The TMJ diagnosis, has become an undisputed professional and forensic must.

The early recognition of problem cases provides valuables hints:

- To avoid treatment errors and functional disorders, (preventive reasons)
- To improve the treatment planning, and reduce relapse.
- To treat TMD during the orthodontic or prosthetic Rehabilitation.

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the concept of the
Progressive bite jumping

1. Passive kondyle drift
due to the mobilization of muscles and ligaments
due to the elimination of occlusal balks

2. Active mandible advancement
step by step

3. Fixed and long retention
MARA-Stops
TMJ pre-treatment for a better orthodontics

**Manuel therapy**

- Elimination of occlusion barks (splint).
- Mobilisation of capsel and ligaments.
- Muskel relaxation.
TMJ pre-treatment for a better orthodontics

The bite jumping and the TMJ remodeling during the mandible advancement depends not just on age, timing and duration of treatment, sex, maturity, and the facial growth pattern, but also on the condition of TMJ, which is markedly related to the effectiveness and stability of occlusal rehabilitation.
The recent MRI studies about fixed mandible advancement prove bone remodeling in the TMJ (which can be considered as a skeletal change), being a combination of condylar capping, glenoid fossa shifting and anterior condylar movement (Pancherz et al. 1998).

Such TMJ remodeling occurs also in adult patients. This revolutionary new finding means that treatment with a fixed functional appliance may be an alternative to orthognathic surgery in borderline Class II cases.
- The orthopedic bite-jumping is influenced not only by growth direction and potential, kind and duration of treatment, and elongation of muscle fibers and tendons, but also by tightening the healthy capsule and ligaments which have to exert sufficient tensile force to trigger the desired remodeling responses. Obviously, weak or lax capsules/ligaments are unable to build up sufficient tension to stimulate larger bone remodeling.
Successful and stable reposition of the disc crucially depends upon the following prerequisites (Sabbagh 2000):

- class II relationship (no class I or III).
- Evidence of a partial disk displacement with reposition proved by manual functional diagnosis, dynamic compression and translation (Bumann and Lutzmann 2000)
- Diagnostic exclusion of articular disc wear (especially of the pars posterior) by means of imaging techniques (MRT).
Advantages of disc reposition with fixed functional appliance:

- Stable reposition of the displaced discs (no break relapse), enables all functions such as eating, speaking, etc. in the new therapeutic clicking-free TMJ position thus preventing repeated trauma to the TMJ in contrast to the traditional removable reposition splint.

- **Simultaneous occlusal rehabilitation** is possible using the multi-bracket system
Our short- and long-term TMJ research using tomography and MRI has shown no adverse effects of Herbst treatment on the different hard and soft tissue joint structures. However, many cases have demonstrated that Herbst therapy results in a retrusion of the articular disc. This effect can be used in the therapy of Class II malocclusions with milder forms of anterior disc displacement to attain a reduction of the disc malposition.