

## Newly developed children's/kids' dental crown that grows along with the kids' teeth

Thanks to the prevention measures undertaken by the dentistry and enhanced dental hygiene, the formation of dental cavities with German children and adolescents is declining. However, Early Childhood Caries (ECC) has emerged as a growing issue in pedontology. But, caries is not the only disease leading to lesions on children's teeth. With increasing frequency, dentists diagnose faulty amelogenesis, the so-called molar-incisor-hypomineralization (MIH) - a disorder that affects the permanent incisors and molars.

Children affected with MIH show pasty and dull, blotchy, and falsely mineralized teeth for no particular reason. In consequence, their teeth may hurt when consuming warm or cold foods and drinks and they even are in danger of crumbling when chewing. So far, dentists can only speculate about the causes of MIH. According to a study published by the American Journal of Pathology, the chemical Bisphenol A (BPA), a component of most plastic, has shown to evoke the faulty mineralization of teeth in rats. These animal experiments cannot be transferred to humans without further ado, nonetheless, MIH-experts advise caution in using products containing BPA. Prof. Dr. Dr. Norbert Krämer, Gießen, recommends stopping to drink from plastic bottles completely. Because toxic substances from plastic wrappings could transfer directly into the food products, it is also advisable to discontinue consuming foods pre-packaged in plastic. Today, already more than 10% of German schoolchildren are suffering from the mysterious disorder. That is why it is crucial to attend dental check-ups on an early and regular basis. In many cases, it is sufficient to fill and/or seal the tooth affected by MIH. Teeth that are already severely damaged, can be provided with a dental crown. If children are in need of crowns, these crowns at



least should not lead to deuteropathy. Molar crowns, as they are available on the market at the moment, are made from NEM or zirconium dioxide and can lead to jaw joint problems.

**New treatment is patent pending** | Exactly this is where the newly developed kids' dental crown - the KidCadCrown - is employed. The vFM Dental Laboratory GmbH placed in Hamburg has filed a patent application for a procedure that manufactures kids' crowns in a way that has numerous advantages compared to conventional treatment methods: Long-established crowns are made from steel or zircon. The hardness grade of these materials does not suit the natural enamel. Denturist



Alexander von Fehrentheil, CEO of vFM Dental Laboratories GmbH explains: "In the long run, these materials can lead to a faulty weight bearing of the jaw joints which are still in growth. Aesthetic reasons also play a crucial role." Employees of vFM Dental Laboratories GmbH make crowns from biocompatible and ceramic-reinforced composite materials. KidCadCrowns are dental crowns for children that are milled with a loose fit and that are manufactured from high-performance bio ceramic composites. They concur with the degree of hardening of natural enamel and are brought into shape within the child's mouth. Next to the crown material, the concept also comprises a dual-hardening luting composite that does not require bonding or corroding. After the crown has been placed and the composite has fully hardened, the crown's walls can be thinned out to an extent that allows for the composite to burden the crown. The manufacturers explain that as the jaw grows, new crown material can be added. During the procedure, no acid is used within the children's mouth. On top of that, all crowns can be added in just one sitting. Using conventional digital casting of the child's jaw, dentists at vFM Dental Laboratory can select and order a perfectly fitting set of crowns for every customer. Sets of crowns can be mixed and matched individually according to form and color.

The Hamburg Dental Laboratory first introduced their KidCadCrowns at the 21st annual meeting of the German Association for Pediatric Dentistry (DGKiz) in Freiburg in September 2014.

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(This article features information from manufacturers concerning the products included.)

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