

## Headgear & Facemasks



### Objectives

- Understand the different types of headgear and their indications
- Explain how to use headgear and facemasks and the possible risks associated with their use

### Purpose

To aid the correction of malocclusions, guide/restrict jaw growth, and sometimes create space for incoming teeth.

- Headgear is most often employed to manage Class II malocclusions by restraining maxillary growth or retracting upper molars.
- It may also be used in cases requiring anchorage reinforcement during orthodontic treatment
- Can be used to promote maxillary growth or restrict mandibular growth

### Types

- Cervical Pull Headgear: Anchors around the neck; mainly used to move upper molars backward and slightly downward.
- High Pull Headgear: Anchors to the top/back of the head; used to control upward and backward growth of upper jaw.
- Combination Headgear: Uses both neck and crown straps for mixed effects.
- Reverse-Pull / Facemask Headgear: Used to pull the upper jaw forward in Class III cases.

### Factors to consider

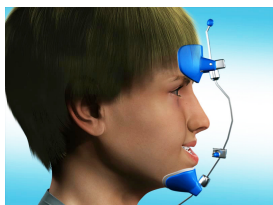
- Direction of force: high/occipital, low/cervical, straight or combi
- Duration of force:
  - Anchorage – 10-12 hours per day
  - Distillation/growth restriction – 14 hours per day
- Level of force:
  - Anchorage: 250g-350g per side
  - Distalisation: 450g – 50g per side

### Types of Headgear



## Protraction Headgear

- Class III in pre-adolescent in early mixed dentition
- Attempts to move maxilla forwards using heavy elastics
- Anchors on patients chin and forehead
- Worn 12-14 hours per day
- Often combined with Maxillary expansion RME appliance



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## Why and when is protraction headgear used?

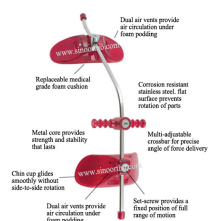
- Typically prescribed for children aged 7–14, when jaw bones are still developing.
- Aims to reduce the need for or to prevent the need for more invasive procedures like jaw surgery later on.
- Often worn 12–14 hours a day, including overnight.



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## Components

- Facebow: Metal arch that attaches to the molars intraorally and connects to the straps.
- Straps/Headcap: External components applying directional force.
- Hooks/Elastics: For facemask or additional anchorage.



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## Parts of Headgear



1. Inner bow
2. Outer bow
3. Safety strap
4. Neck strap

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## Fitting and Adjusting

1. Correct placement of the facebow and straps is vital to ensure effective force direction.
2. Check and monitor for any soft tissue irritation, incorrect positioning, or damage.
3. Always follow the orthodontist's instructions regarding force application.



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## Patient Instructions

Orthodontic therapists should educate patients on:

- How to wear and remove the headgear safely.
- Wearing schedule – typically 12–14 hours/day for effectiveness.
- Care and hygiene – cleaning facebow and checking straps.
- Importance of compliance – lack of use can delay treatment.
- Safety precautions – never run or play sports while wearing headgear.

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### Therapist Should:

- Check for progress and comfort at follow-ups.
  - Consider use of a diary record
- Look for signs of damage to appliances or teeth.
- Report any issues to the orthodontist, such as lack of wear or soft tissue problems.

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### Contraindications and Considerations

- Not suitable for non-compliant patients or those with temporomandibular joint (TMJ) issues.
- Ensure growth potential is still present in skeletal correction cases.

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### Safety Protocols

- Ensuring patient safety is paramount when using headgear. The BOS advises that all headgear should incorporate two independent safety mechanisms:
  - Anti-recoil devices: These are designed to disengage under excessive force, preventing potential injuries.
  - Locking mechanisms: These prevent accidental detachment of the facebow from the molar tubes.
- Orthodontists are responsible for selecting appropriate safety features tailored to each patient's needs .

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### Summary

- Orthodontic headgear is a device used orthodontic treatment
- It's primarily for children and adolescents
- It is designed to correct bite and jaw alignment issues
- Orthodontic Therapists—as well as physical, occupational, or speech-language therapists—understanding orthodontic headgear can enhance interdisciplinary care, particularly when working with patients with craniofacial anomalies, developmental disorders, or speech and feeding issues.

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### MCQ

Which of the following is not an indication for orthodontic headgear?

A. Correction of Class II malocclusion  
 B. Maxillary protraction  
 C. Reinforcement of anchorage  
 D. Retraction of mandibular incisors

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### Answer

Which of the following is not an indication for orthodontic headgear?

A. Correction of Class II malocclusion  
 B. Maxillary protraction  
 C. Reinforcement of anchorage  
 D. Retraction of mandibular incisors

Answer: D  
 Headgear does not retract mandibular incisors

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**MCQ**

Which safety mechanism helps prevent eye injuries in orthodontic headgear use?

- A. Elastic ligatures
- B. Expansion screw
- C. Anti-recoil spring
- D. Palatal arch

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**Answer**

Which safety mechanism helps prevent eye injuries in orthodontic headgear use?

- A. Elastic ligatures
- B. Expansion screw
- C. Anti-recoil spring
- D. Palatal arch

Answer: C

Anti-recoil springs prevent sudden snapback injuries

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**MCQ**

For maximum orthopedic effect, headgear is ideally worn:

- A. During school hours
- B. 6 hours per day
- C. 12–14 hours per day
- D. 1 hour before appointments

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**Answer**

• For maximum orthopedic effect, headgear is ideally worn:

- A. During school hours
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- D. 1 hour before appointments

Answer: C

12–14 hours/day typically recommended for effective orthopedic change

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**Short Answer Questions**

- List three clinical indications for the use of orthodontic headgear.

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**Answer**

- List three clinical indications for the use of orthodontic headgear.

- Correction of Class II Division 1 malocclusion in growing patients
- Distal movement of maxillary molars (anchorage control)
- Restriction of maxillary forward growth in skeletal discrepancies

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### Short Answer Questions

- Describe the mechanism of action of cervical-pull headgear.

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### Answer

- Describe the mechanism of action of cervical-pull headgear.
  - Applies a backward and downward force on the maxilla and maxillary molars
  - Restrains forward growth of the maxilla
  - Distalizes molars to aid in Class II correction
  - Acts primarily through extraoral traction connected to molar bands via a facebow

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### Short Answer Questions

- What are two key safety features that should be incorporated into modern headgear design?

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### Answer

What are two key safety features that should be incorporated into modern headgear design?

- Anti-recoil spring mechanisms to prevent rebound injury (especially to eyes)
- Safety release modules (breakaway straps) that detach under excessive tension

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### Short Answer Questions

- Explain how headgear contributes to anchorage reinforcement during orthodontic treatment.

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### Answer

Explain how headgear contributes to anchorage reinforcement.

- It resists mesial movement of posterior teeth during retraction of anterior teeth
- Provides extraoral anchorage that reduces the load on intraoral anchorage units
- Especially helpful in extraction cases needing strong posterior anchorage

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### Short Answer Questions

- Outline the consent process required before fitting orthodontic headgear to a child.

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### Answer

Outline the consent process required before fitting orthodontic headgear to a child.

- Explain purpose and mechanism of headgear
- Discuss daily wear time and compliance importance
- Highlight risks (e.g., eye injury, discomfort, social implications)
- Offer alternative treatments
- Obtain signed parental consent and document the discussion in clinical notes

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### Oral Questions

A 12-year-old patient presents with a Class II Division 1 malocclusion. You plan to use headgear as part of the treatment.

- a. What type of headgear would be most appropriate in this case and why?
- b. What advice would you give to the patient and parents regarding usage and safety?
- c. What are the possible complications and how would you mitigate them?

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