

## The Difficulties of Dental Treatment in ADHD Children

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Hyperactivity is also abbreviated as ADHD which is a common disorder that affects about 5% to 7% of children [1]. The disease is more common in boys than in girls [2], which the causes are still unclear. The initial characteristics of hyperactivity begin from the early years of growth, before entering school [3]. It is a disorder that all dental health care workers who work for young children might face that.

This disease has been known for many years and has several factors contributing to its development [4,5]. It seems that its cause is most of a defect in the development of the nervous system. Hyperactive children are likely to have partial defects in the parts of the brain where is responsible for attention, concentration, and regulation of motor activity.

Heredity and genetics play a role in this disorder. While some studies do not exclude the importance of environmental factors, they believe that in most cases the genetic factors may play an important role [6]. Also, in some cases during pregnancy or childbirth, or afterward, partial damage to the brain's structure can occur, which can cause this problem.

Children with ADHD abnormalities are usually hard to able to focus on, and it is not easy for them to make decisions like other children. With difficulty, they can show the right behavior because they speak continuously and can hardly be silent and move around. They make decisions very quickly (they act on impulses without thought) are hesitant in making decisions, and they can hardly focus on what they are doing (they are wacky).

Hyperactivity is part of the symptoms of autism [7]. Many ADHD children have high IQs those professionals and experts can help children's future by controlling children's behaviors.

This article introduces the main dental and oral problems of these children; provide the essential information and guidance for parents.

### Hyperactivity symptoms

Signs and symptoms of hyperactivity in each child develop differently, but in general, the following are seen in people with it [8]:

- Forgetfulness, distraction, and daydreaming
- Lack of effective listening and trouble in navigation
- Prone to grouching due to fear
- Problems in arrangement and completing his tasks and assignments
- The problem of using social skills and Lack of understanding of non-verbal communication
- Being talkative and talk without thinking
- Dangerous games and extreme physical activity
- Acting Thoughtless and not paying attention to the consequences of such sudden actions
- The problem of waiting to get their turns

- Easily confused and distracted
- Having Problem in sitting, restlessness
- Disturbing talking and playing with others
- Trouble following instructions and pretending not to listen.

### Specific dental care considerations

Some parents who have ADHD children have a question in their mind about how to care for and treatment of hyperactive children? Children with various illnesses who have disorders of attention and problems in social activities and studies have more problems with their dental care. Parents who refer to a pediatric dentist would find that children with ADHD are weaker in their oral hygiene compare to their peers, therefore, need the help of parents.

If a parent has anxiety and stress about child's dental visits and his oral and dental tasks, it is the best for someone else or family member accompany the child to the dentist's office [9]. Parents are advised to talk to their child about regular dental visits. They should use words that are fully understood by the child. Parents should avoid using words such as blood, drills, injections, and needles [9,10]. In addition, using video books or stories can be helpful in reducing the concerns and events that are going to be finished in a dentist's office. In some children, the design and educational tools can be used at the first meeting [10,11].

The prevention of oral and dental problems in overactive children should be one of the main goals of appropriate treatment for the adoption of dental care by these children. Many children with hyperactivity disorder have difficulties in focusing on their dental oral hygiene and treating their teeth, hence, reducing the visual and auditory abnormalities would help these children [11].

For example, a radio should not be turned on in the room, and for reduction of the amount of noise, it is best the door to be closed. Furthermore, for the reduction of visual abnormalities, there should be fewer toys and books in the room.

For the treatment of ADHD children, it is better to provide information regarding the duration of the treatment, the treatment process, what would happen if no treatment is performed, and also who would be present in the room so the kid has some idea about what is going to be done. The pediatric dentist should give the child direct and objective guidance during the treatment of his teeth so that he can help him to focus and concentrate [10,11].

Hyperactive children for keeping good oral hygiene should be encouraged and praised, and they should be thanked if they were cooperative during dental visits and treatments. Parents should gently encourage their children to brush their teeth; they can even brush their teeth with them at the same time. [12] The child should be taken to the pediatric dentistry to get acquainted with the dental environment; and also her teeth to be examined for decays [13].

It is likely that children with various types of ADHD will have more problems and have more dental care issues. There are reports of more behavioral control issues during dental care in ADHD patients and perhaps there will be more dental concerns. Children with ADHD behave like at a lower age compare to normal children in dentistry. According to the pediatric dentist, due to the oral health, dental caries researches have somewhat contradictory results. But overall, its risk seems to be increasing. Children with ADHD are weaker in terms of oral hygiene [13], which means consuming more junk foods and sweetened fluids and less tooth brushing.

Showing the educational images of tooth brushing to ADHD patients is very helpful [12]. Explain just only one method and repeat it several times for the patient. Showing different methods of tooth brushing would make the child confused. Use the tools and models to show how to brush their teeth. When teaching oral care, try to explain that very briefly. It is very important for parents of children with ADHD to receive both the information and training they need during the dentist's appointment [13]. They should be encouraged to con-

tinue their care at home [13]. The older the hyperactive child gets, the better he might obey his dentist advice. Remember that a child with ADHD needs adult support for all activities.

### A child's medical history of ADHD

The medical history should include specific questions, including the definitive diagnosis of ADHD, the use of medications, and time of use during the day. A very important point to note is that medications should be taken at the time of a dentist's appointment. Approximately 75% of the children, who have been diagnosed with ADHD, take medication [14].

ADHD drugs should be taken 30 to 60 minutes before the dentist's appointment [14]. At this time, the effect of the drug reaches its maximum and strengthens natural behaviors. There are significant drug effects that a professional dentist should know before treatment, including that all drugs used to treat ADHD have side effects.

Reduced sense of smell, sinusitis and sinus inflammation, decreased sense of taste, salivary glandular inflammation, inflammation of the mucous membrane of the mouth, gingivitis, inflammation of the tongue, tongue changes, bruxism, difficulty in swallowing, increased blood pressure and heart rate, which is the most important side effects in these patients that should be considered by the dentist.

If necessary, dentists can get help from the doctor or psychiatrist to control the symptoms of these patients so that eliminates any concerns that they and parents have about behavioral and therapeutic treatment. This is especially helpful in children who have symptoms associated with illness (depression, anxiety, and mental retardation). Recent studies indicate that there is a relationship between ADHD patients and dental anxiety.

### The relationship between fluoride intake and hyperactivity in children

A research conducted at the University of York in Canada has been scientifically demonstrated that in taking fluoride can be a risk factor for childhood ADHD [15]. This disease, which is one of the most common problems in the development of children, is a disorder in which hyperactivity, negligence, and sudden behaviors are seen more intense and more severe in ADHD children compare to other children.

The study also showed that in the geographic areas where more people use fluoride-containing fluids, the highest incidence rates in the 4 - 17 year - olds are reported in ADHD's children, and these statistics confirm the link between these two factors [15]. Although researchers believe more research needed to substantiate this allegation.

### Dental history of the ADHD patient

The history of complete dentistry should be taken in conjunction with the examination of the teeth. Drugs used, other medications, and modifying and elimination the side effects of medication are very important. Oral problems, the prevalence of certain oral and dental problems and special habits in children with this disorder are higher (Such as chewing nails, biting lips or other objects such as materials and self-help).

### Bruxism

The likelihood of bruxism at night or even during the day is higher in children with ADHD .[16]Tooth grinding is more likely seen in children who take the medication, even though they use CNS stimulant drugs, such as Amphetamines [17] and Methyl Phenidat (Ritalin) [18].

### Dyskinesia

Drugs that are prescribed for ADHD patients can cause overactive muscle activity [19]. The physician should prescribe proper and appropriate dosage for controlling and limiting annoying and discontinuous behaviors.

### Nutritional habits

Dentists should ask about the nutritional habits of children with ADHD. These questions should be about the number of feeds per day, the type of snacks, and drinks. Studies show that people with ADHD eat more than 5 times a day; as a result, this will increase the risk of dental caries.

### Local anesthesia

Local anesthesia should be taken with caution in children with ADHD because some anesthetics can respond to the medications that the patient receives.

### Additional recommendations for the dental team

- Plan the appointments. An appointment for patients, especially ADHD children, should be set early in the day and preferably in the early morning, approximately 60 to 30 minutes after the medication is taken.
- The appointment is very valuable in the morning because the patient is less tired, he or she has the most attention and concentration, therefore, he is able to sit on the chair for an hour and has more cooperation.
- Sometimes a child psychiatrist prefers an ADHD child does not receive a medication for some time. This time is called a "drug holiday". It is important for dentists to avoid dental care for the child during this period.
- If an extensive work needs to be done on the child's teeth, the patient should be prepared for more than one appointment. The dentist must inform the parents that it is necessary to attend a few sessions in his dental office.
- If there are symptoms of gingival infection and Xerostomia, the dentist should remind and emphasize the following session, and the next appointments to the parents.

### Final words

Dental care for patients with ADHD should be accompanied with more compassion. Dentists know that ADHD is a series of problems requiring long-term planning. We as dentists should learn how to provide the best dental care to patients with specific needs in the best conditions.

Dentists should not misunderstand the lack of attention of the patient, his hyperactivity, poor oral hygiene, and health as a sign of his disregard, but they should be seen as signs and symptoms of their illness.

The oral and dental condition of these children needs special attention. In many cases because of the limited knowledge of some families, these children are brought to the dentist with progressive gingivitis and advanced or sometimes untreatable caries which is too late.

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