

## Orthodontic Treatment Strategies for Malocclusion in the Growing Age

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### DESCRIPTION

Malocclusion, defined as an improper relationship between the teeth, jaws, or both, is one of the most common developmental dental problems affecting children and adolescents. It can manifest as crowding, spacing, crossbite, overbite, underbite, or open bite and may arise from genetic factors, environmental influences, or harmful oral habits such as thumb sucking, mouth breathing, or prolonged pacifier use. If left untreated, malocclusion can negatively affect facial aesthetics, oral function, speech, periodontal health and psychosocial well-being. Orthodontic management during childhood and adolescence plays a major role in guiding normal craniofacial growth and preventing more complex dental problems in adulthood.

Early identification of malocclusion is a cornerstone of effective orthodontic care. The mixed dentition period, typically between 6 and 12 years of age, offers a unique opportunity for interceptive orthodontics. During this stage, both primary and permanent teeth are present, allowing orthodontists to influence jaw growth and tooth eruption patterns. Regular dental check-ups enable early diagnosis of developing malocclusions, skeletal discrepancies, or abnormal oral habits. Timely intervention can reduce the severity of malocclusion, simplify future treatment and in some cases eliminate the need for extensive orthodontic therapy later.

Orthodontic management in children often focuses on growth modification and habit correction. Functional appliances, such as activators or twin blocks, are commonly used in growing patients to correct skeletal discrepancies like Class II or Class III malocclusions by modifying jaw growth. Similarly, palatal expanders are effective in treating transverse maxillary deficiencies and posterior crossbites by widening the upper jaw while the sutures are still responsive. Addressing deleterious habits through appliances or behavioral guidance is equally important, as habits like tongue thrusting or thumb sucking can perpetuate or worsen malocclusion if not corrected early.

In adolescents, orthodontic treatment primarily targets dental alignment and occlusal correction, as most facial growth is nearing completion. Fixed orthodontic appliances, commonly known as braces, remain the most widely used modality for

managing malocclusion in this age group. Braces apply controlled forces to move teeth into their correct positions, improving both function and appearance. Advances in orthodontic technology have introduced options such as ceramic braces and self-ligating systems, which enhance aesthetics and comfort, making treatment more acceptable to image-conscious adolescents.

Clear aligner therapy has also gained popularity among adolescents with mild to moderate malocclusions. These removable, transparent aligners offer improved aesthetics and ease of oral hygiene maintenance compared to traditional braces. However, patient compliance is critical for their success, as aligners must be worn for the recommended number of hours each day. The orthodontist's role includes careful case selection and continuous monitoring to ensure optimal outcomes with aligner-based treatment.

A comprehensive orthodontic treatment plan considers not only dental alignment but also facial harmony, periodontal health and long-term stability. Diagnostic tools such as dental casts, radiographs and photographs help in assessing the type and severity of malocclusion. Treatment planning is individualized, taking into account the child's growth potential, dental development and psychosocial needs. Parental involvement and patient motivation significantly influence treatment success, especially in younger patients who rely on guidance and encouragement to maintain appliance care and oral hygiene.

Retention is an essential phase of orthodontic management in both children and adolescents. After active treatment, retainers are used to maintain the corrected tooth positions and allow the surrounding bone and soft tissues to stabilize. Failure to adhere to retention protocols can lead to relapse, undoing the benefits of orthodontic therapy. Educating patients and parents about the importance of retention is therefore a vital part of long-term care.

### CONCLUSION

In conclusion, orthodontic management of malocclusion in children and adolescents is a dynamic and multifaceted process that aims to achieve functional efficiency, facial balance and

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psychological well-being. Early diagnosis, timely intervention and age-appropriate treatment strategies can significantly improve outcomes and reduce the complexity of future dental care. With advancements in orthodontic techniques and

increased awareness, effective management of malocclusion during the growing years can provide lasting benefits that extend well into adulthood.