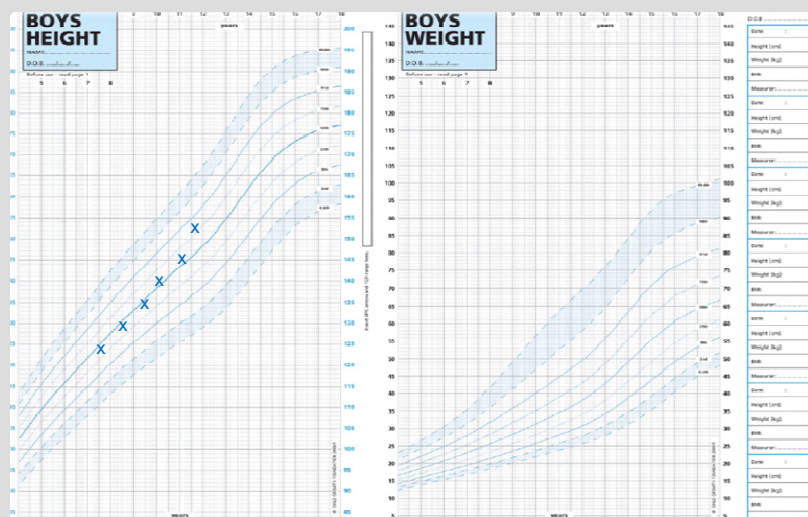
Notes – only significant factors to be noted.

Right hand dominant, slight dropped arches, feet in line with centre

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Centile Growth Chart



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Evidence Based Practice

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Journal Articles

1. Physiological responses to rock climbing in young climbers.
2. Review of the physiological responses to rock climbing in young climbers.
3. The effect of climbing wall use on the grip strength of fourth-grade students.
4. Anthropometry of young competitive sport rock climbers.
5. Correlations between high level sport-climbing and the development of adolescents.

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Other Journals

- Clinical Journal of Sport Medicine
- British Journal of Sports Medicine
- Physiotherapy Research International
 - Changes in upper body strength and body composition after 8 weeks indoor climbing in youth (Balás J)
- Physiotherapy (UK) *All journals since 1988*
- Australian Journal of Physiotherapy
 - Epiphyseal Fractures of the Finger Middle Joints in Young Sport Climbers (Schoffl)
- Medicine and Science in Sports and Exercise
 - A comparison of male and female teenage sport rock climbers from a high school (Moss)

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- *Maximal resultant four fingertip force and fatigue of the extrinsic muscles of the hand in different sport climbing finger grips.*

- *Quaine F, Vigouroux L*

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The paediatric hand



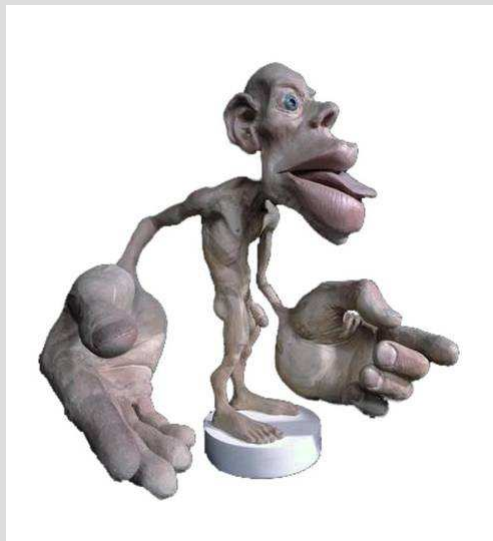
Hand Facts

- The average number of hands per person in the world is less than 2.
- 1/4 of sport injuries are to the hand/wrist
- There are 27 bones of the hand.
- There are 17 muscles in your hand
- 40% of your brain's motor cortex is dedicated to eliciting responses from the hands

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Motor Humunculous



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Interesting stuff about hands

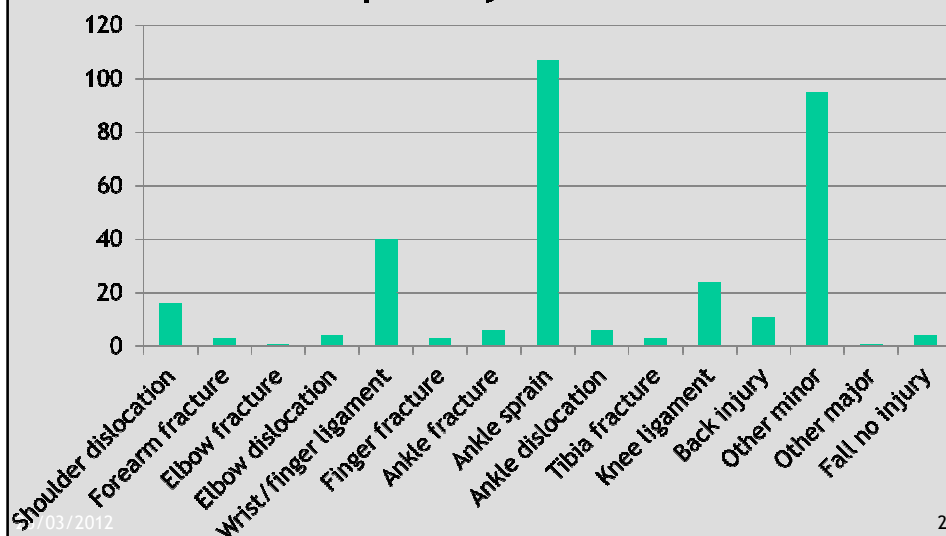
- The fingers are the only joints where there is a connection directly from the tendons that flex the joint to the tendons that extend the joint.
- The skin on the palm wrinkles when wet due to a nerve response - damage the nerves and the hand will not wrinkle (the exact mechanism is not known).

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BMC Climbing Wall Accident Reporting Database

Number of reported injuries from 2004-2007



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Carol Hayes' findings

Team number = 27

Injuries presenting = 26

- 55% of the girls presented with injuries
- 33% of the boys

Average age of injury:

- Female = 15 years
- Male = 17.1 years

Injury regions:

- Hand = 19%
- Shoulder = 15%
- Foot, thigh (hamstring), Forearm all = 7%
- Elbow, lumbar spine, thoracic spine, all = 4%
-

Injury cause:

- Leading = 23%
- Overuse = 15.4%
- Bouldering = 11.5%
- Campus board = 7.7%
- Other (? Need to look into that!) = 11.5%

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Acknowledgments

- Audrey Seguy, Castle Climbing Centre
- Tony Denton, Sheffield United Football Academy
- Jason Rohun, Sheffield Hallam University
- Dan Bradley, Nottingham Climbing Centre (now PyB)
- John Ostrovskis, The Clinic, Sheffield
- Rick Webber, The Clinic, Sheffield
- Steve McClure, Climber
- Karl Bacon & Karen Mullen, The Foundry
- Becki Hall (and Steve) Sheffield climber
- Nina Leonfellner, Bristol
- Wikipedia
- All the kids out there climbing and all their parents supporting them