Clinical Factors Affecting Long-term Stability of Orthodontic Results

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Stability vs Sustainability

Whether or not individual cases can be viewed as successful or not needs to be evaluated by the long-term sustainability of treatment results.

Numerous factors affecting sustainability are under the control of the orthodontist.

There is no part of orthodontic treatment that is more important than the functional retention of the finished case.

Maintaining the patient’s existing arch dimensions, with the possible exceptions of patients who exhibit malformed or mutilated arches, results in the most stable post-treatment results.

The establishment of a functional and stable post-treatment occlusion should be a primary objective of orthodontic treatment so that the results can be sustained over the long term.

Factors affecting post-treatment relapse

Riedel (1960), Joondeph (in Graber et al. 2005)
1. Arch Dimensions and Tooth Extraction
2. Occlusion and Post-treatment Tooth Position
3. Periodontal and Gingival Supporting Tissues
4. Mandibular Incisor Dimensions and Proximal Contacts
5. Environmental Factors, Cooperation of the Patient
6. Continued Growth and Development
7. Third Molars
8. Time Out of Treatment
9. Severity of Pre-treatment Malocclusion

A Retention Protocol

Once it is decided that the best possible result has been achieved:

Take impressions for U/L Bonded Lingual Retainers (BLR), give appointment for debonding/debanding for one month later.
At debonding appointment: Upper 2-2 BLR, Lower 3-3 BLR.
Wire used for BLR: 0.8mm twisted wire (# 260-032 - 3M Unitek)
Adhesive used: Assure (Reliance Orthodontic Products) with a Flowable Composite or Compomer.
Hawley’s Retainers are delivered within 5 days.
Hawley’s Retainers to be worn every night.
Post-treatment photos are usually taken when retainers are delivered.
Retention checks: after 3 months, 3 more months, 6 more months, 6 more months, then once a year until age 18 years.