

characteristics of the mandible. A significant decrease ($p < 0.01$) has been observed in BMD values for the whole lumbar spine and femur as compared to the mandible. No remarkable changes in BMD of the mandible have been observed, thanks to adequate mechanical stimulation during mastication and the maintenance of occlusion.

The present study measured bone calcium (Ca), phosphorus (P) and fluoride (F) in the rat osteoporosis model. X-ray intensities of Ca, P and F in bone (mandible, lumbar spine, femur) were measured by X-ray fluorescence analysis (XRF, Rigaku RIX 3100). Fifty 14-week-old SPF female Wistar rats were used and divided into two equal groups: low-calcium diet (experimental) and normal diet (control). Rats were maintained on a given diet for 8 weeks. Subsequently, the mandible, lumbar spine, and femur were soaked in 10% formaline for one week, dried and crushed. X-ray intensities of Ca, P and F were measured by XRF. Significantly lower X-ray intensities of Ca, P and F ($P < 0.01$) in the lumbar spine and femur were observed in the experimental group. No significant differences in X-ray intensities of Ca, P and F in the mandible were noted between the experimental and control groups.

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Fluoride prevention of dental caries – current trends

A short presentation of progress in fluoride prevention of dental caries is made. Over the past 55 years, fluoride prevention has greatly contributed to the reduction in dental caries in many countries. The evolution of fluoride prevention programs has brought changes in indications, methods and fluoride preparations. Methods of fluoride prevention and fluoride preparations should be evaluated not only with regard to the effectiveness, safety and cost, but also to expectations and acceptance. Cost analysis is very important because of great differences between general and individual prevention methods, including office procedures increasingly accepted and widespread.

The type of fluoride prevention program has a firm influence on the results of dental epidemiological investigations performed in different countries and regions. A wide range of frequencies and intensities of dental caries, depending on the region, age, and effectiveness of preventive programs, is revealed.

The present results are helpful for the identification of children and youth at risk of caries. Interesting trends to vary the caries prevention program and respond to the degree of caries risk were observed in some countries. These programs are based on an individual approach using fluoride preparations. Relevant examples are discussed.

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