

# Adjunctive Orthodontics

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**A**djunctive orthodontics is the tooth movement carried out to facilitate other dental procedures necessary to control disease, restore function and/or enhance appearance as the part of adult orthodontics.

“Goal of Adjunctive Treatment Procedures is to provide a physiologic occlusion & facilitate other dental treatment & has little to do with Angle's concept of ideal tooth relationships.”

Adjunctive orthodontic procedures include procedures like Closing Diastema, Space Management, Anterior Alignment, Elimination of interproximal “black spaces”, Molar up righting, Abutment Paralleling etc.

## Replacement of Missing Laterals

- The occurrence of congenitally missing maxillary lateral incisors or abnormally shaped maxillary lateral incisors (Peg laterals) brings patients to consult for orthodontic therapy as part of the restoration of such occlusal problems.



- Clinically, the absence of maxillary lateral incisors is reflected by the presence of anterior spacing, including a diastema between the central incisors and a mesial drifting of the cuspids.

## Treatment options include :

1. The opening of the space to replace the missing lateral incisors with bridges or implants when indicated. This treatment

strategy is favored when the posterior occlusion is class I.

2. The space corresponding to the missing lateral incisors may be closed by protraction of the cuspids and the buccal segments of teeth leading to a molar class II final occlusion. The cuspids can be reshaped into lateral incisors, bonded with composite, veneered, or crowned .

## Alignment of Anterior Teeth

### Indications are-

1. To improve access and permit placement of well-adapted and contoured restorations.
2. To reposition closely approximated roots, to improve the embrasure form and increase the amount of interradicular bone, which in turn increases the chance that periodontal disease can be controlled.
3. To position teeth so implants can be placed to support restorations.
4. Rotations, crowding, spacing, tipped teeth, and crossbites all pose problems for restorative and periodontal procedures.



## Anterior Restorations

There are three particularly important considerations in deciding where the orthodontist should position teeth that are to be restored :

- The total amount of space that should be created

- The mesio-distal positioning of the tooth within the space
- The bucco-lingual positioning.

The orthodontic teeth positioning obviously should provide adequate space for the appropriate addition of the restorative material. The ideal position may or may not be in the center of the space mesio-distally. Similarly, the ideal bucco-lingual position of a worn or damaged tooth would be influenced by how the restoration was planned. If a crown or composite build-ups are planned, the tooth should be in the center of the dental arch.

## Gingival Esthetic Problems

Gingival esthetic problems fall into two categories: those created by excessive or uneven display of gingiva and those created by gingival recession after periodontal bone loss.

A particularly distressing problem is created by gingival recession after periodontal bone loss, which creates “black holes” between the maxillary incisor teeth.

One approach to this problem is to remove some interproximal enamel so that the incisors can be brought close together. This moves the contact points more gingivally, minimizing the open space between the teeth.

## Missing Teeth: Space Closure Vs. Prosthetic Replacement

The factors that should keep in mind are-

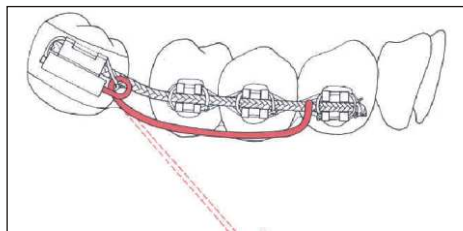
**A) Old Extraction Sites :** In adults, closing an old extraction site is likely to be difficult. After several years, resorption results in a decrease in the vertical height of the bone, but more importantly, remodeling produces a buccolingual narrowing of the alveolar process as well. When this has happened, closing the extraction space requires a reshaping of the cortical bone..

**B) Tooth Loss Due to Periodontal Disease:** A space closure problem is also posed by the loss of a tooth due to periodontal disease. It is unwise to move a tooth into an area where bone has been destroyed by periodontal disease, because of the risk that normal bone formation will not occur as the tooth moves into the defect. It is better to move teeth away from such an area, in preparation for prosthetic

replacement.

**Space regaining -Molar Uprighting :**

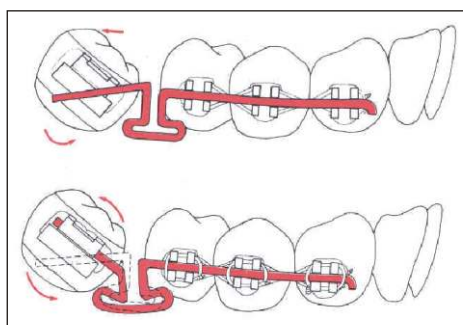
Partial fixed appliances are preferred to upright tipped molars. For severely tipped molars sectional uprighting spring is used.



A slight lingual bend placed in the uprighting spring is needed to counteract the forces that tend to tip the anchor teeth buccally and molar lingually.

Up righting spring cause considerable extrusive force and distal crown movement ,so should only be done when occlusal antagonist is present.

Up righting with minimal extrusion is necessary when molar does not have occlusal antagonist. The Crown is maintained in position while roots are brought mesially .

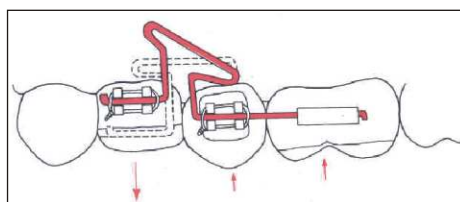


A single "T-loop" sectional arch wire of 17x25 SS or 19x25 beta Ti is adapted to fit passively into the brackets on the anchor teeth and gabled at the T to exert an up righting force on the molar.

**Forced Eruption**

Teeth with defects in the cervical third of the root or isolated teeth with one or two walled vertical periodontal defects are candidates for forced extrusion. Forced eruption also allows crown margins to be placed on sound tooth structure . As a general rule, endodontic therapy should be completed before extrusion of the root begins.

If possible a bracket is placed on the tooth to be extruded. Brackets are also palced on adjacent teeth that act as an anchor and a modified T-loop is used. Brackets should be bonded as gingivally as possible on teeth to be extruded. Part of T-loop engaging the tooth to be extruded should be designed to lie more occlusal than the anchor segment.



If it is not possible to place brackets on the tooth to be extruded, e.g. a horizontal crown fracture at coronal 1/3<sup>rd</sup> of the roots, then a post and core with temporary crown and pin can be placed on the teeth to be extruded and an elastic module or auxiliary NiTi spring can be used to extrude the teeth.

**Orthodontic- Prosthodontic Implant Interaction**

For the orthodontist, the implant vs. bridge decision makes a difference in how the teeth are positioned and in the sequencing of treatment. Major concerns when implants are to be placed are adequate bone in the edentulous area to support the implant, especially when the implant is to

replace a congenitally missing tooth, For this reason, when an implant is planned as the eventual replacement for a missing maxillary lateral incisor or mandibular second premolar (the most frequent congenitally missing teeth,) it is important for a tooth to erupt in the eventual implant area. Alveolar bone will form in a 2-4 mm area adjacent to an erupting tooth.

**Conclusion**

It would do well for all of us to keep in mind that we cannot stand alone. With proper team work, better and more esthetic and conservative results can be achieved but a team approach requires interchange of information among clinicians and investigators of the various disciplines. Orthodontic movement can serve to establish an environment which provides for physiologic function as well as the re-establishment of what is considered a "proper tooth position."

**References**

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