Retention: Evidence-Based Solutions for Every Clinician
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Introduction
• Orthodontic retention is arguably the most important subject in orthodontics and should form a central part of every treatment plan
• Relapse is recognised as the most common risk in orthodontics
• This lecture will aim to discuss the best quality of evidence available on orthodontic retention

Relapse
• Relapse is unpredictable
• Aetiology of relapse includes periodontal and occlusal factors (which we can control) and soft tissue changes and late growth changes (which we can't control as they are part of the normal ageing process)
• Consent process should include information about retention, and treatment should only proceed if patients are willing and able to follow advice about reducing relapse

Worldwide retention
• Retention regimens differ significantly across the world
• This either means different populations have different relapse potential; or it suggests it does not matter which retainers we use; or perhaps more likely, at the present time we are not aware of the best evidence on retention

Evidence on retention
• High quality research evidence, eg RCTs, reduces the chances of bias. This means we are more likely to find out the truth when looking at the results of high quality research trials
• For more information on high quality evidence in orthodontics see www.ohg.cochrane.org
• Higher quality evidence is now available on retention in orthodontics

How often to wear retainers
• Evidence on number of hours per day to wear vacuum-formed retainers and Hawley retainers will be discussed

Hawley retainers
• These are compared to vacuum-formed retainers in research looking at patient satisfaction, cost-effectiveness and stability
• We have new evidence looking at how often our patients truly wear Hawley retainers (compliance)

Vacuum-formed retainers
• There are made from many different materials, and materials showing the best resistance to wear will be discussed
• There are potential dangers of inappropriate wear of vacuum-formed retainers & a case will be illustrated

Bonded retainers
• Commonest problem is bond failure – methods of reducing this will be discussed
• High quality research has compared bonded with vacuum-formed retainers
• Relapse can occur even when bonded retainers are in situ and a case will be discussed
• Dual retention combining bonded retainers with vacuum-formed retainers is now popular

Summary
• Retention is unpredictable, so we have to assume all cases have the potential to relapse, either due to our orthodontic treatment, or due to age changes
• We now have higher quality evidence on how many hours per day removable retainers need to be worn, as well as good studies comparing Hawley retainers, vacuum-formed retainers and bonded retainers
• All retainers carry risk, and if we are asking our patients to wear them long-term we need to ensure our patients understand how to look after them and the importance of good maintenance.

Simon J Littlewood, April 2014

www.littlewoodortho.com
References
2. Littlewood SJ, Millett DT, Bearn DR, Doubleday B, Worthington HV (2011) Retention (Chapter 12 – chapter in textbook) Evidence-based orthodontics (edited by Huang, Richmond & Vig, Publisher Wiley-Blackwell)

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