

Special Issue on
**Orthodontics in Growing Patients: Clinical/Biological
 Evidence and Technological Advancement 2018**

CALL FOR PAPERS

Interceptive orthodontic treatment, the so-called early orthodontic treatment, has been controversial since its emergence with regard to its efficacy and application. Interceptive orthodontic treatment can be defined as the orthodontic intervention in the deciduous, early mixed, or mid mixed dentition. But it is possible to refer it to the late mixed dentition stage of development. The American Association of Orthodontists defines interceptive orthodontics as “that phase of orthodontics employed to recognize and eliminate potential irregularities and malpositions in the developing dentofacial complex.” It is not yet clear, from the results of the literature, whether early treatment is desirable because tissue tolerance and its power of adjustment are at or near their maximum or because there is no assurance that early treatment will be helpful, without causing an unnecessary lengthening of the time of treatment. In addition, from the emerging trends in orthodontics and dentofacial orthopedics, early treatment not only prolongs therapy but also may exhaust the child’s spirit of cooperation and compliance.

There is little doubt that functional appliances produce tooth movement or correct skeletal-occlusal discrepancies. The first controversy concerns the hypothesis about the modification of growth of the basal parts of the jaws and temporomandibular joint (TMJ) . Many researchers believe that mandibular and maxillary growth can be influenced by functional appliances. It seems to be clear that a more favorable response is seen when subjects are treated during their pubertal growth spurt, mostly in skeletal Class II patients (even though high individual responsiveness remains).The TMJ area has been thought to be a reactive growth site; that is, the prolonged change in the position of the mandible during the growth period, induced by the appliance, results in bone apposition on the surfaces of the joint. Some histological evidences support this concept, and ample clinical evidence has been produced in attempts to show that the use of functional appliances can alter the skeletal relationship of the jaws, through modifications also in the TMJ areas. However, this evidence does not always take into account the effects of the normal growth of TMJ. During the period of mixed dentition, TMJ is interested by a considerable amount of growth and adaptation, which can alter jaw relationships, while the patient is using the functional appliance. While several investigators failed to evidence TMJ adaptation during functional orthopedic treatment, they think of the main effects of orthopedic functional appliances to be tipping of the incisors and rotation of the mandible. In addition, there are clinical difficulties to individuate the growth indicator. They also clarify that no growth indicator may be considered to have a full diagnostic reliability to assess the pubertal growth spurt of a patient. Nevertheless, their use may still be recommended for increasing efficiency of interceptive orthodontics, in particular for skeletal Class II malocclusion.

All these considerations result in a lack of definitive evidence in this field. The normal growth of TMJ and the effects of appliance may be confused.

This special issue examines the key areas relating to interceptive orthodontics and related changes, mostly in the TMJ area, with the available evidence to support the clinical management of common problems presenting in the mixed dentition. We invite investigators to submit original research articles and reviews to this special issue.

Potential topics include but are not limited to the following:

- ▶ Growth and development of face
- ▶ Biological evidences on the effects of orthodontics in growing patients
- ▶ Changes of TMJ adaptations during growth
- ▶ TMJ adaptations to functional appliances in growing patients
- ▶ Interceptive appliances and their skeletal effects on facial morphology and TMJ anatomy
- ▶ Timing of orthodontic treatment
- ▶ Skeletal versus dental effects of functional appliances
- ▶ Controversies and potential therapeutic implications
- ▶ Functional and orthopedic appliances for skeletal corrections
- ▶ Technological advancements in orthodontics for growing patients

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/bmri/anatomy/iot18/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor

Simona Tecco, University Vita-Salute
 San Raffaele, Milan, Italy
tecco.simona@hsr.it

Guest Editors

Alberto Baldini, University Tor Vergata,
 Rome, Italy
studiomedicobaldini@gmail.com

Enita Nakaš, University of Sarjevo,
 Sarjevo, Bosnia and Herzegovina
enitta@gmail.com

Jasmina Primozic, University Clinical
 Centre of Ljubljana, Ljubljana, Slovenia
jasminaprimozic@gmail.com

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