

# Evidence-based practice in Optometry: Validation of a modified Fresno Test



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Never Stand Still

Faculty of Science

School of Optometry and Vision Science

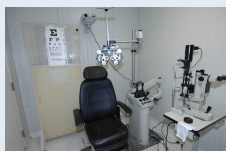
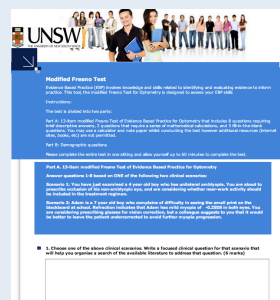
## Introduction

The Fresno test was developed to assess knowledge and skills in evidence based medicine and successfully modified for use by physical therapists.<sup>1,2</sup>

There is no existing tool to measure optometrists' competencies in EBP.

## Aim

To develop and validate a modified Fresno test to assess optometrists' competence in EBP.



## Methods

- The Fresno test was modified to include optometry specific scenarios and related questions: eight short-answer questions, two questions requiring mathematical calculations and three fill-in-the-blank questions.
- A standardised scoring rubric was used with a maximum score of 224.
- The test was applied to 37 postgraduate students of the School of Optometry and Vision Science at the University of New South Wales, and 11 EBP experts (age  $37 \pm 8$ ) (M: F 16: 32).
- Two masked, trained raters independently scored the responses.
- Psychometric properties of the modified instrument were evaluated.

## Results

- Internal consistency was acceptable (Cronbach's  $\alpha = 0.75$ )
- Inter-rater reliability was high (ICC 0.895; 95% CI 0.692-0.954)
- EBP experts (score  $146 \pm 26$ ) performed significantly better than the postgraduate students (non expert) (score  $94 \pm 23$ );  $p < 0.01$  (Figure 2)

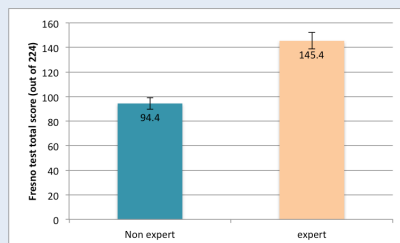
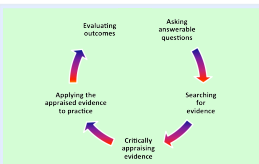


Figure 2: Scores for EBP expert and EBP novice optometrists

The five EBP steps (Figure 1)



## Conclusion

- The modified Fresno test for optometry shows promise as a test of competency in EBP.
- Further refinements and validation of the test using optometrists with a high level of expertise and a larger sample will provide a test with wide potential application in optometry.

## References

- Ramos KD, Schafer S, Tracz SM. Validation of the Fresno test of competence in evidence based medicine. *BMJ*. 2003; 326: 319-321.
- Tilson JK. Validation of the modified Fresno Test: assessing physical therapists' evidence based practice knowledge and skills. *BMC Med Ed*. 2010; 10:38

## Discussion

- This modified Fresno test provides a valid optometry-specific assessment of the first four steps of the EBP model. (Figure 1)
- Completing the Fresno test and scoring it, is time intensive. Future work is needed to develop a mini version of this test.
- "mini- Fresno" for optometry may have wide application in future.
- This test can be used to highlight which areas and skills optometrists need to improve as EB practitioners.

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