



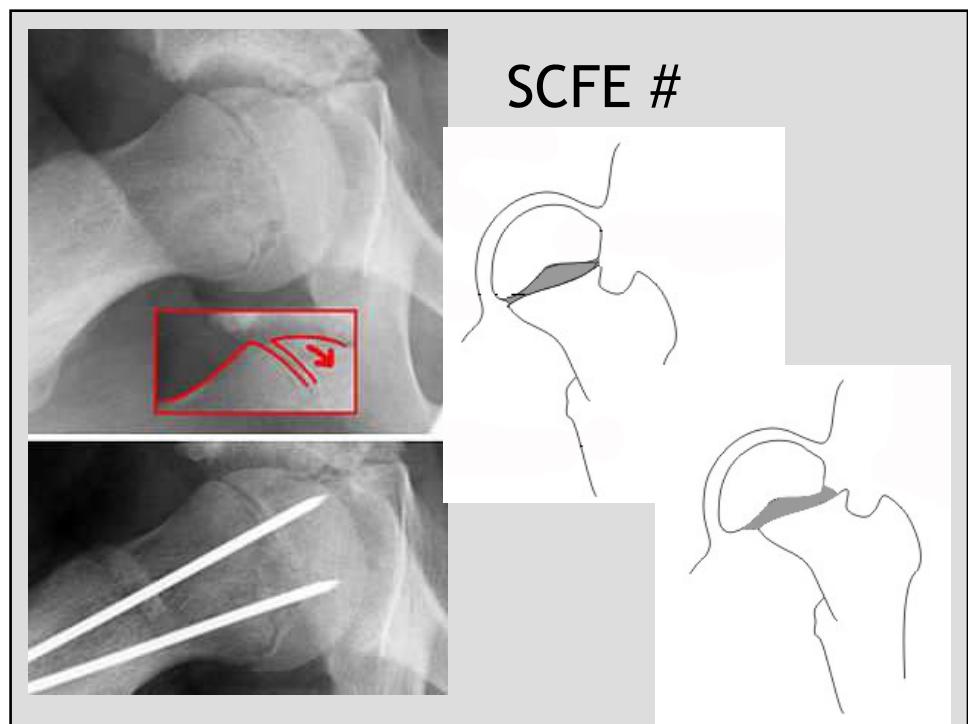
# Managing Injury in Performance Clubs

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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

# Screening - Football Association

FOOTBALL ACADEMIES ORTHOPAEDIC MUSCULO-SKELETAL EVALUATION FORM

### MEASUREMENTS / NORM SETTING / INDICATORS

# FOOTBALL ACADEMIES ORTHOPAEDIC MUSCULO-SKELETAL EVALUATION FORM

Measurements/Norm Setting/Indicators

## \* SECTIONS 1 AND 2 ARE TO BE COMPLETED \*

### SECTION 1 – ACADEMY & PLAYER INFORMATION

CLUB NO.	34	1.1.1 PLAYER REGISTRATION NO.	899
1.2. DATE OF BIRTH	01/01/1992		
1.3. ETHNIC ORIGIN	<input checked="" type="checkbox"/> Chinese <input type="checkbox"/> Black African <input type="checkbox"/> Black Caribbean <input type="checkbox"/> Black Other <input type="checkbox"/> Indian <input type="checkbox"/> Other		
1.4. DOMINANT SIDE	Upper Limb	Left	Right
	Limbs	Bilateral	
		Lower Limb	Left
			Right
			Bilateral

### SECTION 2 – ANTHROPOMETRIC EVALUATION INFORMATION

2.1. DATE OF EVALUATION	27.11.04							
2.2. HEIGHT (cm):	158	STANDING HEIGHT	158	SITTING HEIGHT	83.3	BODYWEIGHT (kg):	47.0	
2.3. SKIN FOLD (mm):	TRICEPS	9.5	BICEPS	13.5	SUBSCAPULAR	16.0	SUPRAILLIAC	14.0
2.4. APPARENT LEG LENGTH (cm):			Left	89.6	Right	89.7		
2.5. TRUE LEG LENGTH (cm):			Left	83.6	Right	82.8		
2.6. TIBIAL LENGTH (cm):			Left	36.0	Right	36.5		
2.7. FOOT LENGTH (cm):			Left	23.7	Right	24.0		
2.8. HUMERAL EPICONDYLAR WIDTH (cm):			Body Position	6.8				
2.9. FEMORAL EPICONDYLAR WIDTH (cm):			Body Position	9.7				
2.10. LIMB GIRTH – UPPER ARM (cm):			Body Position	23.4				
2.11. LIMB GIRTH – LOWER LIMB			Body Position	45.6				
2.11.1. MID THIGH (cm):			Standing	41.2				
2.11.2. LOWER THIGH (cm):			Standing	31.9				
2.11.3. Calf – Maximal Circumferential Measure (cm):			Standing	31.5				
2.11.4. Calf – Specific Site Measure (cm):			Standing	32.8				

## \* SECTION 3 – OPTIONAL MEASUREMENTS \*

### SECTION 3 – JOINT MOTION/MUSCLE MEASUREMENTS

3.1. SPINE	Motion	Body Position	
3.1.1. Flexion (cm):	Standing		
3.1.2. Extension (cm):	Standing		
3.1.3. Lateral Flexion (cm):	Standing (knee together)		
3.2. HIP JOINT			
3.2.1. Femoral Anteversion (°)	Prone Lying – Kneecap to Ear		
3.2.2. Internal Rotation (°)	Prone Lying – Knee to Ear		
3.2.3. External Rotation (°)	Prone Lying – Knee Fixed 90°		
3.2.4. Internal 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. Iliopsoas (°)	R Resting		
3.4.2. Rectus Femoris (°)	R Resting		
3.4.3. Long Hip Adductors (°)	R Passive		
3.4.4. Short Hip Adductors (°)	R Passive		
3.4.5. Hamstrings (°)	R Straight Leg Raise		
3.4.6. Gastrocnemius (°)	R Seated Test		

Comments

*[Handwritten signature]*

## More simple screening

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

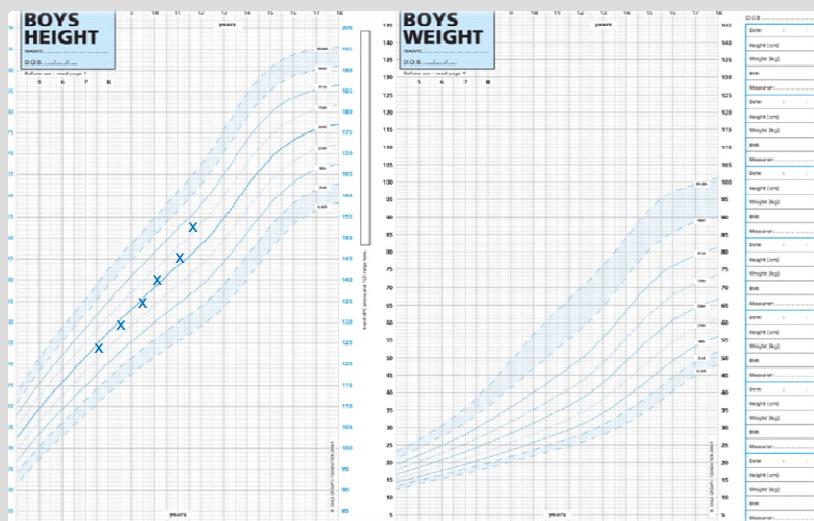
Notes – only significant factors to be noted.

**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



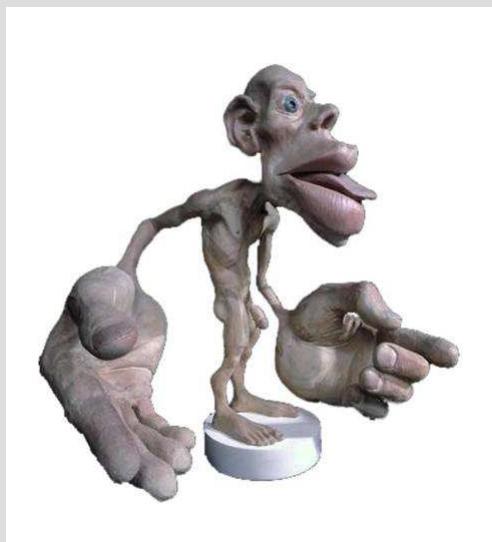
## Hand Facts

- 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 Humunculus



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## Interesting stuff about hands

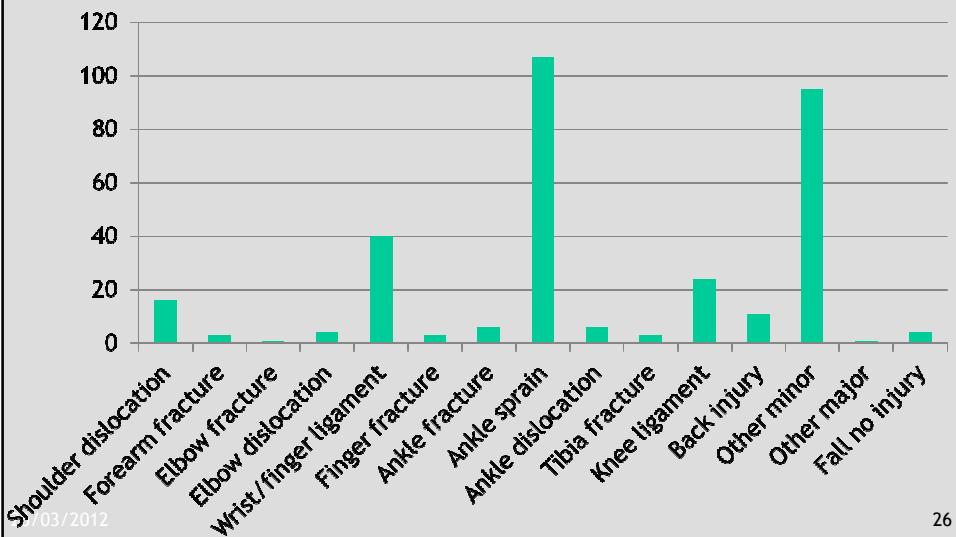
- The fingers are the only joints where there is a connection directly from the tendons that flex the joint to the tendons that extend the joint.
- The skin on the palm wrinkles when wet due to a nerve response - damage the nerves and the hand will not wrinkle (the exact mechanism is not known).

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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

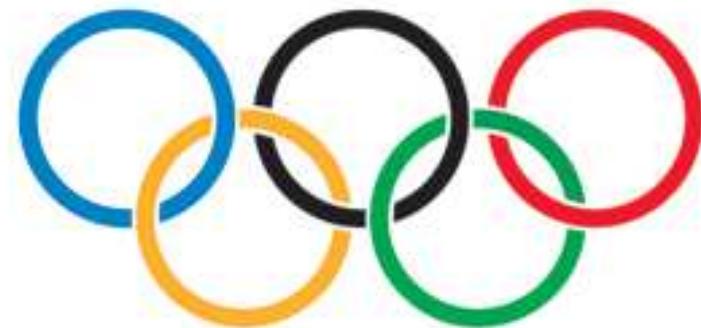
**Average age of injury:**

- 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)
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- 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