

University of Windsor

Scholarship at UWindsor

UWill Discover Conference

UWill Discover 2022

Quantifying the Effects of Various Football Shoulder Pads on Reach Distance and Player Perception of Comfort and Fit: A Proposal

Claudia M. Town

University of Windsor, town1@uwindsor.ca

David M. Andrews Dr.

University of Windsor, dandrews@uwindsor.ca

Ron Jadischke Dr.

Xenith, rjadischke@xenith.com

Follow this and additional works at: <https://scholar.uwindsor.ca/uwilldiscover>

Town, Claudia M.; Andrews, David M. Dr.; and Jadischke, Ron Dr., "Quantifying the Effects of Various Football Shoulder Pads on Reach Distance and Player Perception of Comfort and Fit: A Proposal" (2022). *UWill Discover Conference*. 17.

<https://scholar.uwindsor.ca/uwilldiscover/2022/2022Day2/17>

This Event is brought to you for free and open access by the Conferences and Conference Proceedings at Scholarship at UWindsor. It has been accepted for inclusion in UWill Discover Conference by an authorized administrator of Scholarship at UWindsor. For more information, please contact scholarship@uwindsor.ca.

Quantifying the Effects of Various Football Shoulder Pads on Reach Distance and Player Perception of Comfort and Fit: A Proposal

Claudia Town¹, Ron Jadischke²,
David Andrews¹



¹Department of Kinesiology, University of Windsor

²Xenith, Detroit, MI

SPORT EQUIPMENT RESEARCH



Comfort and Fit



Impact on Player Performance



Protective Capabilities

COMFORT AND FIT

Hockey Shoulder Pads

Virani et al 2016

□ 5-Point Likert Scale

- (1) extreme discomfort in the shoulder
- (5) extreme comfort in the shoulder

□ Completed after entire protocol

Additional
Padding



Pad A



Pad B

IMPACT ON PERFORMANCE

Hockey Goalie Shoulder Pads and ROM

Frayne et al 2019

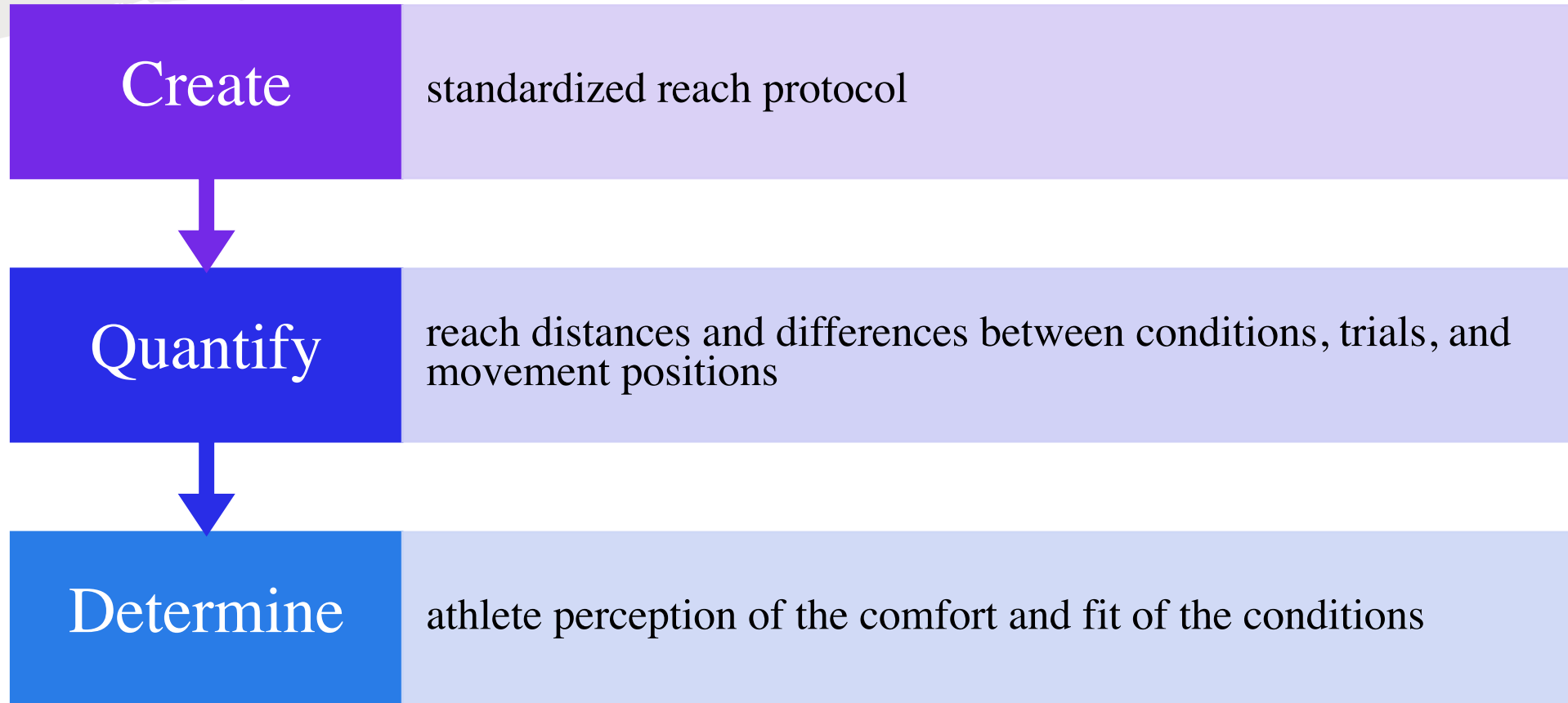


One group, four different conditions: control condition (no shoulder pads), three different designs of shoulder pads

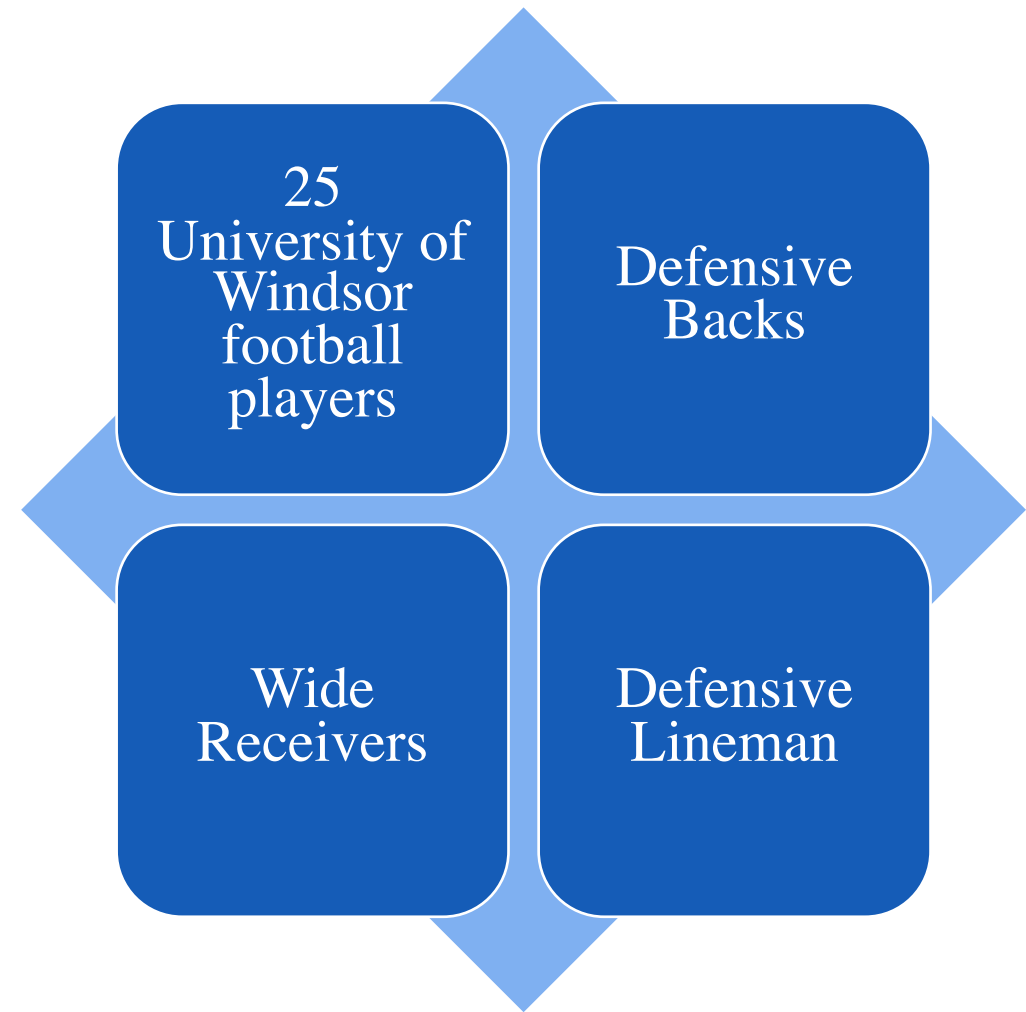


No standardized reach protocol to isolate the shoulder joint or control for other body movement.

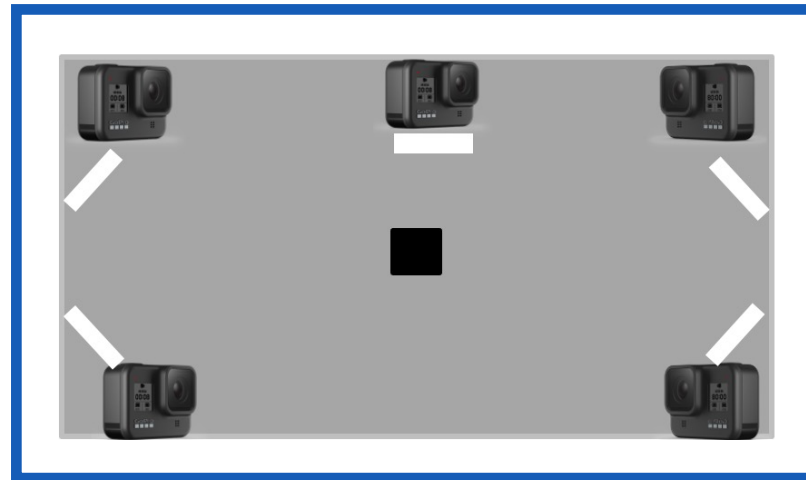
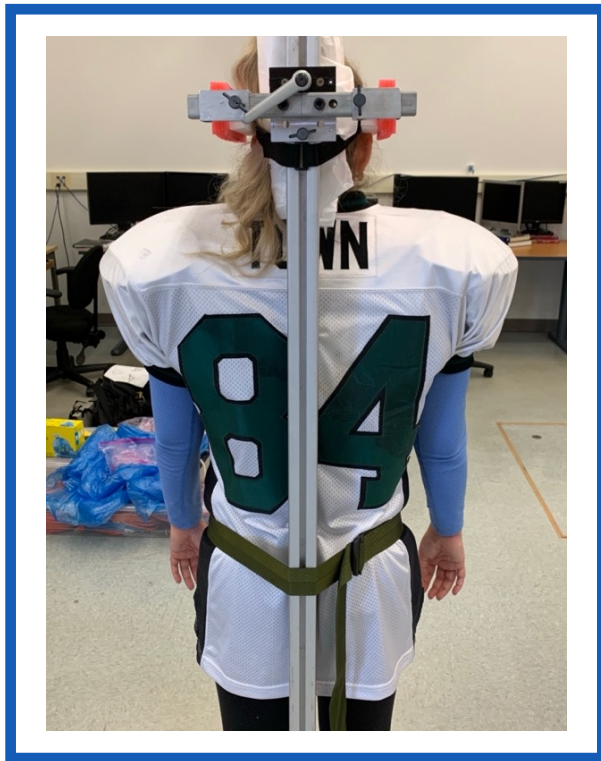
✕ PURPOSE ✕



PARTICIPANTS



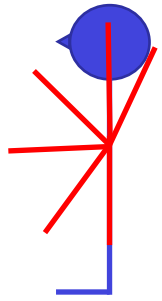
SET UP



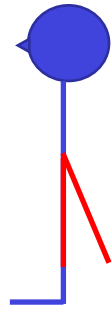
REACH DISTANCE PROTOCOL

M
O
V
E
M
E
N
T

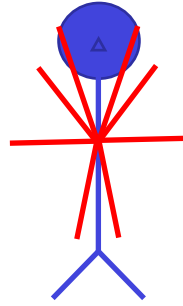
S
E
Q
U
E
N
C
E



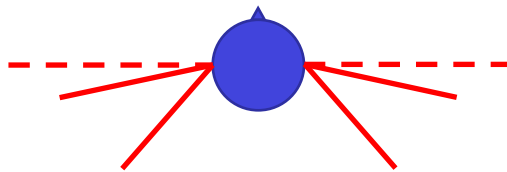
Flexion



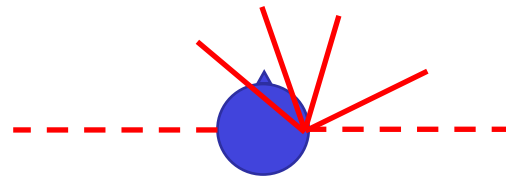
Extension



Abduction



Horizontal
Extension



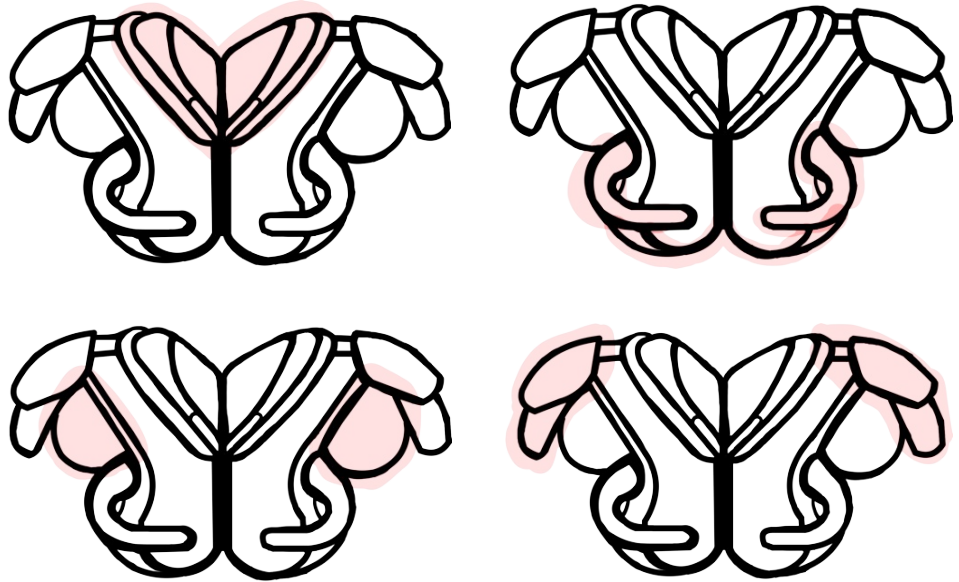
Horizontal
Flexion

C
O
N
D
I
T
I
O
N
S

- No shoulder pads
- Players current pads
- Xenith shoulder pads

□ Part 2 – After the entire reach distance protocol

- Open ended questions

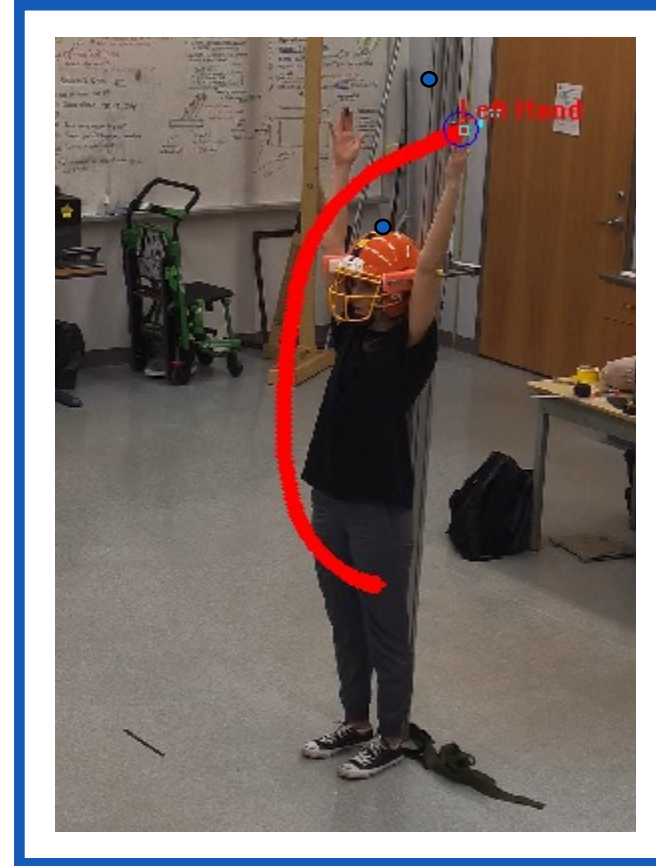
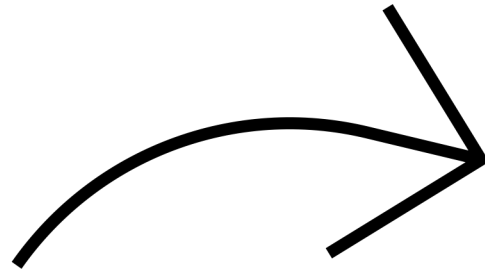
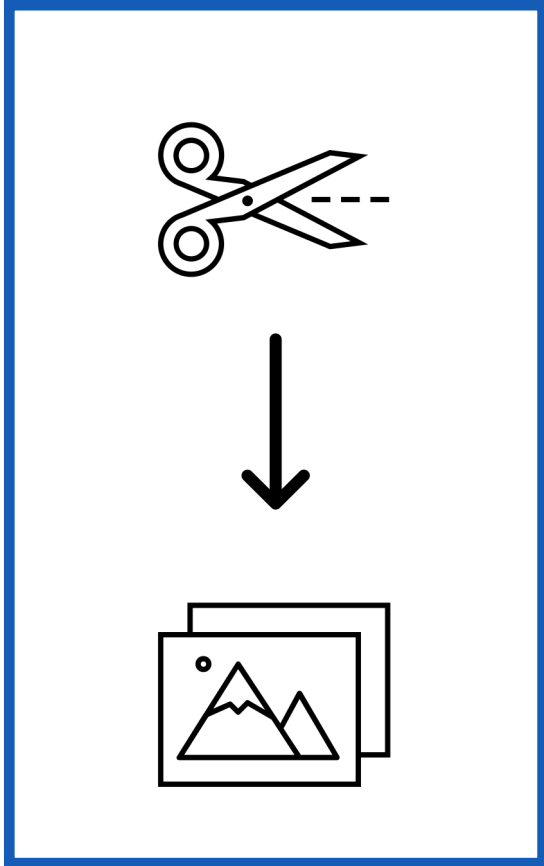


QUESTIONNAIRE

□ Part 1 - Following reach distance protocol for each shoulder pad condition

- 5-point Likert Scale – breathable, restrictive, heavy
- Yes/No question regarding discomfort in specified areas
- Sensory descriptors of discomfort

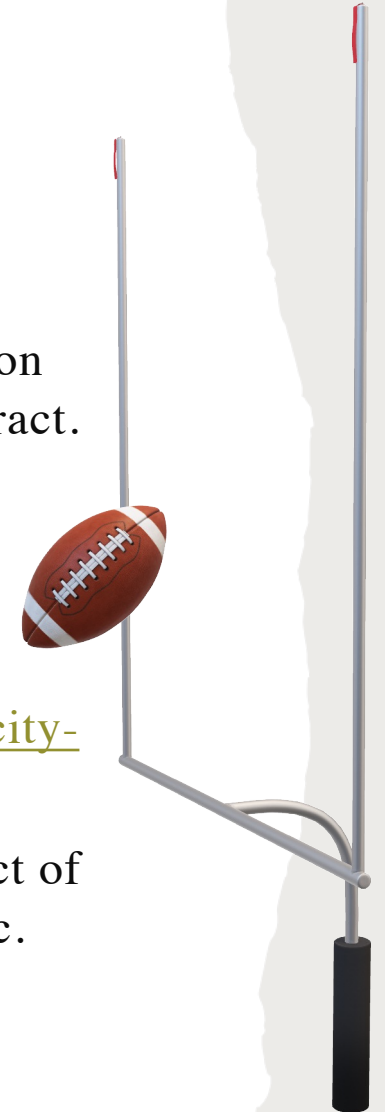
VIDEO ANALYSIS



- ΔX
- ΔY
- ΔZ

REFERENCES

- Faculty and staff discount to welcome fan families to football home opener. (2017). Retrieved from <http://www.uwindsor.ca/dailynews/2017-08-16/faculty-and-staff-discount-welcome-fan-families-football-home-opener>.
- Frayne R, MacLean K, Ladoucer M. National hockey league equipment regulation effects on goaltender reach envelope. International Society of Biomechanics Conference Abstract. 2019.
- <https://apastyle.apa.org/style-grammar-guidelines/research-publication>
- <https://depositphotos.com/stock-photos/financial-growth.html>
- <https://www.forelle.com/american-football/shoulder-pads/adult-shoulder-pads/xenith-velocity-2-skill-position/44642/>
- Virani S, Russel C, Bruschetta M, Ngoc Hua K, Potvin B, Cox D, Robinovitch S. The effect of shoulder pad design on head impact severity during checking. Med Sci Sports Exerc. 2016; 49: 573-80.





THANK YOU!

QUESTIONS?