

# Systemic Diseases and their Impact on the Emergence of Dental Hard Tissues

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**Received:** May 23, 2023, Manuscript No. JGD-23-99738; **Editor assigned:** May 25, 2023, Pre QC No. JGD-23-99738 (PQ); **Reviewed:** June 8, 2023, QC No. JGD-23-99738; **Revised:** July 24, 2023, Manuscript No. JGD-23-99738 (R); **Published:** July 31, 2023, DOI: 10.35248/JGD.4.1.003

## Description

The human body is a complex system where various parts and organs are interconnected. It is well-known that systemic disorders can have a profound impact on the overall health of an individual. Among the different systems affected, the oral cavity and dental hard tissues are not exempted. Dental hard tissues, such as enamel and dentin, play a crucial role in maintaining oral health. However, systemic disorders can disrupt their development and structure, leading to various dental complications. In this article, we will explore some common systemic disorders and their influence on the development of dental hard tissues.

One of the most prevalent systemic disorders that affect dental hard tissues is dental fluorosis. Fluorosis occurs due to the excessive ingestion of fluoride during tooth development, which leads to enamel hypomineralization. The excessive presence of fluoride interferes with the normal process of enamel maturation, resulting in enamel that is porous, discolored, and prone to tooth decay. Dental fluorosis is often associated with the consumption of high fluoride water or excessive use of fluoride containing dental products during childhood.

Another systemic disorder that affects dental hard tissues is Amelogenesis Imperfecta (AI). AI is a genetic condition that affects enamel formation and results in enamel that is thin, pitted, or discolored. The abnormal development of enamel in AI can make teeth more susceptible to wear, erosion, and decay. Individuals

susceptible to wear, erosion, and decay. Individuals with AI often experience aesthetic and functional challenges, requiring extensive dental treatment to restore the appearance and function of their teeth.

Additionally, certain systemic disorders can impact dentin formation, the layer beneath the enamel. Dentinogenesis Imperfecta (DI) is an inherited disorder that affects dentin formation, leading to weak and discolored dentin. The abnormal dentin structure in DI can cause teeth to be prone to fracture and wear, and it may also affect the alignment and eruption of permanent teeth. Dental professionals often face challenges in treating individuals with DI due to the compromised structural integrity of dentin.

Furthermore, systemic disorders such as Osteogenesis Imperfecta (OI) can indirectly affect dental hard tissues. OI is a genetic disorder that affects the production of collagen, a vital component of connective tissues including dentin. Individuals with OI often have brittle bones and teeth due to the impaired collagen production. They may experience early tooth loss, misalignment, and increased susceptibility to dental caries. Dental management for individuals with OI requires a multidisciplinary approach to address both the skeletal and dental abnormalities.

Apart from genetic disorders, systemic conditions like celiac disease can also impact dental hard tissues. Celiac disease is an autoimmune disorder triggered by gluten ingestion. It can lead to malabsorption of essential nutrients, including calcium and vitamin D, which are vital for proper tooth development. The deficiency of these nutrients can result in delayed tooth eruption, enamel defects, and an increased risk of dental caries.

## Conclusion

In conclusion, systemic disorders have a significant influence on the development and structure of dental hard tissues. Dental fluorosis, amelogenesis imperfecta, dentinogenesis imperfecta, osteogenesis imperfecta, and celiac disease are just a few examples of systemic disorders that can affect the oral health of individuals. Understanding the relationship between systemic disorders and dental hard tissues is crucial for early detection, prevention, and appropriate management of dental complications. Dental professionals should collaborate with medical practitioners to provide comprehensive care for individuals with systemic disorders, ensuring optimal oral health and overall well-being.