

Bad Oral Habits – Leading To Malocclusion – A Review

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Abstract

The general oral habits involve the learned pattern of muscular contraction and can lead to malocclusion. The result of malocclusion is aesthetic and functional impairment which may result in bad chewing, speech and swallowing leading to worsening of quality of life. These habits might be thumb sucking, tongue thrusting, mouth breathing, nail biting, bruxism events. Such habits can lead to destruction of dent alveolar structure. This review aims to understand the etiology and effect behind the development of these oral habits to combat the problem from the root.

Keywords: Oral habits, thumb sucking, tongue thrusting, mouth breathing, and nail biting, bruxism.

Introduction

Different body parts have definite role in human body and his personality. One of the most important parts is the facial expression of which teeth are important and play key role in our physical health and bodily function. They help to chew food properly so that it can be easily digested and absorbed by our bodies, enable speech and correct pronunciation of words, and enhance our facial structures.[1]

Oral habits play significant role in muscular balance and bone growth, producing changes in dental arch, interfering with normal growth of jaws, function of orofacial musculature and temporomandibular dysfunction.[2,3,4] Finn (1988) separated oral habits into two broad categories ; acquired which include a learned behaviour that can be stopped easily as the child grows older and start with other habits whereas the compulsive is a behaviour in children that is hard to lose but if child continues to be pressured with stoping the bad habit , it will make the child anxious and worried.

On the basis of nature of complexity, the oral habits are physiological such as nasal breathing, chewing , phonoarticulation and swallowing and non-physiological habits which are often called harmful or parafunctional such as thumb sucking, mouth breathing, tongue thrusting, use of pacifier, bruxism, nail biting and bottle feeding.[5,6,7,8]

Occlusion is the relationship among all the components of masticatory system in the function and parafunction, whereas occlusion that is aesthetically and functionally not acceptable is

referred to as malocclusion [9] or in other words defined as an irregularity of the teeth or mal relationship of the dental arches beyond the range of what is accepted as normal.[10] It is a rather developmental disturbance than a disease.[11]

The term malocclusion was coined by Edwin Angle, the father of Orthodontics as a derivative of occlusion, which refers to manner in which opposing teeth meet). Moyers (1988) classified the etiologies of malocclusion into six categories: hereditary, developmental causes of unknown origin, trauma, physical agent, habit, disease and malnutrition; whereas Profit [12] classified the etiology of malocclusion into three categories which are due to specific causes of malocclusion, environmental influences and genetic influences.

Malocclusion is a development disorder of maxillofacial system that results from genetic and environmental factors and effect the jaws, tongue and facial soft tissue[13] and can be characterized as an impediment in which there is strange relationship in a vertical , level or transverse measurement or irregular or abnormal relationship between the teeth when upper and lower jaws occlude.[14] It is frequently found irrespective of geographical area , ethnic group, gender, age or social classes.[15]

Parents play important role in developing healthy oral habits in children. [16] They provide proper preventive measures to children only if they have a good knowledge of dental diseases and their prevention. [17]

Considerate the etiology and effects of various oral habits at early stage may be helpful to prevent future severe skeletal malocclusion. This review deals with the aspects of thumb sucking, tongue thrusting, mouth breathing, nail biting and bruxism. The various oral habits have been dealt with in detail in the following parts of the review.

Thumb Sucking

Thumb sucking is the oral habit in which child places his/her thumb in varying depths into the oral cavity. The prevalence of thumb sucking is decreased as age increases and mostly stopped by 4 years of age. [18,19,20] However, persistent sucking habits may result in long term problem and can affect the somatogenetic system, leading to an imbalance between external and internal muscle forces.[21,22,23] Those who suck for more than six hours a day often develop significant malocclusion.[24]

Thumb sucking categorized into two; Active, include a heavy force by the muscles during the sucking and this habit continues for a long period, the position of permanent teeth and shape of mandible will be affected [21] whereas Passive, the infant puts his/her finger in mouth but because there is no force on teeth and mandible, and not associated with skeletal changes. [25]

The non nutritive sucking habits are associated with the growth of malocclusion in primary dentition. [26,27,28,29] The result of thumb sucking habit are anterior open bite, increased over jet, posterior cross bite, compensatory tongue thrust , temporomandibular joint disorder , speech and finger defects.[25,30,31,32,33,34,35]

Tongue Thrusting

The tongue is essential for several bodily functions, including swallowing, breathing, speaking and chewing. Deglutition or swallowing is the act of moving food from the mouth to stomach via pharynx and oesophagus. Tongue thrust is described as forward positioning of the tongue tip during deglutition and in hints of discourse with the goal that the tongue becomes interdental.[36] It is also known as visceral swallowing or infantile swallowing, plays a significant role in the etiology of some orofacial deformities.[37] The etiology of tongue thrusting includes bottle feeding improperly and thumb sucking prolonged. It has been associated to posterior crossbite, open bite and excess overjet in terms of malocclusion.[38] These behaviour interfere with the muscle balance and bone development, resulting in alternation of the dental arch and occlusal features.[39,40]

The manifestation of tongue thrust are facial grimace, mouth breathing due to allergic or enlarged tonsils and adenoids , open bite, difficulty with speech especially in “s” and “c” sounds, open mouth position with a forward tongue posture is noted during the rest.[41,42]

Mouth Breathing

The oral cavity performs various physiological functions which include respiration, swallowing, sucking, mastication and speech. [43] The abnormal growth and development of bony and soft tissues structures of craniofacial complex occur due to the disturbance of physiological function. [44]

Nose breathing is normal but mouth breathing is abnormal breathing with significant effect on oxygen.[43] The impacts of mouth breathing is characterized by presence of long and narrow face, narrow nose and nasal passage , short and flaccid upper lip, an expressionless or blank face and anterior open bite can occur.[45]

Sim and Finn (1987) classified mouth breathing into three broad categories: “OBSTRUCTIVE” children have an increased resistance to or a complete obstruction of normal flow of air through the nasal passage, “HABITUAL” mouth breather is a child who continuously breath through the mouth by force of habit, although the abnormal obstruction has been removed and “ANATOMICAL” mouth breather is the one whose short upper lip does not permit closure without undue effort.

Nail Biting

Nail biting or onychophagia is untreated common problem among the children which starts after 3 to 4 years age and peak in 10 years. [46] It is not gender dependent in children less than 10 years of age but its frequency in boys is more than girls among adolescents.[46]

Nail biting may be due to psychological disorder such as depression, stress or anxiety in children and adolescents. [47]A significant relationship was observed between severity of anxiety and nail biting. [48, 49, 50, 51]

Nail biting children are at risk of developing malocclusion of the anterior teeth, apical root resorption, intestinal parasitic infection, change of oral carriage of Enterobacteriaceae, bacterial infection and alveolar destruction, temporomandibular joint pain and dysfunction. [52, 53, 54, 51]

This habit is risky for people with crowns or veneers because of the other layer porcelain can be broken easily. [55]

Bruxism

Bruxism is a para functional habit that can affect children and adults and described as a orofacial motor function leading to occlusal trauma , fractures of teeth, headache, muscle pain and periodontal problem.[56,57] The causes of its is still unclear.[58] The common side effects of bruxism are the craniofacial and temporomandibular disorders, pain and hypertrophy of masticatory muscles, gum recession and inflammation, headache, respiratory problems, tooth wear and individual life quality. [59, 60, 61, 62]

Various factors like stress, personality characteristics, smoking, disease, alcohol, caffeine consumption may be involved in its etiology. [63, 57]

Conclusion

During childhood, a series of habits and behaviour are created that will significantly influence the health of an individual. This is an important stage to form healthy attitude and lifestyles. In this article the etiology of oral habits and effects on the development of malocclusion have been reviewed. It is important to intercept and prevent these deleterious oral habits in children at an early stage for the good oral health.

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