

The Influence of a Cereal-Free Diet Rich in Vitamin-D and Calcium on Dental Caries in Children

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May Mellanby C. Lee Pattison
Pharmacology Department, University of Sheffield, UK

The purpose of this investigation was to test the effect of a cereal-free diet, high in vitamin D, on the incidence and extension of dental caries in children. The children were under direct supervision in an institution where diets could be closely controlled.

The amount of fat in the diet was greater than in the controls, and the carbohydrate content was less. Instead of cereals (bread, oatmeal, rice, and tapioca), an "increased allowance of potatoes and other vegetables, milk, fat, meat, and eggs was given."

"Vitamin D was present in abundance in either cod-liver oil or irradiated ergosterol, and in egg yolk, butter, milk, etc."

"This cereal-free diet, rich in vitamin D, was given to twenty-two children for an average period of twenty-six weeks."

KEY POINTS FROM THIS ARTICLE:

- 1) The aim of these authors is to determine the etiology of dental cavities using both animal and human experiments.
- 2) When the "diet contains abundant vitamin D, the power of resistance of the living tooth is augmented; the tooth responds to injury by producing a large amount of well-formed secondary dentine, and, in the case of attack by caries, the infective process may be either delayed or arrested."
[meaning higher levels of vitamin D protect the teeth from cavities]
- 3) Investigations have shown that "vitamin D had a dominant influence in delaying the spread and even in arresting the progress of active caries."
- 4) "Experimental work on dogs and other animals has shown that for the normal development of the teeth the diet should include abundant vitamin D and not be overweighed with cereals."
- 5) The authors cite studies indicating that children supplementing with olive oil and vitamin D reduced dental cavities by 90%.

- 6) Cereals neutralize the effect of vitamin D in inhibiting the spread of caries in children. "In our first investigation on children we had observed that the diet containing mostly cereal, especially oatmeal, was associated with the greatest spread of caries."
- 7) "Experiments had shown that cereals, especially oatmeal, tended to counteract vitamin D in producing perfect calcification of the teeth."
- 8) Giving children a diabetic diet that was devoid of cereals and rich in vitamin D arrested tooth cavity development.
- 9) The results of this study "indicate that a diet rich in vitamin D and calcium and devoid of cereals has greater inhibitory and curative effects on dental caries than any previously tested."
- 10) The removal of cereals from the diet prevented dental cavity development.
- 11) The results "also indicate that a sufficiency of vitamin D and calcium should be given from birth, and before birth, by supplying a suitable diet to the pregnant mother. The teeth of the children would be well formed and more resistant to dental caries instead of being hypoplastic and badly calcified."

SUMMARY BY AUTHORS

- A group of children averaging 5.5 years of age were given a cereal-free diet rich in vitamin D and calcium for a period of six months.
- "Initiation and spread of caries were almost eliminated by these diets, and the results were better than those of the previous investigation in which-the vitamin D alone was increased in a diet containing bread and other cereals." **[Key Point]**
- "Active caries was arrested on this cereal-free diet to a greater extent than in the previous investigations, when cereals were extensively used."

COMMENTS FROM DAN MURPHY

This study, from 1932, indicates that dental cavities in children develop and are enhanced in children when they consume a diet high in cereal grains low in vitamin D.

The authors suggest that children supplement with vitamin D and avoid the consumption of grains, especially breads.