

Summary of: Evaluation of the basic erosive wear examination (BEWE) for use in general dental practice

B. Dixon,¹ M. O. Sharif,² F. Ahmed,³ A. B. Smith,⁴ D. Seymour⁵
and P. A. Brunton⁶

FULL PAPER DETAILS

¹General Dental Practitioner, Leeds Dental Institute, University of Leeds, Leeds; ²NIHR Academic Clinical Fellow - Orthodontics, ³Dental Foundation Year Two Trainee, School of Dentistry, University of Manchester, Manchester; ⁴Lecturer in Quantitative Methods, ⁵Speciality Registrar in Restorative Dentistry, ⁶Professor of Restorative Dentistry, Leeds Dental Institute, University of Leeds, Leeds
*Corresponding to: Professor Paul A. Brunton
Email: p.a.brunton@leeds.ac.uk

Refereed Paper

Accepted 12 April 2012

DOI: 10.1038/sj.bdj.2012.670

©British Dental Journal 2012; 213: E4

Objective The basic erosive wear examination (BEWE) is a relatively new index proposed for the screening and recording of tooth wear in adults. The aim of this study was to test the validity and reliability of the BEWE. **Design** Cross sectional study of a sample of 164 adult patients. **Setting** General dental practice in East Lancashire, UK in 2010. **Subjects** Patients attending for routine examination or treatment. **Main outcome measures** By screening patients with the BEWE and comparing the results to the established tooth wear index (TWI) the sensitivity and specificity of the BEWE was established. **Results** The BEWE predicted moderate to severe wear (BEWE grade 3) with a sensitivity of 48.6% and a specificity of 96.1%, and predicted severe wear with a sensitivity of 90.9% and a specificity of 91.5% (also BEWE score 3). Inter- and intra-examiner reliability for the BEWE were both moderate ($\kappa_w = 0.43$ and 0.57 respectively). **Conclusion(s)** BEWE scores show a similar distribution to TWI scores and the examination is an effective screening test for severe tooth wear. The moderate levels of examiner reliability suggests the BEWE scores should be interpreted with some caution.

EDITOR'S SUMMARY

'A man loses his illusions first, his teeth second, and his follies last', claimed US author Helen Rowland in the 1920s. No longer true! Now people are keeping their teeth long after they lose their follies and become wise old souls. But the rise in levels of tooth wear is the natural consequence of us holding onto our teeth for longer. The ever increasing consumption of fruit juice and carbonated drinks is also contributing to the problem. What can we do to stop it?

Tooth wear is much easier to prevent than to treat but it can be difficult to monitor in general practice making it tricky to record and diagnose accurately. Ideally we should be acting before we reach levels of moderate or severe wear which is indicated by complete enamel loss with exposure of pulp or secondary dentine. Unlike periodontal disease which can be monitored in practice using the effective basic periodontal examination (BPE), to date there has been no universally accepted method for recording erosive tooth wear.

The authors of this *BDJ* research article test a basic erosive wear examination (BEWE), which was developed by Barlett *et al.* in 2008, as a likely candidate for general practice recording of tooth wear. The examination incorporates a risk score to provide an indication of the patient's level of risk of tooth wear which can then guide their clinical management.

The authors compare the reliability of the BEWE for screening tooth wear in adults to the tooth wear index (TWI) which, though very reliable, is not really suitable for use in day-to-day practice. The BEWE on the other hand is quick and similar to the BPE, meaning that a GDP would only be required to adapt their current BPE understanding and experience to be able to implement it. Despite a caveat regarding the comparison of results between different clinicians, the authors did indeed find that the BEWE is an appropriate and reliable tool to allow the degree tooth wear to be measured and recorded from appointment to appointment. Time will

tell whether the BEWE will become the universal tool of choice to monitor tooth wear – we certainly need something to monitor this wearing problem.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 213 issue 3.

Ruth Doherty
Managing Editor

DOI: 10.1038/sj.bdj.2012.698

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IN BRIEF

- Highlights that erosive tooth wear is increasingly prevalent.
- Stresses that monitoring of erosive tooth wear is important for good treatment planning.
- Suggests a reproducible index for practitioners would be clinically useful.

COMMENTARY

The BEWE (basic erosive wear examination) is an index designed in a similar way to the BPE (basic periodontal examination). Both indices are intended to allow GDPs to quickly yet effectively screen and record the severity of tooth wear in their patients. The examination should help GDPs record tooth wear in their notes to show that it has been recognised and examined; it is not intended for research. This paper looks at the effectiveness of the examination and whether it is fit for purpose. The researchers examined tooth wear in 164 adult patients attending for routine care in a general practice. The mean age of the patients neared 43-years-old and these had a total of 15,125 tooth surfaces. The BEWE was recorded as well as the Smith and Knight Index for comparison. The BEWE slightly underscored more severe wear but had a specificity of 96.1%. The results showed the examination gave few false positives. The authors also compared the scores between two examiners to test its reliability. The results showed moderate agreement.

Overall, the authors felt that the BEWE was a simple screening tool designed for general practice. Like the BPE it is not designed to be a research tool and will suffer, because it is simple, from some challenges between the results from different examiners. In summary the authors felt that the examination was an appropriate tool for measuring and recording tooth wear.

Professor David Bartlett
Head of Prosthodontics
King's College London Dental Institute

AUTHOR QUESTIONS AND ANSWERS**1. Why did you undertake this research?**

Tooth wear, particularly erosion, is an area of great interest to the research team as it is an increasing clinical problem both in terms of diagnosis but also of monitoring the progression of the disease. An index that could be used by primary care practitioners would be very useful as often indices for tooth wear assessment are not suitable for clinical use. As part of our research programme in primary dental care it was decided to field test this index and compare its performance against a validated index.

2. What would you like to do next in this area to follow on from this work?

Further work is needed to accurately diagnose tooth wear of all types at an earlier stage when treatment options can be simple and largely preventive in nature. Indices, along with novel treatments, will need developing and validating for future use by all members of the dental team. This will be the future focus of our research team.