



## Dietary Supplements

### Full Summary

#### **Description:**

Dietary fluoride supplements are available as drops, lozenges or tablets. Most supplements contain sodium fluoride (NaF) as the active ingredient.<sup>1</sup> The recommendations for use of fluoride supplements vary across the world.<sup>2</sup> In the United States (US) fluoride supplements are prescribed based on age and level of fluoride in the drinking water.<sup>3</sup> The Canadian Dental Association recommends supplements only for those children who had high caries experience and whose total intake of fluoride is below 0.05-0.07 milligrams of fluoride per kilogram of body weight.<sup>4</sup> European experts recommend 0.5 mg/day for at-risk individuals from the age of 3 years.<sup>5</sup> More recently in Australia researchers have concluded that fluoride supplements in the form of drops or tablets should not be used<sup>6</sup>, and European experts allow for consideration on a case by case basis.<sup>7</sup> Dietary fluoride supplements can be effective in preventing tooth decay, however, the cost of supplements, the lack of motivation, poor compliance and safety concerns have shown that community programs are not as successful as other fluoridation prevention programs.

#### **Use:**

In the US fluoride supplements are available only by prescription and the CDC recommends the use of supplements only children who live in non-fluoridated communities between the ages of 6 months to 16 years.<sup>3</sup> The amount prescribed is based on age and level of fluoride in the drinking water.<sup>8</sup> The dosage also depends on level of fluoride in drinking water, complete fluoride history with information on fluorides from all sources and level of benefit from the cavity protection that dietary supplements can provide. The available strengths for tablets and lozenges are 1.0, 0.5, and 0.25 mg of fluoride. In a systematic review of 20 reports on fluoride supplements, the benefit of caries reduction was 43%, the withdrawal rates was around 30%, and mild to moderate fluorosis was reported.<sup>2</sup> While studies have reported a decrease in dental caries with the use of fluoride supplements among children the caries prevention benefit is not very



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high.<sup>9</sup> This may be due to the widespread availability of fluoride (toothpaste, water), thus diluting the effect of fluoride supplements.

## **Effectiveness:**

Studies on effectiveness of fluoride supplements in children <6 years are reported to have flaws in study design such as self-selection of participants, lack of control groups, high attrition rates, and non-blinded examiners.<sup>10</sup> The use of fluoride supplements in young children has been a controversial discussion.<sup>11</sup> This is because the evidence for fluoride supplements when used from birth or soon after is weak.

## **Safety:**

A Supplements are a risk factor for dental fluorosis, and fluoride has little effect in the pre-eruptive phase of caries prevention. Also findings from studies so far suggest that some children exceed the "optimal" level of fluoride intake from a single source alone, while other children can exceed from a combination of sources.<sup>12</sup> Based on the evidence on safety and effectiveness researchers believe that the dosage schedule requires careful consideration.<sup>13</sup>



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