

# Strong Tooth Medicine - Is it right for Nepal ?

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## INTRODUCTION

Nepal has a growing dental profession and training colleges are now being established in Kathmandu Valley and beyond. Nepali people are gaining greater access to care but is this enough? Can we do more to help educate our countrymen?

As one of the world's ten poorest nations with an annual per capita income of \$206 (UNDP, 1998) there are many claims on the purses of the health planners who have only \$6 per year available for each of the country's 24 million people. Nepal, like most developing countries, is presently engaged in a slow epidemiological transition from infectious diseases primarily affecting the respiratory and gastrointestinal systems to 'modern' afflictions such as coronary artery disease. Urbanization is gathering momentum in this predominantly agricultural land and predictions are that up to 20% of the population will live in urban clusters by 2001 compared with only 6.4% in 1981 (World Bank, 1982).

Access to 'instant comfort' foods (biscuits, sweets and fizzy drinks) is facilitated as a consequence of urbanization and is actively promoted as a health-related activity. In oral health DMFT levels usually rise (McDonald, 1996). With this looming problem it is important to state that the regular use of a fluoride toothpaste can reduce dental caries by half (Koch, 1967).

Most toothpaste in Nepal is unfluoridated. This is largely because fluoride is popularly associated with 'poison' in India and dental fluorosis is a serious issue in parts of that country because of high drinking water fluoride levels.

Fluoride-mapping studies of 20 Indian states indicate, overall, that 14.9% of ground water samples have more than the safe optimum 1.0mg/L available fluoride (WHO, 1999). Rajasthan has nearly one-half of its 780 samples in this category with a high of 22.0mg/L. Uttar Pradesh (bordering Nepal) shows a lower prevalence at 20.8% but with a substantial maximum of 15.0mg/L. The figures for Punjab are 30.1% and 11.7mg/L while adjacent Haryana has a staggering 56.2% of super-optimum samples and an upper extreme of 21.0mg/L. In a hot climate, as a result of increased hydration requirements, as little as 0.7mg/L Fluoride may be sufficient to significantly reduce dental caries.

Other Indian states, by contrast, such as Bihar, Maharashtra, Kerala and Madhya Pradesh have more than 95% of their water at or below the 1mg/L optimum with single figure maximums. Available WHO dental caries data for India is difficult to correlate with this fluoride information owing to insufficient detail on survey and sampling locations.

The United Mission to Nepal Oral Health Programme has carried out fluoride-mapping in Nepal and has found the picture to be markedly different from India. Our pilot study (McDonald and Cox, 1998) indicated that most water supplies had very low levels of available fluoride.

This has now been confirmed by the results of our 3-year nationwide study where only 2 samples in 600 had any anti-caries potential.

Nepal presently belongs to that fortunate group of countries with a 'low to very low' DMFT rating according to WHO Global Oral Data Bank information. Although there has never been a national oral health survey 12 year-old DMFT has been variously measured at 0.91 (Milsom *et al.*, 1997) and estimated at 0.6-1.9 (Helderman *et al.*, 1998). Two of our own recent studies in rural districts 190 kilometers apart confirm these 'ballpark' figures with DMFT scores of 0.89 and 1.12.

In a land which is fast transforming from a mountain-rural to a plains-urban society and where only an embryonic oral health care system exists it may be confidently predicted that the need for dental services will increase substantially over the next decade and beyond. A restorative solution to dental caries is only a small part of the answer. The larger part of our responsibility is to lobby local toothpaste companies with our 'safety' evidence about Nepal's drinking water fluoride levels and invite them to be progressive in producing and marketing affordable fluoridated paste. In this way a norm may become established where fluoride is synonymous with health in the public mind.

A domestic and few imported toothpaste companies currently have a very small market share of fluoridated paste mainly in the Capital. We now need a public awareness campaign to stimulate belief in this 'daat baliyo banaune aushadhi' (tooth strong-making medicine) and persuade village shopkeepers throughout the Kingdom of Nepal to stock it. Why don't we invite people to "Get Fluoridated toothpaste now"?

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