# WFPHA Positional Statement: Access to the optimal use of fluorides for oral health as a fundamental public health measure

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Oral diseases remain the most prevalent diseases and among the most expensive health conditions globally as a neglected epidemic[1]. Addressing this public health challenge, the World Health Organization (WHO) recently released the Global Oral Health Action Plan and expanded the Essential Medicine List to include Essential Dental Medicines (EDM), including preventive agents like silver diamine fluoride (SDF), glass ionomer cement (GI), and fluoride applications[1,2].

Fluoride's efficacy in preventing and managing dental caries is well-established through extensive scientific research[3-6]. As a naturally occurring element, fluoride prevents dental caries through two primary mechanisms: increasing tooth resistance to acid attacks from cariogenic bacteria and promoting remineralization of early carious lesions in tooth enamel[7,8].

Various fluoride administration routes exist, and effective caries control requires localized treatment protocols. Community water fluoridation emerged as an efficient delivery method, particularly benefiting populations with limited access to oral healthcare irrespective of age, gender, race, education, ethnicity, and employment status[6,9]. Historical evidence supports this approach: a study in 1942 across 21 US cities demonstrated caries prevention at approximately 1 ppm fluoride concentration[10], with subsequent research over 70 years confirming the efficacy and safety of community water fluoridation globally[11]. The WHO guideline value for fluoride in drinking water is less than or equal to 1.5 mg/l, with the optimal concentration in drinking water within the range of 0.5–1.0 mg/L to maximize dental health benefits while minimizing potential risks such as dental or skeletal fluorosis[6,12]. Fluoride concentrations higher than 1.5mg/L in drinking water can increase the risk of dental fluorosis, especially in hot climates where higher water consumption leads to increased fluoride intake[6,13].

The evolution of fluoride delivery methods reflects diverse community needs worldwide. Recent Cochrane research suggests that while water fluoridation showed clear benefits before 1975, its relative impact may have decreased due to widespread fluoride toothpaste availability[14]. Options now include salt fluoridation, fluoride toothpaste, professional applications (varnishes and gels), SDF for non-invasive caries management, and glass ionomer materials that release fluoride in resource-limited settings. However, method selection must consider context-specific factors: natural fluoride levels, population needs, healthcare access, and economic feasibility[15,16].

The World Federation of Public Health Associations (WFPHA) strongly advocates for optimal fluoride access as a fundamental public health measure. This position acknowledges both evidence-based recommendations and safety considerations. WHO's guidelines help communities balance caries prevention with adverse effect protection, incorporating water fluoridation among recommended delivery methods in its 2024 Global Oral Health Action Plan.

Our position is based on two key points:

1. Global oral health burden: Dental caries remains the most common disease in the world, and oral diseases disproportionately affect socially marginalized and vulnerable populations. At the same time, many countries and communities struggle with the shortage of oral health workforce[17].
2. Scientific Evidence: Decades of research support the safety

and effectiveness of fluoride at recommended levels. WHO has also published guidelines to help communities control fluoride exposures to establish the important balance between caries prevention and protection against adverse effects[6], and water fluoridation is listed as one of the fluoride delivery methods by WHO's recent Global Oral Health Action Plan[1].

WFPHA maintains its commitment to oral health equity through safe and cost-effective prevention. Aligning with WHO's vision of oral health for all, WFPHA supports developing comprehensive national guidelines for optimal fluoride use, considering local contexts, infrastructure, resources, and natural fluoride levels.

WFPHA asserts that access to optimal levels of fluoride is a basic public health right, crucial for achieving global oral health parity. As global oral health communities pursue universal access to optimal levels of fluoride through evidence-based policies and community-specific implementations, we can work toward eliminating preventable dental caries and contributing to health inequities.

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