ALZAHRA SCIENCE CONFERENCE 2026

IS THERE A LINK BETWEEN HANDEDNESS & ACCURACY?

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Contents

Research

- Approx. 10% of the population are left-handed

- Left-handers are more common in competitive sports
- This suggests a possible performance advantage
- This may be due to unfamiliarity (opponents face them less often)
- This can make actions harder to predict
- Performance is also affected by skill, coordination, and practice
- Therefore, handedness alone may not determine performance
- Strongest advantage seen in interactive / contact sports
- Handedness is linked to brain lateralisation
- Different sides of the brain control different hands
- → Unclear if handedness affects basketball shooting accuracy

- References:
- (Simon, Loffing & Frasnelli, 2025)
- (Mahajan & Kishore, 2020)

HYPOTHESIS:

LEFT-HANDED PLAYERS WILL MAKE MORE SUCCESSFUL BASKETS IN A MINUTE COMPARED TO RIGHT-HANDED PLAYERS

Variables

Dependent

Number of baskets made in one minute

Independent

Handedness; Left or right

Control:

Time the players have to make the baskets
Time of play
Type of basketball
Environment
Food consumed
Age
Skill level
Height
Number of individuals in each independent group


HOOP
COURT


HOOP
COURT


HOOP
COURT

Methodology

01 Two groups of students were selected: same age, height. One group left-handed and one group right-handed

02 Each participant stood at the same distance from the basketball hoop

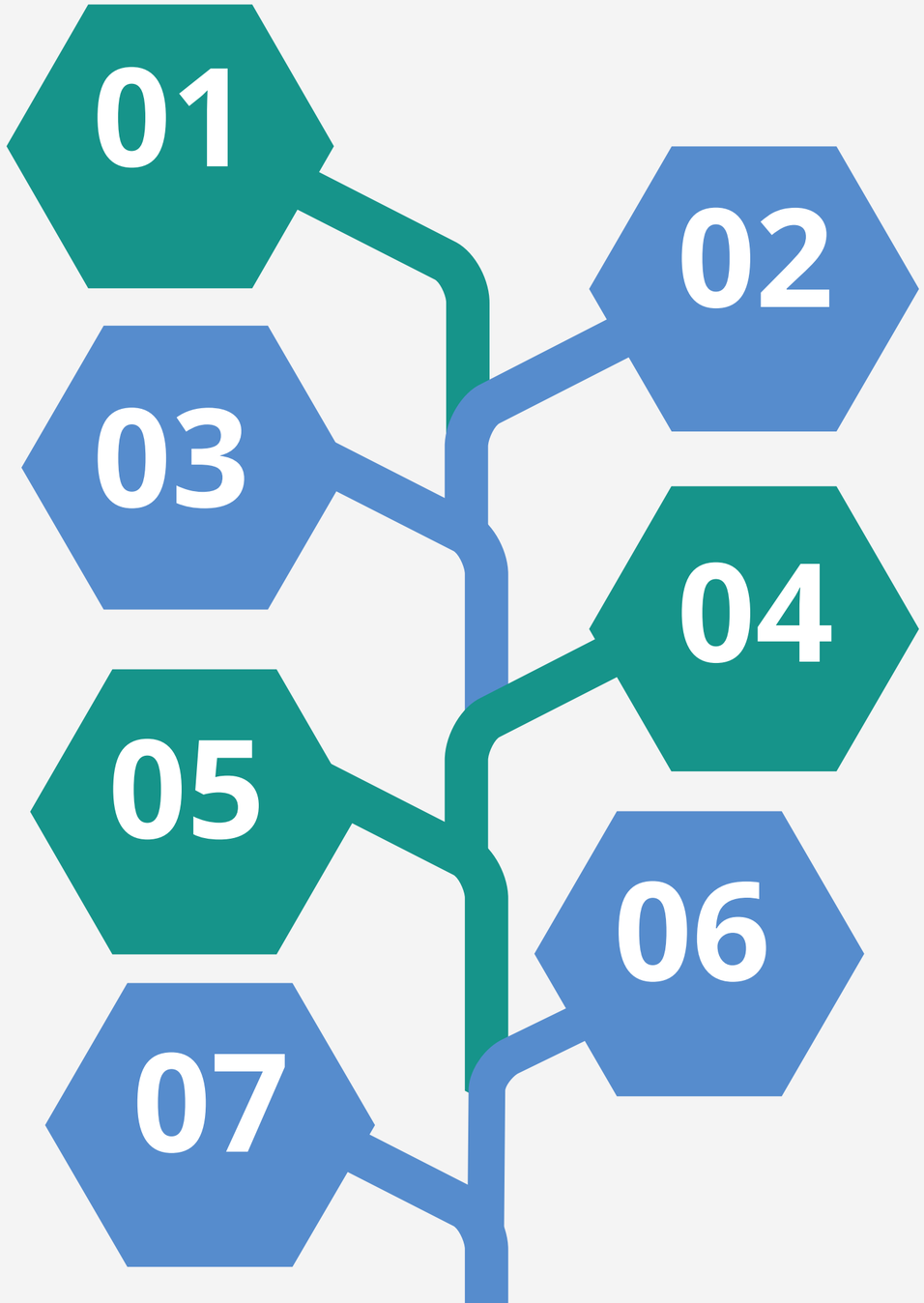
03 Each participant was given 1 minute to take as many shots as possible

04 Participants only used their dominant hand

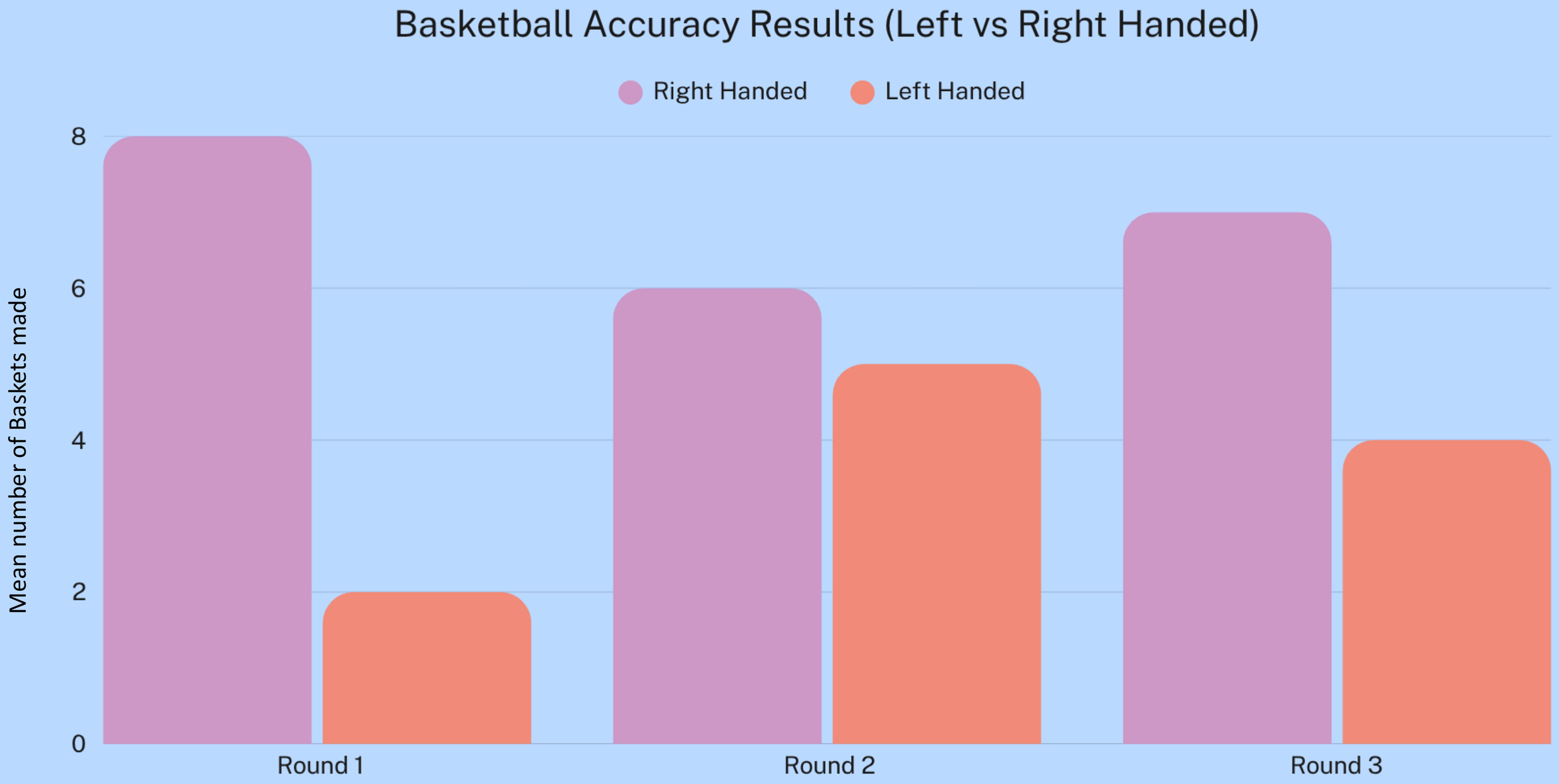
05 The number of successful baskets was recorded

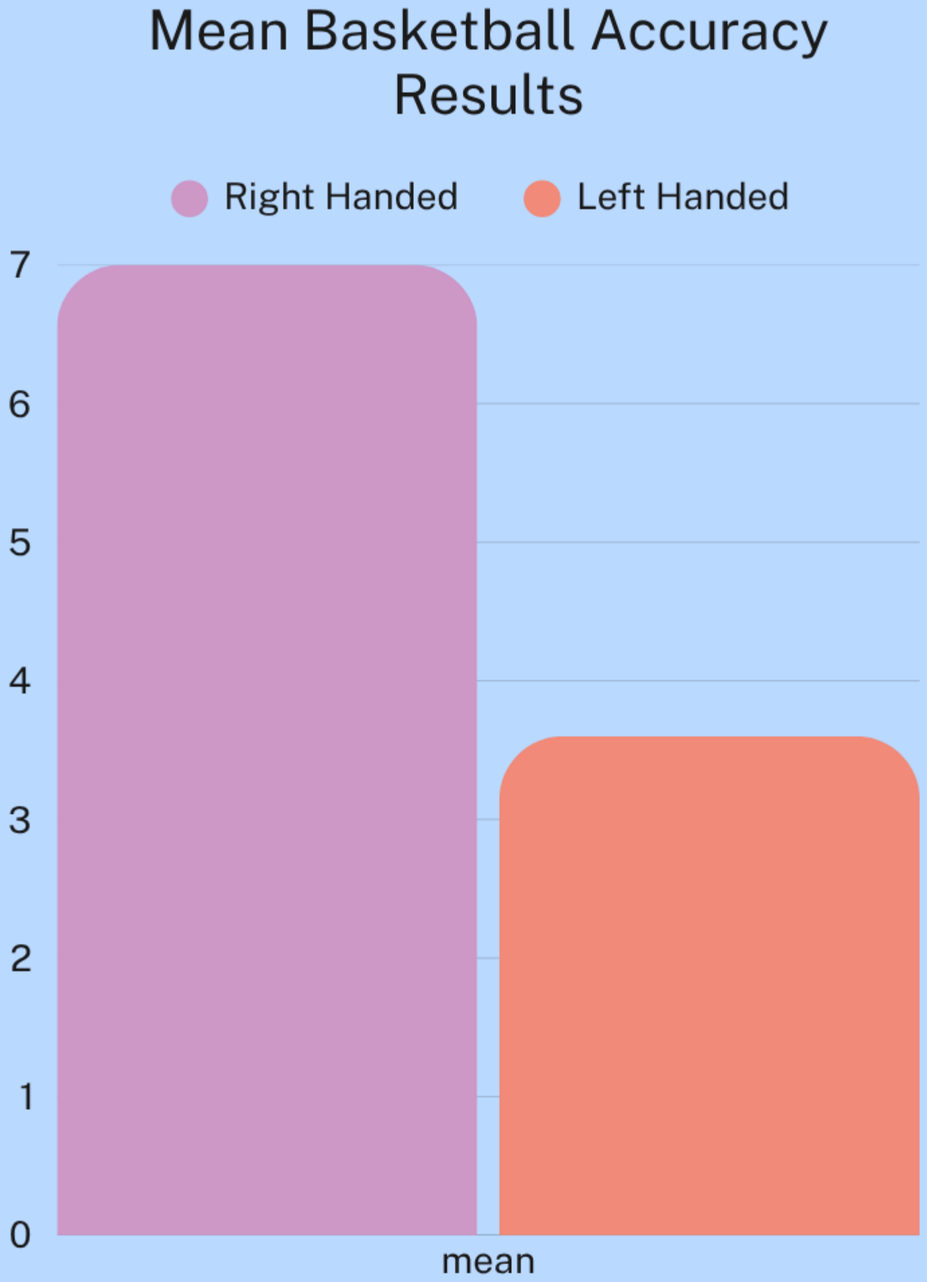
06 The test was repeated three times

07 Results were recorded and compared



Results


Basketball Accuracy Results (Left vs Right Handed)
Right Handed
Left Handed
Mean number of Baskets made
8
6
4
2
0
Round 1
Round 2
Round 3



Results & Analysis

- The right-handed participant scored higher in all rounds
- Round 1 showed a large difference (8 vs 2)
- In both rounds 2 and 3, the gap in performance decreased considerably
- This shows that the left-handed participant improved with practice
- The right-handed participant had a higher average score (7 vs 3.6)
- This suggests that practice may influence accuracy more than handedness

Conclusion

The results showed that the right-handed participants performed better overall, achieving a higher score across all rounds. However, the left-handed participants demonstrated noticeable improvement in the second and third rounds, reducing the gap in performance. This suggests that practice and familiarity can have a significant impact on accuracy, and that handedness alone may not determine performance. Therefore, the hypothesis was not supported. While the sample size was limited, the experiment highlights the importance of skill development and suggests that accuracy can be improved through practice regardless of handedness. Also our results only focused on one type of sport, the hypothesis may still stand true for other sports and so further investigation is needed.

Application

Our results suggest that recognising hand efficiency in basketball can encourage players to train their non-dominant hand, leading to more balanced skill development. From a sports science perspective, this supports the idea that performance is influenced by both coordination and practice.

Additionally, reducing reliance on a single hand may help lower the risk of overuse injuries, as repeated strain on one side of the body can lead to fatigue and injury. Therefore, training both hands can enhance performance while also supporting long-term athlete health. Overall, this highlights that performance in sport is influenced by a combination of biological factors and practice.

References

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THANK YOU FROM

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