

• three parts per million

The role of fluoride in caries prevention is a very important one. Indeed, one of the most significant contributions of world's free enterprise systems to the health of people is to market fluoridated toothpaste. Huge reductions in caries prevalence have been made in the populations of numerous countries where fluoridated toothpastes are used regularly.

One major reason for the decrease in decay rates is that, because low concentrations of fluoride are present in people's mouths, the use of fluoridated toothpaste is very effective in the remineralization of demineralized teeth. For example, more than ninety 90% of the toothpastes sold in the United States contain fluoride. This amounts to a massive public health undertaking by the private sector. The significant impact on decay rates demonstrates the importance of fluoride in caries prevention.

The mechanism of action for fluoride in caries abatement is shown in the following list:

- Increased resistance of the tooth structure to demineralization.
- Enhanced remineralization of early carious lesions.
- Impaired cariogenic activity of dental plaque, through disruption of bacterial metabolism and function.

The studies and surveys link fluorosis to three factors:

- Fluorosis is more common in geographic areas where the endemic levels of fluoride in the drinking water are higher than three parts per million
- Fluorosis is associated with fluoride supplementation at inappropriately high levels
- The use of fluoridated toothpaste has been implicated in fluorosis

Important: Excessive fluoride levels in drinking water are associated with fluorosis. Fluoride levels in excess of **three parts per million** begin to pose a risk for fluorosis. This has been demonstrated in numerous studies over decades of research and in various geographic settings around the world.

Remember: **Dentin Dysplasia** is another group of inherited dentin disorders resulting in characteristic features involving the circumpulpal dentin and root morphology. **Two types:**

- **Shields Type I:** normal primary and permanent crown morphology **and color**. The roots tend to be **short and sharply constricted**. Primary and permanent dentitions demonstrate **multiple radiolucencies and absent pulp chambers**.
- **Shields Type II:** primary teeth are **amber-colored** closely resembling dentinogenesis Type I and II. Permanent teeth are **normal** in appearance but radiographically demonstrate **thistle-tube-shaped pulp chambers** with multiple pulp stones. **No periapical radiolucencies are seen.**