Masticatory Function Abnormalities Resulting From Sleep Bruxism in Children

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Introduction

- Teeth grinding and clenching are signs of Sleep Bruxism.
- About 14-20% of reported cases of Sleep Bruxism in children 11 years or younger
- Abnormal Activities contribute to. developmental issues in the masticatory functions in juveniles.
- Daily screen times can also contribute to Sleep Bruxism with a study of 556 children ages 7-8 showed that 15.8% of those developed symptoms of sleep bruxism.

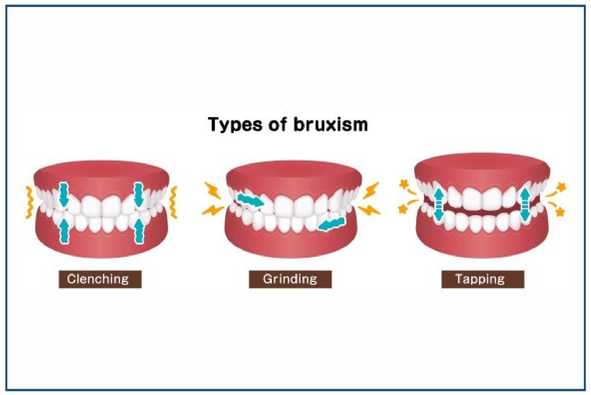

Figure 1. Three different symptoms of sleep bruxism with clenching, grinding and tapping of the teeth.

Sleep Bruxism

- Children are more likely to develop Sleep Bruxism as early as age 4.
- Children have a 5% higher rate of developing bruxism vs adults.
- Numerous risk factors that are associated with sleep bruxism.
- Masticatory Function is significant in teeth development in children, with sleep bruxism this can cause future health risk in abnormal or weak structured teeth.
- Dysfunctional masticatory function can lead to an increase in tooth wear.

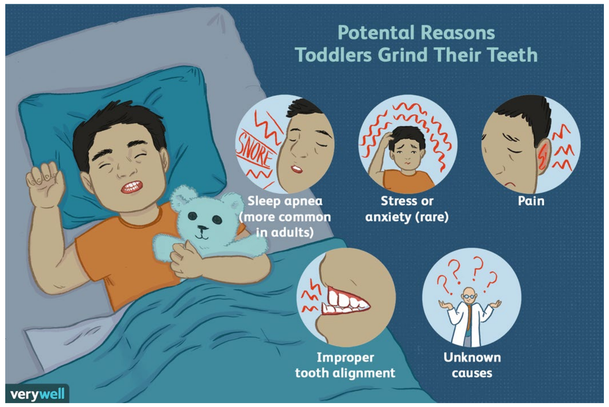

Figure 2. Different factors that are associated with sleep bruxism that would contribute to a child experiencing sleep bruxism.

Neurological Development

- As children are growing, their neurological development is also growing which can lead to early developments of Sleep Bruxism.
- Some neurological developments that would contribute to sleep bruxism is stress and anxiety.
- Children anxiety symptoms are often different then adults as they tend to change with different stages of development which would be hard to diagnose.
- Anxiety in children is a common clinical occurrence with about 10.6-24% in the clinical population.
- Clinical diagnoses will help determine whether a child is experiencing sleep bruxism or not from anxiety.

Figure 3. Different stages of development of the brain in juveniles. Children develop at a quick pace, so their neurological developments are constantly changing which can contribute to sleep bruxism.

Temporomandibular Dysfunction

- Temporomandibular dysfunction is related to masticatory functions.
- Abnormalities in the Temporomandibular dysfunction (TMD) contributes to sleep bruxism. Such as rhythmic masticatory muscle activity.
- Children with Sleep Bruxism are 3 times more likely to develop TMD.
- Untreated sleep bruxism symptoms will lead to TMD.

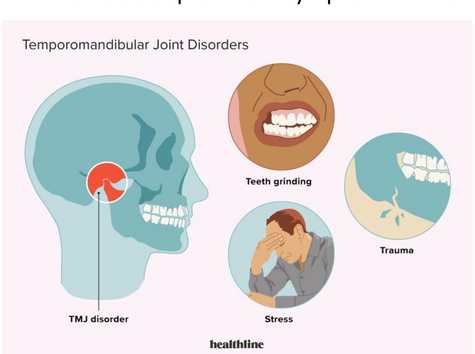

Figure 4. Shows the temporomandibular joints that are associated with the temporomandibular dysfunction. This would cause discomfort in the jaw areas and would contribute to sleep bruxism.

Medical Treatments

- Limited treatments are available.
- Light emitting diode treatments are available to children to help relieve muscle tissues around the masticatory areas.
- Hydroxyzine medical treatments are in use to help relieve anxiety.

Figure 5. Daily activities that can help reduce the potential experience in sleep bruxism. Some activities can help relieve stress or have a decrease in anxiety which can help decrease the potential to experience sleep bruxism.

Conclusions

- TMD plays a key role in developing bruxism
- Neurological development has been the main contributor to sleep bruxism with stress and anxiety as the main symptoms.
- Children with bruxism are more likely to develop anxiety.

References:

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