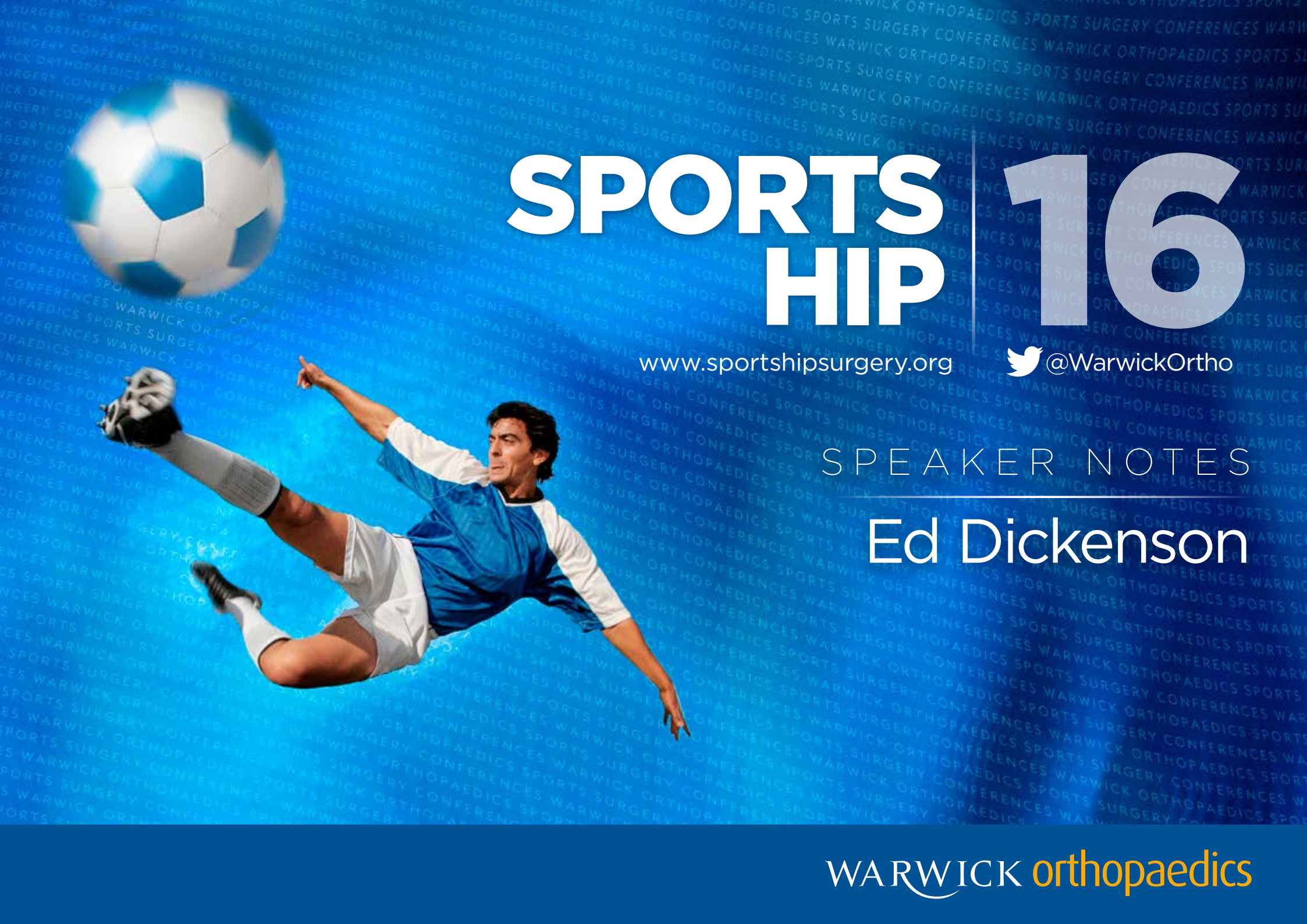

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SPEAKER NOTES
Ed Dickenson
WARWICK orthopaedics

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PROFESSOR OF TRAUMA & ORTHOPAEDIC SURGERY

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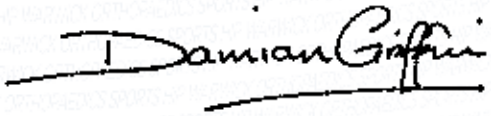
Dear Colleague,

The Sports Hip Conference will run again in 2018 as part of our portfolio of Sports Injury conferences. Some of you may have already attended the Sports Foot & Ankle, Sports Shoulder and and Sports Knee conferences. The dates for the next events will shortly be published on our website
www.sports-surgery.org

The key feature of these Sports Injury conferences is that we explore the latest ideas and most difficult problems in a relatively small group, guided by an expert international faculty.

Please do let us know if you have any thoughts about the meeting or any suggestions as to how we might develop it in the future.

With very best wishes.



PROFESSOR DAMIAN GRIFFIN
PROFESSOR OF TRAUMA & ORTHOPAEDIC SURGERY
UNIVERSITY OF WARWICK

WARWICK orthopaedics
SPORTS INJURY CONFERENCES
SPORTS HIP 16

Ed Dickenson



Ed Dickenson is an Orthopaedic Registrar on the Warwickshire training programme. He is currently a PhD student at the University of Warwick supervised by Professor Damian Griffin. Ed's research interests and PhD focus on the epidemiology of FAI and clinical effectiveness of treatments for FAI. Ed works as the research fellow on the FASHIoN study; an international multicentre randomised controlled trial assessing hip arthroscopy versus best conservative care.

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Session 5

FEMOROACETABULAR IMPINGEMENT 1: DIAGNOSIS

Definition and epidemiology of FAI morphology?

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CONTACT THE AUTHOR

Definition and epidemiology of cam and pincer morphology?

Edward Dickenson
PhD Student
Warwick Orthopaedics



e.j.l.dickenson@warwick.ac.uk WARWICK orthopaedics

Cam

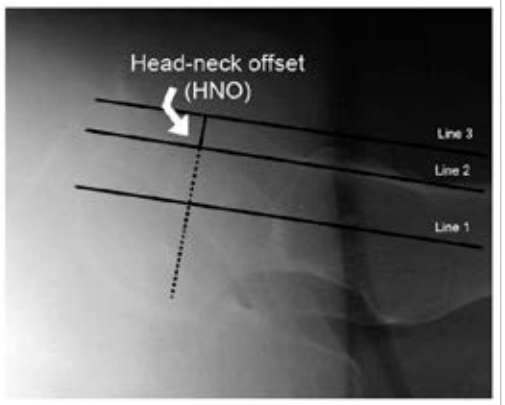
- **Pistol grip deformity**



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Cam

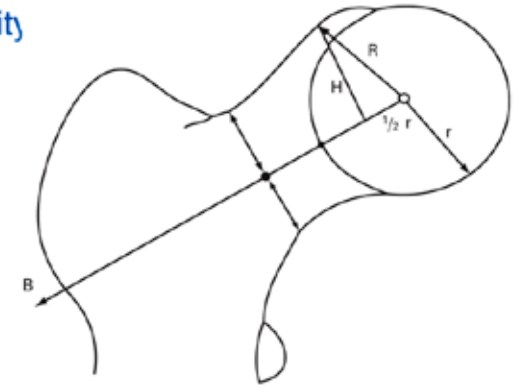
- Pistol grip deformity
- **Head neck offset**



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Cam

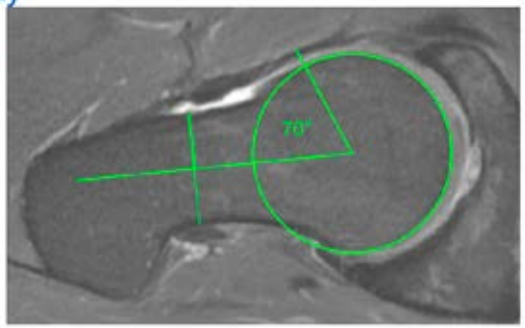
- Pistol grip deformity
- Head neck offset
- **Triangular index**



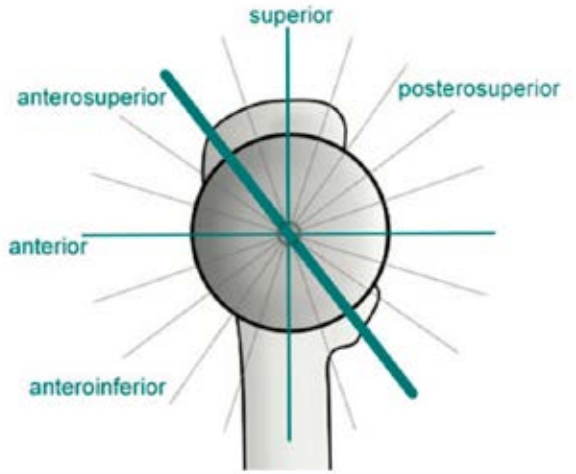
WARWICK orthopaedics

Cam

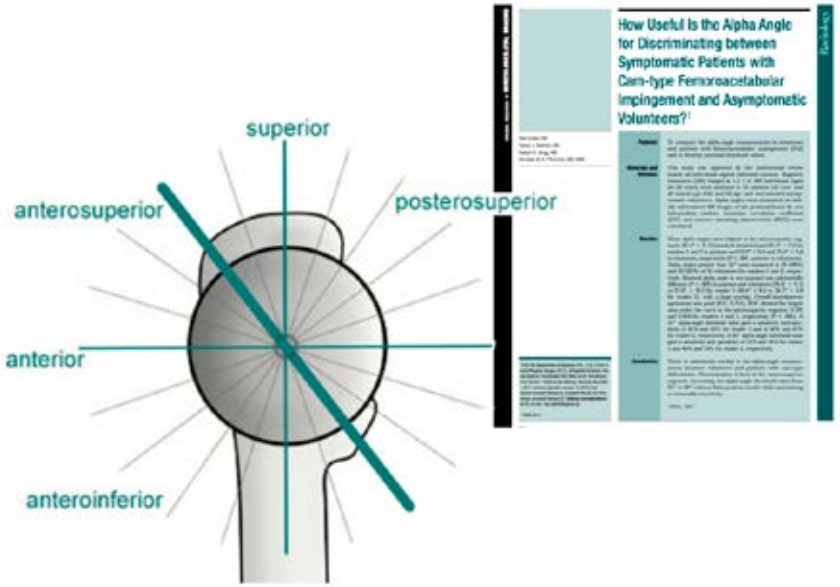
- Pistol grip deformity
- Head neck offset
- Triangular index
- **Alpha angles**



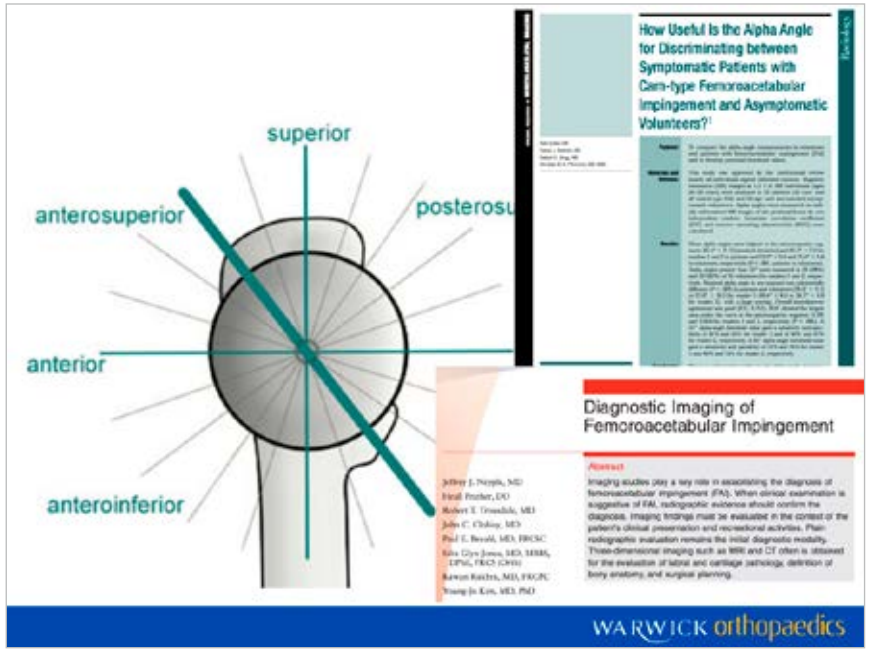
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WARWICK orthopaedics



WARWICK orthopaedics



Pincer

WARWICK orthopaedics

Pincer

- Cross over sign



WARWICK orthopaedics

Pincer

- Cross over sign
- Ischial spine sign



WARWICK orthopaedics

Pincer

- Cross over sign
- Ischial spine sign
- **Centre edge angle**



WARWICK orthopaedics

Pincer

- Cross over sign
- Ischial spine sign
- Centre edge angle
- **Posterior wall sign**



WARWICK orthopaedics

Pincer

- Cross over sign
- Ischial spine sign
- Centre edge angle
- Posterior wall sign
- **Tonnis angle**



WARWICK orthopaedics

Pincer

- Cross over sign
- Ischial spine sign
- Centre edge angle
- Posterior wall sign
- Tonnis angle
- **Coxa profunda**



WARWICK orthopaedics

Pincer

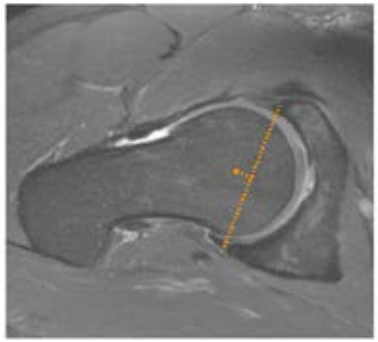
- Cross over sign
- Ischial spine sign
- Centre edge angle
- Posterior wall sign
- Tonnis angle
- Profunda femora
- **Acetabular protrusio**



WARWICK orthopaedics

Pincer

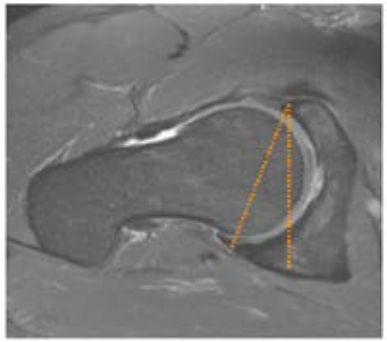
- **Acetabular depth**



WARWICK orthopaedics

Pincer

- Acetabular depth
- **Acetabular anteversion**



WARWICK orthopaedics

Osteoarthritis and Cartilage

OARSI OSTEOARTHRITIS RESEARCH SOCIETY INTERNATIONAL

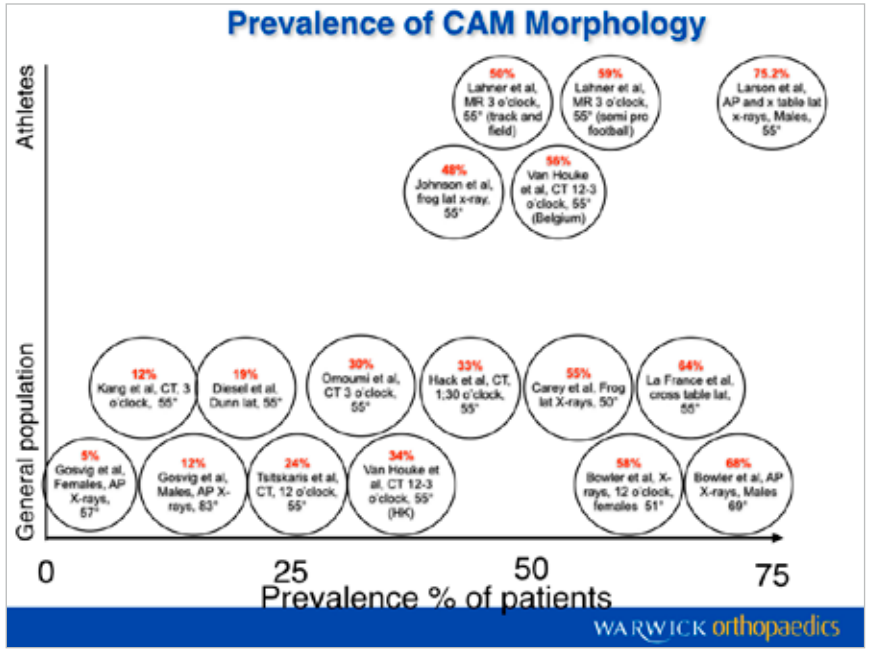
Review

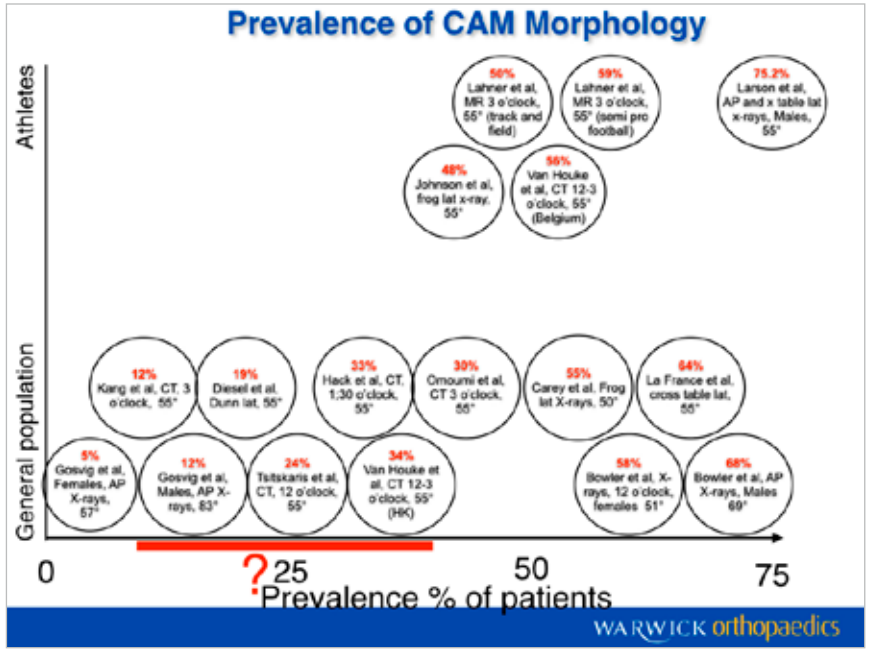
Prevalence of cam hip shape morphology: a systematic review

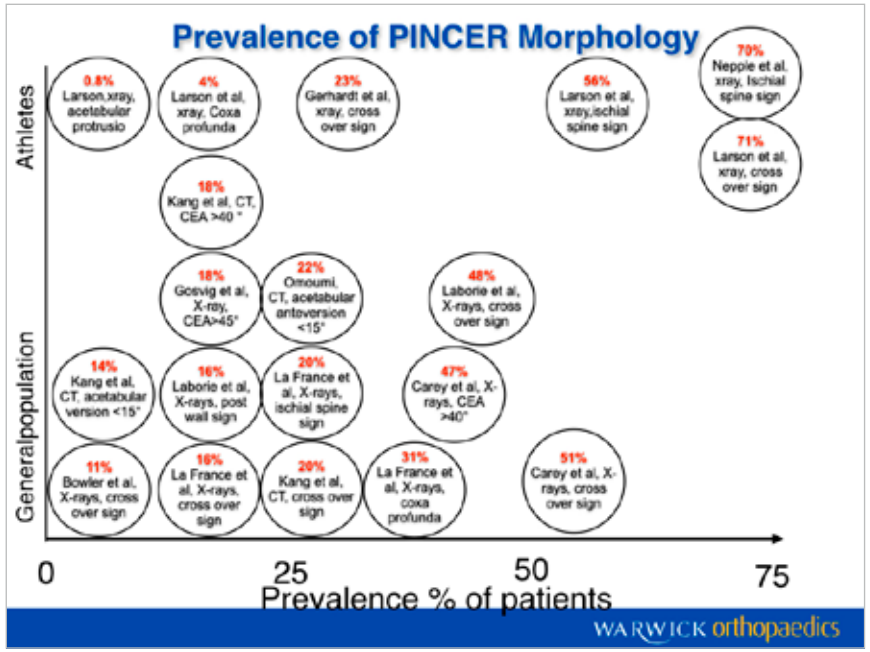
E. Dickenson ‡, P.D.H. Wall †, B. Robinson †, M. Fernandez †, H. Parsons †, R. Buchbinder §, D.R. Griffin ‡ *

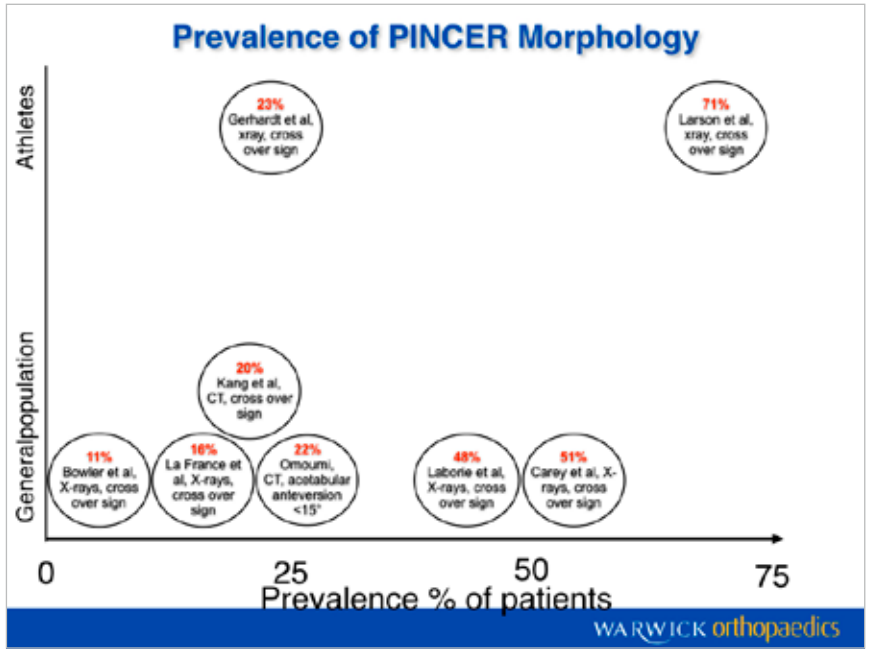
‡ Warwick Medical School, United Kingdom
† University Hospitals Coventry and Warwickshire, United Kingdom
§ Monash University Department of Clinical Epidemiology, Australia

WARWICK orthopaedics


Prevalence of CAM Morphology
Athletes
General population
50% Lahner et al, MR 3 o'clock, 55° (track and field)
59% Lahner et al, MR 3 o'clock, 55° (semi pro football)
75.2% Larson et al, AP and x table lat x-rays, Males, 55°
48% Johnson et al, frog lat x-ray. 55°
56% Van Houke et al, CT 12-3 o'clock, 55° (Belgium)
12% Kang et al, CT, 3 o'clock, 55°
19% Diesel et al, Dunn lat, 55°
30% Omoumi et al, CT 3 o'clock, 55°
33% Hack et al, CT, 1;30 o'clock, 55°
55% Carey et al. Frog lat X-rays. 50°
64% La France et al, cross table lat, 55°
5% Gosvig et al, Females, AP X-rays, 57°
12% Gosvig et al, Males, AP X-rays, 83°
24% Tsitskaris et al, CT, 12 o'clock, 55°
34% Van Houke et al, CT 12-3 o'clock, 55° (HK)
58% Bowler et al, X-rays, 12 o'clock, females 51°
68% Bowler et al, AP X-rays, Males 69°
0
25
50
75
Prevalence % of patients
WARWICK orthopaedics


Prevalence of CAM Morphology
Athletes
General population
50% Lahner et al, MR 3 o'clock, 55° (track and field)
59% Lahner et al, MR 3 o'clock, 55° (semi pro football)
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68% Bowler et al, AP X-rays, Males 69°
?
0
25
50
75
Prevalence % of patients
WARWICK orthopaedics


Prevalence of PINCER Morphology
Athletes
Generalpopulation
0.8% Larson,xray, acetabular protrusio
4% Larson et al, xray, Coxa profunda
23% Gerhardt et al, xray, cross over sign
56% Larson et al, xrey,ischial spine sign
70% Neppie et al, xray, Ischial spine sign
71% Larson et al, xray, cross over sign
18% Kang et al, CT, CEA >40 °
18% Gosvig et al, X-rey, CEA>45°
22% Omoumi, CT, acetabular anteversion <15°
48% Laborie et al, X-rays, cross over sign
14% Kang et al, CT, acetabular version <15°
16% Laborie et al, X-rays, post wall sign
20% La France et al, X-rays, ischial spine sign
47% Carey et al, X-rays, CEA >40°
11% Bowler et al, X-rays, cross over sign
16% La France et al, X-rays, cross over sign
20% Kang et al, CT, cross over sign
31% La France et al, X-rays, coxa profunda
51% Carey et al, X-rays, cross over sign
0
25
50
75
Prevalence % of patients
WARWICK orthopaedics


Prevalence of PINCER Morphology
Athletes
Generalpopulation
23% Gerhardt et al, xray, cross over sign
71% Larson et al, xray, cross over sign
20% Kang et al, CT, cross over sign
11% Bowler et al, X-rays, cross over sign
16% La France et al, X-rays, cross over sign
22% Omoumi, CT, acetabular anteversion <15°
48% Laborie et al, X-rays, cross over sign
51% Carey et al, X-rays, cross over sign
0
25
50
75
Prevalence % of patients
WARWICK orthopaedics

Osteoarthritis and Cartilage

OARSI OSTEOARTHRITIS RESEARCH SOCIETY INTERNATIONAL

Review

Prevalence of cam hip shape morphology: a systematic review

E. Dickenson †, P.D.H. Wall ‡, B. Robinson ‡, M. Fernandez ‡, H. Parsons †, R. Buchbinder §, D.R. Griffin † *

† Warwick Medical School, United Kingdom
‡ University Hospitals Coventry and Warwickshire, United Kingdom
§ Monash University Department of Clinical Epidemiology, Australia

- Heterogenous studies
- High risk of bias
- Wide range of case definitions used
- True prevalence unknown

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Osteoarthritis and Cartilage

OARSI OSTEOARTHRITIS RESEARCH SOCIETY INTERNATIONAL

Review

Prevalence of cam hip shape morphology: a systematic review

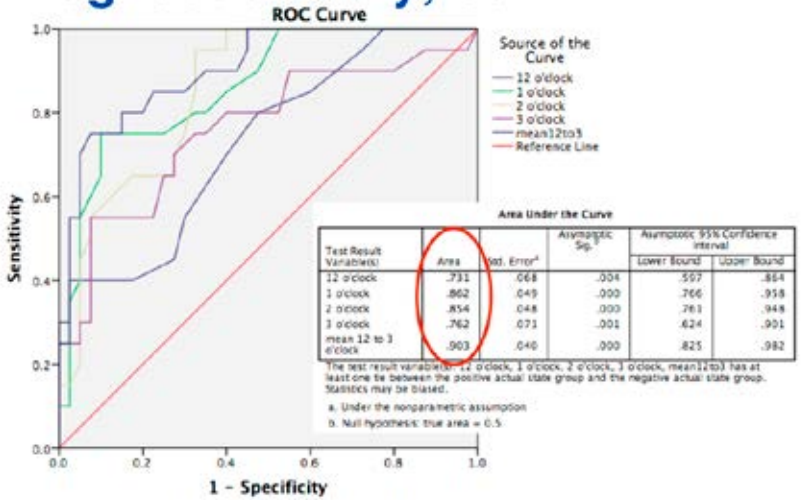
E. Dickenson †, P.D.H. Wall ‡, B. Robinson ‡, M. Fernandez ‡, H. Parsons †, R. Buchbinder §, D.R. Griffin † *

† Warwick Medical School, United Kingdom
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§ Monash University Department of Clinical Epidemiology, Australia

- Heterogenous studies
- High risk of bias
- **Wide range of case definitions used**
- True prevalence unknown

WARWICK orthopaedics

Diagnostic Utility; Cam



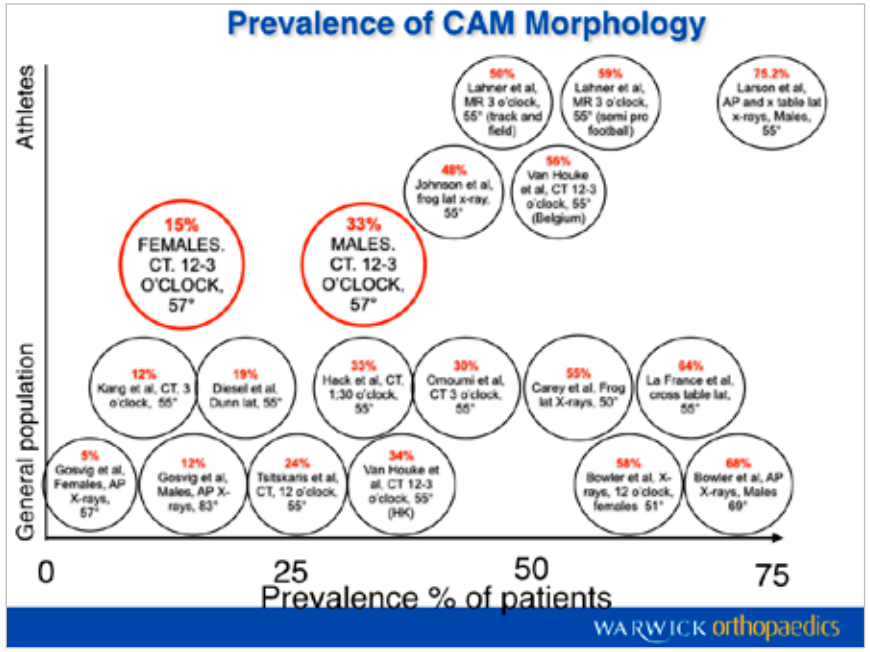
Diagonal segments are produced by ties.

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Alpha Angles Diagnostic Utility

Position	Cut off Value/ °	Sensitivity/ %	Specificity/ %
12 o'clock	45	55	70
1 o'clock	72	75	90
2 o'clock	63	75	70
3 o'clock	50.5	65	75
Mean alpha angles between 12-3 o'clock	57	80	85

WARWICK orthopaedics



Conclusions

- No clear single radiological criteria for pincer morphology
- Alpha angles used to assess cam
  - Most sensitive and specific diagnostic criteria: mean alpha angle between 12 and 3 o'clock using 57° cut off value
- Cam morphology present 15% females and 33% males
- Pincer present in 11 to 50%

e.j.l.dickenson@warwick.ac.uk
WARWICK orthopaedics

FASHION
STUDYING HIP IMPINGEMENT

RESULTS AUTUMN 2017

THE UNIVERSITY OF WARWICK
University of BRISTOL
NHS National Institute for Health Research
Keele University
University Hospitals Coventry and Warwickshire NHS

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