

Cricketers are not tickled pink by a new coloured ball.

Robert Maguire¹, Matthew A. Timmis^{2,3}, Luke Wilkins⁴, David L. Mann⁵, Eldre Beukes¹, Alice Homer¹, James A. Johnstone², Joshua Adie^{6,7}, Derek Arnold⁸, Peter M. Allen^{1,3}

1. Department of Vision and Hearing Sciences Anglia Ruskin University Cambridge, 2. Cambridge Centre for Sport and Exercise Sciences (CCSES), School of Psychology and Sport Science, Anglia Ruskin University, Cambridge, 3. Vision and Eye Research Institute, School of Medicine, Faculty of Health, Education, Medicine, and Social Care, Anglia Ruskin University, Cambridge, 4. Newcastle University, Institute of Neuroscience, 5. Department of Human Movement Sciences, Amsterdam Movement Sciences and Institute of Brain and Behaviour Amsterdam, Vrije Universiteit Amsterdam, 6. School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, 7. Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, 8. School of Psychology, The University of Queensland, Brisbane.

OBJECTIVES:

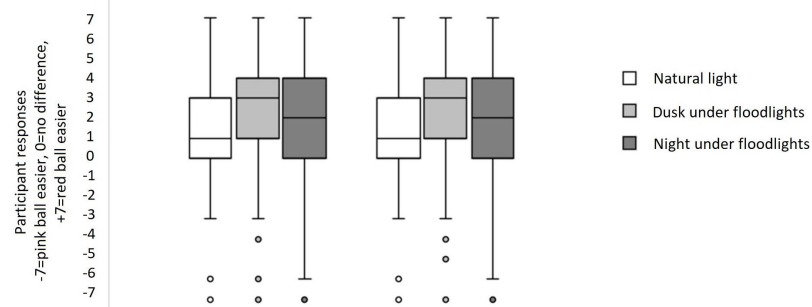
Cricket administrators have started scheduling long-form matches which finish at night and are played with a pink as opposed to red ball¹. However, there are reports that the pink ball may introduce new dangers and alter performance^{2,3}. The aim of this study was to investigate professional cricketers' opinions about the visibility of the pink ball whilst playing in different lighting conditions (afternoon, dusk and night).

METHODS:

- Eighty-eight international or first-class professional cricketers completed a questionnaire consisting of Likert scale and free text responses.
- Questions covered perceptions of the pink ball, with a particular emphasis on visibility.

RESULTS:

- The pink ball was reported as less visible than the red ball when batting ($p < .001$) and fielding ($p < .001$).
- The pink ball was significantly less visible at dusk under floodlights compared to afternoon and night both when batting and fielding ($ps < .001$).
- Free text comments confirmed that visibility of the pink cricket ball was most challenging at dusk (coverage 0.37), and that players sometimes experienced a blurring sensation with the pink ball leaving a visual 'trail' when viewed under floodlights (coverage 0.24).



WHAT ARE THE NEW FINDINGS?

- A systematic investigation of professional cricketers' opinions suggests that the pink ball is difficult to track when both batting and fielding, particularly at dusk.
- The results of this study suggest that visibility is poorer, and therefore player safety may be compromised with the pink ball, in particular at dusk.
- Experience playing and/or practicing with the pink ball do not affect perceived visibility, suggesting the difficulties are related to environmental conditions such as lighting, dusk duration, atmospheric condition and location.

CONCLUSIONS AND RECOMMENDATIONS FOR ACTION:

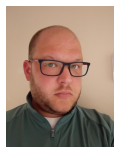
Findings indicate that the pink cricket ball is less visible than a red ball whilst batting *and* fielding. Difficulties are predominantly experienced at dusk (under floodlights), and were greater when batting against pace (faster) bowling compared to spin bowling. These results may have implications for player safety if the ability to effectively track the pink ball is compromised. Cricket governing bodies should consider the inclusion of a break in play during dusk to avoid this most visually challenging lighting condition.

ACKNOWLEDGEMENTS:

The authors wish to thank The Professional Cricketers Associations' Professional Development Managers for their assistance with distributing the surveys, The England and Wales Cricket Board and Alan Fordham for facilitating contact with the key contacts providing the pathway to collecting the opinions. Thanks also go to all the professional cricketers' who kindly gave their time to complete our survey.

References:

1. Lalor, P. (2015, November 16). Day-Night Tests could boost world cricket, says Cricket Australia. Retrieved from: <https://www.eaustralian.com.au/sport/cricket/daynight-ests-could-boost-world-cricket-says-cricket-australia/news-story/f2f904b4850c54d556261fff85efbb95>
2. Adie, J. M., & Arnold, D. H. (2017a). Pink cricket balls may be visually challenging at sunset. *I-Perception*, 8(1), 204166951668704. doi:10.1177/2041669516687049
3. Sarpeshkar, V., & Dhawan, A. (2018). The pink ball in cricket: a call to investigate the impact of ball-colour on visual-motor behaviour. *SportRxiv Preprints* doi:10.31236/osf.io/dgaqt



Robert W. Maguire
rwm110@pgr.aru.ac.uk

