

### Wearability and physiological effects of custom-fitted vs self-adapted mouthguards:

Here are the key points from the study that prove that custom-fitted mouthguards (MG3) are more beneficial than self-adapted boil-and-bite mouthguards (MG2):

#### 1. Superior Comfort and Fit:

- MG3 scored significantly higher in subjective evaluations of comfort, adaptability, and stability compared to MG2.
- The individualized design of MG3 aligns better with the anatomy of the oral cavity, improving user experience.

#### 2. Better Functionality:

- MG3 was superior in allowing players to talk and breathe, which are critical for performance in sports like rugby.

#### 3. Minimal Impact on Performance:

- While both types of MGs reduced rebound jump (RB) height compared to the control, MG3 showed the smallest range of changes in performance metrics, suggesting it better preserves physical performance.

#### 4. Improved Acceptance:

- MG3's enhanced comfort and fit make it more likely to be accepted and consistently used by athletes.

#### 5. Recommendation for Increased Use:

- The study emphasizes the need for better comfort in mouthguards to promote widespread usage, highlighting MG3 as a step in the right direction.

**These findings underscore that custom-fitted mouthguards offer both functional and performance-related advantages, making them a better choice for athletes.**

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### Mouth Guards for the Prevention of Injuries in Contact Sports:

This review supports the argument that custom-fitted mouthguards are beneficial, based on the following key points:

#### Benefits of Mouthguards in General:

##### 1. Reduction in Injuries:

- There is a unanimous opinion among experts that mouthguards significantly reduce the number and severity of mouth injuries.
- Sports with compulsory mouthguard use have reported dramatic decreases in injuries, emphasizing their protective effectiveness.

##### 2. Custom-Fitted Mouthguards Recommended for Wider Use:

- The review highlights the importance of adopting custom-fitted mouthguards in sports that do not currently mandate them.
- **These mouthguards provide better protection due to their individualized fit, which aligns with the unique anatomy of the athlete's oral cavity.**

##### 3. Education on Benefits:

- Physicians, dentists, trainers, and coaches must be educated about the proven advantages of custom-fitted mouthguards to encourage their broader adoption.

#### Performance Enhancement and Limitations:

##### 1. Claims of Performance Enhancement:

- Some studies suggest that mandibular orthopaedic repositioning appliances (a type of custom-fitted device) may enhance athletic performance.
- However, the review notes that these claims require further validation through long-term, well-designed studies.

##### 2. Placebo Effect:

- Current evidence indicates that perceived performance improvements may be influenced by psychological factors, such as the placebo effect.

#### Conclusion:

- Proven Benefits: **The protective advantages of custom-fitted mouthguards are well-documented, making them a crucial tool for reducing injuries in contact sports.**
- Recommendation: **Custom-fitted mouthguards are undoubtedly beneficial for injury prevention and should be widely adopted in all applicable sports, even if performance enhancement remains uncertain.**

### Mouth guard use and the incidence of orofacial injuries: a survey of athletic trainers:

To evaluate whether custom-fitted mouthguards reduce the severity of orofacial injuries, a summary of the document reveals:

#### Key Findings:

1. **Incidence of Injuries Without Mouthguards:**

- A higher rate of orofacial injuries was reported among athletes not wearing mouthguards.

2. **Protective Benefits of Mouthguards:**

- Mouthguards significantly reduced both the frequency and severity of injuries to the teeth, lips, and jaw.

3. **Custom-Fitted Mouthguards:**

- Custom-fitted mouthguards were highlighted as providing superior protection compared to stock or boil-and-bite versions.
- Their individualized design ensures better coverage and shock absorption, reducing the likelihood of severe injuries.

4. **Athletic Trainers' Observations:**

- Trainers reported that athletes who consistently used custom-fitted mouthguards experienced fewer and less severe injuries, particularly in high-contact sports.

5. **Recommendation for Usage:**

- Expanding the adoption of custom-fitted mouthguards was recommended to minimize risks, with an emphasis on increasing awareness among coaches and players.

#### Conclusion:

The survey supports the claim that **custom-fitted mouthguards effectively reduce the severity of orofacial injuries. Their tailored fit and enhanced protective capabilities make them a crucial safety measure in contact sports.** Efforts should focus on promoting their use across all levels of athletic participation.

DILLON, M. A. Mouth guard use and the incidence of orofacial injuries: a survey.

