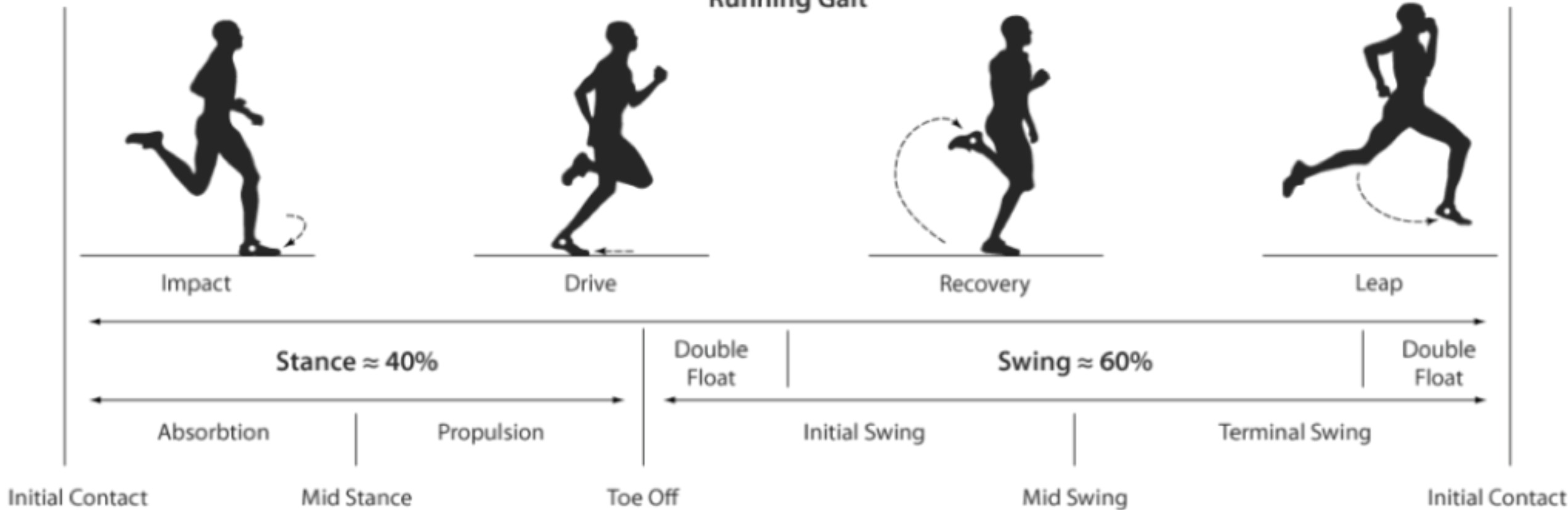


Gait analysis

Barefoot or shod running?

Running Gait



What is a running gait cycle?

- Period from initial contact of one foot to the next initial contact of the same foot.
- Three phases

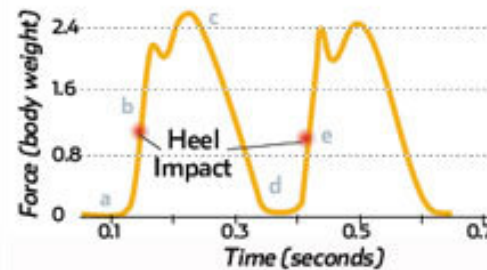
What is the difference?

- ❖ Changing in gate
- ❖ Shod runners exhibit a rearfoot strike pattern
- ❖ Barefoot runners exhibit midfoot or forefoot strike pattern
- ❖ Differences in contact and flight time and peak forces.

Running with sports shoes



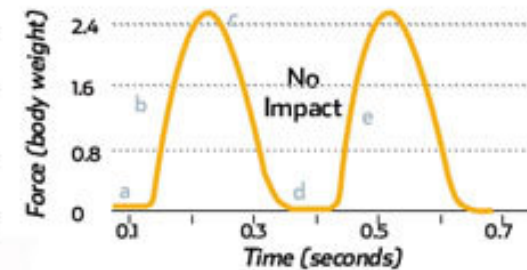
Most runners who wear shoes strike the ground with their heel, causing a high impact.

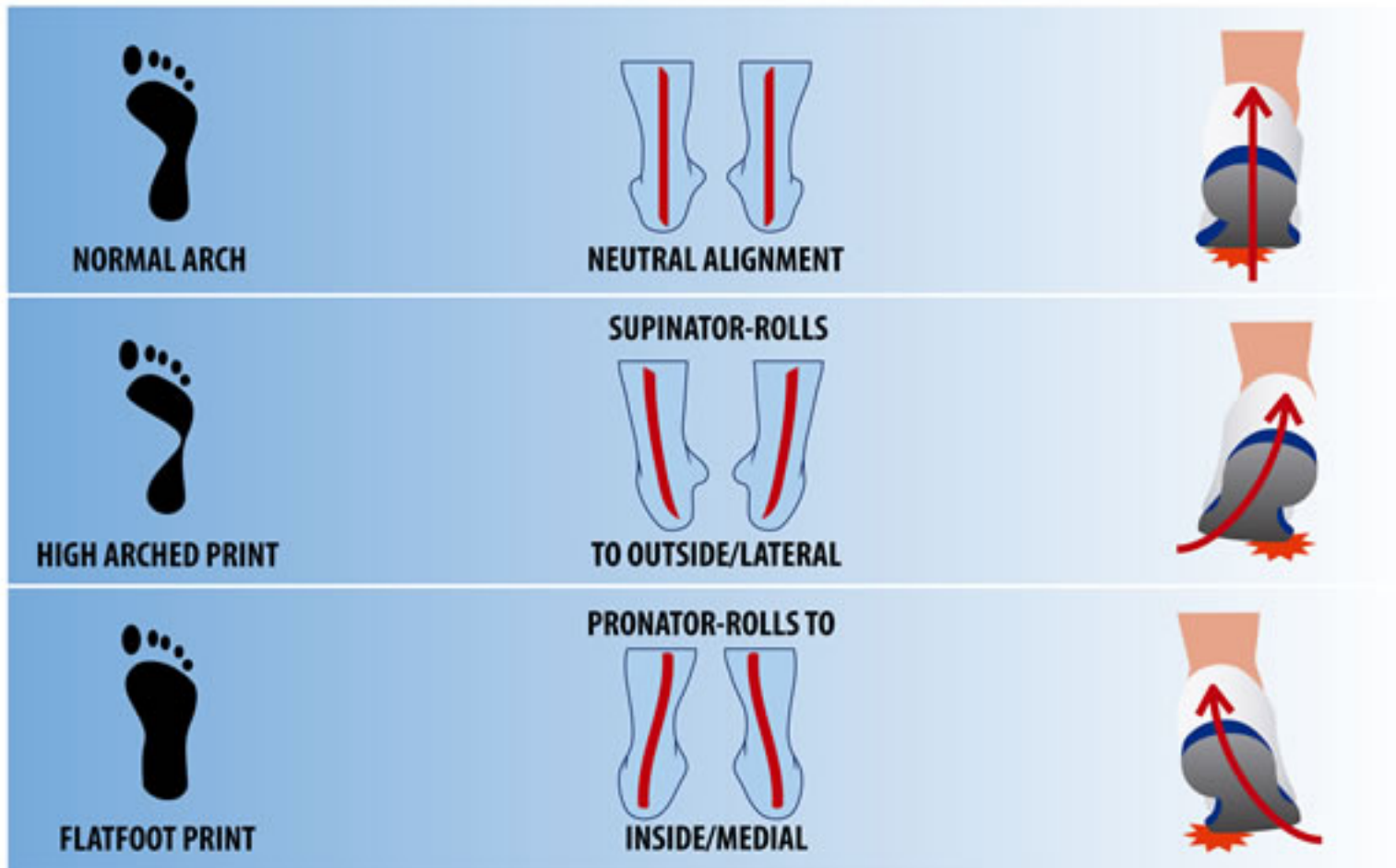


Running barefoot



Barefoot runners land on the ball or middle of the foot, naturally avoiding heavy stress on the heel.





Foot alignment



Rationale

- Beneficial for the player
- Optimisation of performance
- Injury prevention

Hypothesis



Null

Negative

There is not a correlation between barefoot and shod running.



Directive

Positive

There is a correlation between barefoot and shod running.

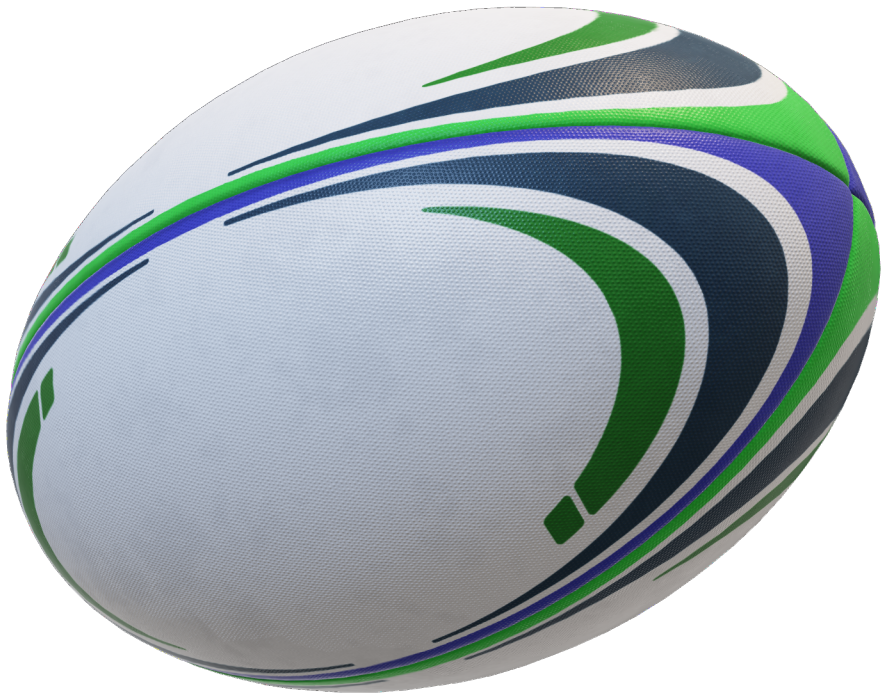
Participants

5-26 male participants

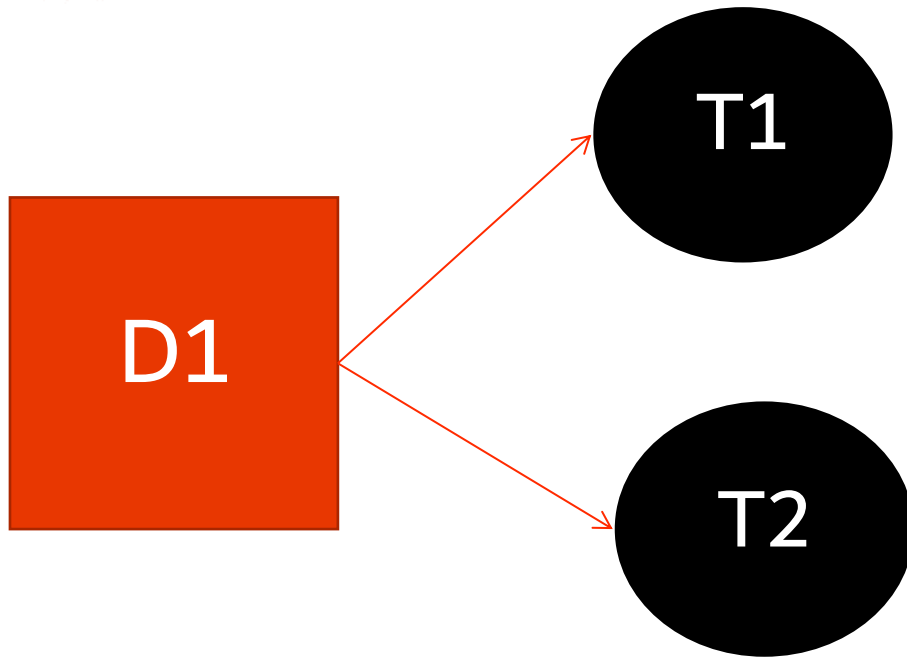
Aged over 18

Rugby players

Llangannech RFC



Research Design



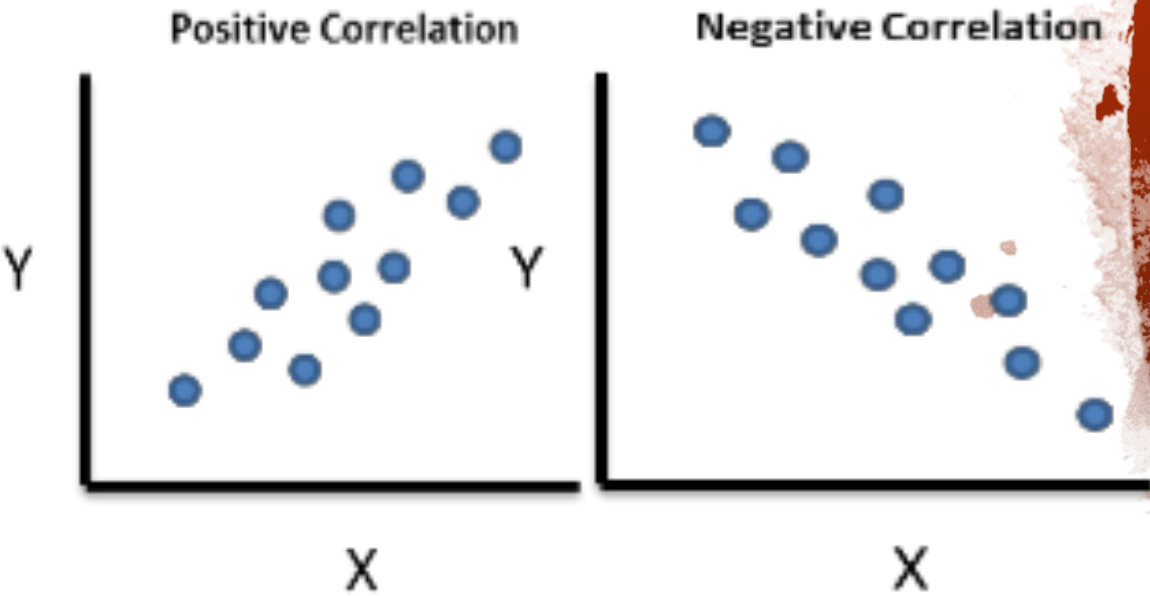
*Observational
cross sectional
research design*

Protocol

- Measurement of subject's height and leg length
- Treadmill
- 10 complete stride cycle
- 3 speeds: 1.5, 2.5, 3.5 m/s
- Stride rate
- Stride length
- Relative stride length with respect to height (RSL:H)
- Relative stride length with respect to leg length (RSL:L)



Data Analysis: Correlation



❖ Correlation analysis is used to describe researches that explores relationships between two variables

❖ Is there a correlation between X (walking) and Y (running)?



Ethical consideration

- Informed consent
- Confidentiality
- Withdraw any time
- Data security
- Risk assessment
- Plagiarism
- Convenience sampling
- Standardise the test protocol

Timeline

Task name	Sept	Oct	Nov	Dec	Jan	Feb	March	April
Research proposal								
Literature research								
Ethical approval								
Data gain								
Data Analysis								
Writing report								

Limitation



Human error



Accessibility



Participants



Closed range of
participants

References

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Paulson, S. and Braun, W. (2014). Mechanical and Physiological Examination of Barefoot and Shod Conditions in Female Runners. *International Journal of Sports Medicine*, 35(09), pp.789-793.

*Thank you for
your attention*



Any question?