

Risk and Protective Factors for Malocclusion

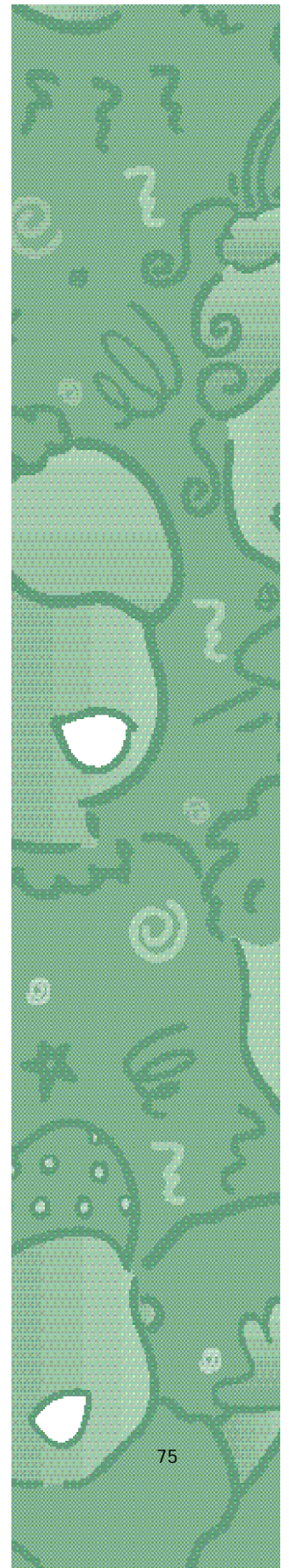
The complexity of genetic and environmental contributions to malocclusion and the lack of research on effectiveness of early interventions make risk assessment for malocclusion difficult. Premature loss of primary teeth remains a strong risk factor for malocclusion because the loss of space for permanent successors often leads to overcrowding. Children with congenital conditions affecting the head and neck should be considered at risk for malocclusion that may require treatment. A child who continues a frequent, intense sucking habit, especially after the permanent teeth erupt, increases the risk of malocclusion. A child may inherit the malocclusive patterns of parents, but such risk—and the need for treatment—is difficult to quantify. Children who have had a major malocclusion corrected orthodontically should be considered at risk for recurrence (relapse) unless they continue wearing maintenance devices as recommended.

The most important protective factors for malocclusion are those that prevent tooth injury and loss: car safety seats, safety belts, mouth guards, and other child-safety measures.



Malocclusion

RISK FACTORS	PROTECTIVE FACTORS
Physical: Examples	
Congenital absence of teeth	Early intervention
Mouthbreathing	Management of mouthbreathing
Variations in development (e.g., tooth eruption delays and malpositioned teeth)	Early intervention
Muscular imbalances	Early therapy
Familial tendency for malocclusion	Early intervention
Conditions associated with malocclusion (e.g., cleft lip/palate)	Early intervention
Behavioral: Examples	
Nonnutritive sucking habits	Elimination of habit
Disease or Treatment Related: Examples	
Injury	Use of age-appropriate safety measures (e.g., car safety seats, safety belts, stair gates, mouth guards) and treatment of injury
Acquired problem from systemic condition or its therapy	Dental intervention as a part of medical care
Loss of space due to caries	Early intervention for caries
Musculoskeletal conditions (e.g., cerebral palsy)	Dental intervention as a part of medical care
Skeletal growth disorders (e.g., renal disease)	Dental intervention as a part of medical care





Risk and Protective Factors for Injury

As children become more active, their risk of oral injury increases. Crawling babies may come into contact with electrical cords, sockets, or caustic agents. Toddlers in baby walkers risk falling down stairwells. Learning to walk brings risk of trauma to the primary teeth. When children begin to use mobile toys or bicycles, play at parks and playgrounds, or participate in sports, they increase their risk for injury. All children are at risk while being transported in motor vehicles, and adolescents experience additional risks as they and their friends begin to drive.

Protective factors can reduce much of this risk. Child-safety measures such as stair gates and socket covers are critical during early years. Baby walkers are not safe and should not be used. For older children, using bike helmets and protective mouth and face gear when playing sports is strongly recommended. All children need to be secured with a safety seat or a safety belt while riding in cars.

Risk for neglect and abuse is more difficult to assess, but children who come in with injuries should be screened for the warning signs of abuse and neglect. Children receive normal bumps and bruises on their foreheads, chins, hands, feet, elbows, and knees. Injury to the face, lips, mouth, neck, nose, ankles, or wrists is less common and may signal abuse. Repeated injuries, multiple bruises (often in various stages of healing), injury inconsistent with developmental age, or unexplained injuries may also signal abuse.

Along with the child's medical history, general physical assessment, and the oral exam, it is necessary to observe parent-child interaction. Child abuse is usually inflicted by a family member and is associated with substance use, economic stress, and lack of a family support network. Abused or neglected children may be extremely withdrawn, apprehensive, or fearful of an oral exam (though some shyness and anxiety may also be age appropriate). Alternatively, some abused children are extremely eager to please.

The Prevent Abuse and Neglect through Dental Awareness Coalition (P.A.N.D.A.) suggests the following steps when trying to assess risk for abuse:

- Obtain a separate history of the injuries from the child and the parent.
- Determine whether any discrepancies exist in how and when the injuries occurred.
- Determine whether the injuries are consistent with the explanations.
- Document any discrepancies, as well as your professional opinion that the physical findings are inconsistent with the history provided.²

It is advisable to consult with the child's health professional to discuss the concerns before filing a report of child abuse or neglect.

To protect against neglect and abuse, parents can be helped in their efforts to develop a range of support systems, from health to economic, to ensure that stresses are not taken out on children. Health and dental professionals may need to become an active part of these support systems. The only other way to protect children is to recognize signs of child abuse and neglect and report it. In all states, health and dental professionals have a legal as well as moral obligation to report suspected abuse.

Injury

RISK FACTORS	PROTECTIVE FACTORS
Physical: Examples	
Lack of protective reflexes	Referral for appropriate therapy
Poor coordination	Referral for appropriate therapy
Protruding front teeth	Orthodontic care
Behavioral: Examples	
Failure to use safety measures appropriate for infant/child/adolescent (e.g., car safety seats, stair gates, mouth guards, safety belts)	Use of age-appropriate safety measures
Participation in contact sports	Use of protective gear
Socioenvironmental: Examples	
Substance abuse in family	Referral for counseling
Substance use by child or adolescent	Referral for counseling
Child abuse or neglect	Referral for counseling
Multiple family problems	Referral for counseling
Disease or Treatment Related: Examples	
Overmedication	Adjustment of medications
Hyperactivity	Management of condition



Endnotes: Risk Assessment

¹ Tinanoff N. 1995. Dental caries risk assessment and prevention. *Dental Clinics of North America* 39(4):709-719.

² Mouden LD, Lowe JW, Dixit UB. 1994. How to recognize situations that suggest abuse/neglect [Special update]. *Missouri Dental Journal*.





