

# THE DRAGONFLY - CHILD FRIENDLY CLASS III TREATMENT IN MIXED EARLY DENTURE

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## BACKGROUND

The aim of the study is to design a new, child-friendly, low-invasive and economic appliance for class III treatment in early mixed dentition while keeping the following aspects in mind:

- Anterior development of the maxilla and reduction of the gonial angle are fundamental goals.
- Skeletal effects are important for longterm-success.
- Starting treatment early allows for more skeletal effects without the risks of e.g. mini-pins.
- Simplifying handling and improving aesthetics increases compliance.
- Combining treatment of horizontal and sagittal dimensions saves time.

## DESIGN

The **DRAGONFLY** is constructed of two parts:

1) The upper jaw plate, consisting of a Hyrax-Expansion screw attached to a metal framework, which encompasses the lateral teeth from the permanent first molar to the deciduous canine or first deciduous molar and is embedded in acrylic. Additionally, it features bilateral vestibular hooks placed next to the upper first molars.

2) The lower jaw plate, also consisting of a metal framework embedded in acrylic with the vestibular metal hooks placed in the canine region, allowing for the wear of Class III elastics for at least 22 hours per day.

Both plates are bonded to the teeth with light-cured composite.

DEVICE	INVISIBILITY	NON-INVASIVENESS	TEMPORAL APPLICATION	COST-EFFECTIVENESS	SCORE
DRAGONFLY	+	+	+	0	3
SKELETALLY ANCHORED DEVICES	+	-	-	-	-2
FACE MASKS	-	+	+	+	2

## MATERIALS & METHODS

- comparing various Class III appliances, which allow for simultaneous maxillary expansion and gonion angle reduction
- Evaluating clinical advantages to develop a new design that incorporates all beneficial aspects



Upper Jaw



Lower Jaw



Front



Side

## COMPARISON

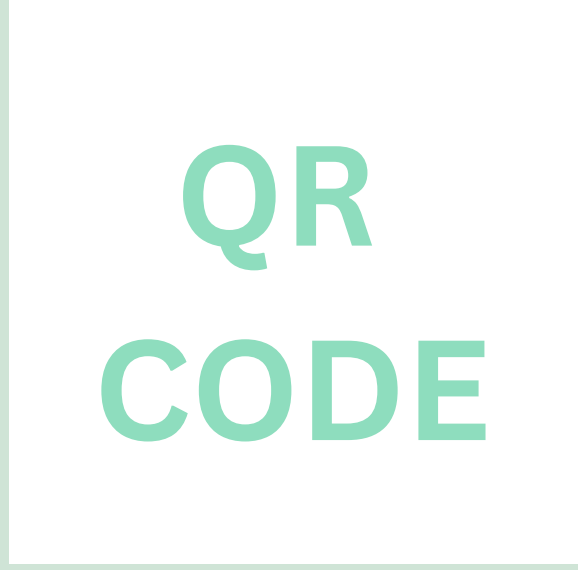
**Skeletally anchored devices** in this comparison include:

- Combinations of (Hybrid-)Hyrax-Expanders, Mentoplate, and Elastics
- Combinations of Hybrid-Hyrax-Expanders and Facemasks
- Bone-anchored maxillary expanders (BAMP)

**Face mask** treatments considered in this study include:

- Delaire Mask
- Reverse-Pull Headgear
- Chin Cup
- ...any of the above combined with Hyrax-Expanders

## (Y)OUR TAKE-AWAY?



## CONCLUSION

The DRAGONFLY is a non-invasive and economical Class III appliance. Further studies are planned to evaluate its clinical use and effectiveness.