

## Advanced Light Wire Functionals (ALF) in Orthodontics

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### INTRODUCTION

ALF (Advanced Light wire Functionals) is a non-traditional method of orthodontic treatment. It uses the principles of cranial osteopathy, which in turn helps in the advancement of the mandible. This promotes changes in muscle form, function and helps to achieve a stable result and improves the patient's profile. When compared to traditional braces, patients who are receiving ALF treatment are fitted with removable appliances. The appliance is custom-made and uses wires to reposition jaws, dental arches, and the teeth. Advantages of ALF appliance are -<sup>1</sup>

- ALF patients enjoy easier flossing and the ability to brush their teeth more thoroughly as the appliance can be removed.
- ALF appliances are nearly invisible.
- Significantly less discomfort is there when ALF appliances are given.
- Dental visits are needed only every 6 to 8 weeks.
- ALF appliances promotes proper facial development, airway enlargement, and improved posture.

Cranial osteopathy is a procedure in which the patient's cranial bones and facial coverings are gently manipulated. It can be used to treat specific dysfunctions, achieve realignment, and improve the patient's overall health. ALF appliances when given on a gradual basis can achieve satisfactory alignment results. Typically, treatment for children begins between ages 6 and 8, but in some children treatment can be started at the age of 5. It is important to remember that by age 4, 60% of an individual's facial growth is complete; and by age 6, 80% of the facial growth is complete. ALF treatment can be extremely effective when it is started during the growth spurt

stage as it promotes skeletal manipulation. Older patients can also benefit from ALF treatment because it directly affects overall health. Patients at nearly every age can enjoy noticeable and effective results.<sup>2</sup>

In general ALF treatment time ranges from 2-3 years and following changes can be achieved-

- Correct bite/deep bite can be corrected.
- Dental arch expansion where needed
- Elimination of cranial strains
- Proper repositioning of the jaws in relation to each other
- Retention of the new position to allow the bone and teeth orientation to fully adapt to the new position.

The ALF appliance uses light continuous force to aid in opening of the sutures of the maxilla and cranium for lateral expansion and also anterior protraction. It can be used to create bilateral or unilateral forces which are gentle to the underlying bones. The force may not cross the mid-palatal suture and hence does not interfere with daily speech or tongue positioning. This helps to create a healthy foundation for the maxilla which ultimately leads to a more functional mandibular position which in turns enhances the airway space and promotes a sound bilateral TMJ relationship. Advanced Light wire Functional Appliances are fitted with a thin, partially visible, non-reactive metal removable appliance on the lingual surface that extends around the lingual surface of the arch from molar to molar.<sup>3</sup>

ALF Appliance is a combination of many functional appliances which combine the most optimal features and is wrapped into one ultimate functional orthodontic appliance.

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The ALF appliance is constructed from .022 Blue Elgiloy wire which is a very flexible and resilient metal alloy wire. Omega loops are bent into the arch wire where dental expansion or space creation is desired. Crescents are soldered to the wire to aid in the retention of the appliance in the premaxillary area. Wire cribs help in retention at the molars and can also be designed for specific molar movement. Composite can be placed on various teeth to increase appliance retention. Finger springs can be added at the distal ends of the wire for distal movements of the second molars. Individual loops can also be used to create specific molar movements.

A post-graduate course is necessary for the successful advent of this technique and also to learn about the neurology, functional anatomy and dental-body

interrelationships required for this technique. Orthodontists who have completed such training have worked extra to provide their patients with one of the most effective dental treatment approaches to have ever been developed in the field of dentistry.

### REFERENCES

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