

Oligodontia in Danish schoolchildren

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Oligodontia is a rare condition, and only limited data are available on its prevalence. The present paper is based on data from Danish schoolchildren. When these data are combined with comparable data on Danish schoolchildren published previously by the senior author, it is shown that oligodontia occurs in 0.16% of the children (95% confidence interval, 0.07% to 0.30%). Two of every three congenitally missing teeth were upper or lower second premolars or upper lateral incisors. When data from Danish schoolchildren were combined with population data from similar groups of schoolchildren from the Nordic countries, the condition was found to be more frequent in girls than in boys ($P = 0.05$). □ *Congenitally missing teeth; epidemiology; oligodontia*

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Oligodontia is defined as congenital absence of ‘many’ teeth (1), without any specification as to the meaning of ‘many’. Schalk-van der Weide (2) has suggested six or more permanent teeth (excluding third molars) as a criterion. This criterion will also be used in this presentation. As the condition presents a complex treatment need, often involving extensive orthodontic intervention and subsequent prosthetic rehabilitation, data on the frequency of the condition are essential for estimating costs of meeting the treatment need. The condition is generally considered to be rare. A literature search of Medline in June 2000 using the Meshterms ‘anodontia/epidemiol’ identified 214 references, of which only 4 (3–6) reported population data on oligodontia in schoolchildren from the Nordic countries. The estimate of the prevalence varied from 0.15% to 0.26%. Furthermore, Grahnén (7) reported a prevalence of 0.01% in 1,006 Swedish children. None of the previous studies were

able to find any statistically significant differences in the prevalence of oligodontia between boy and girls. The purpose of the present communication is to report estimates of the prevalence of oligodontia in Danish schoolchildren. The data reported here are based on radiographic diagnosis of 2,319 children 9–13 years of age (1,160 boys and 1,159 girls). The material comprised all children in a part of the municipality of Århus supervised orthodontically by the senior author (S. Rølling). Diagnosis of oligodontia was based on radiographic examination either as periapical radiographs of unerupted permanent teeth or as orthopantomographic examination, both as part of systematic screening of all children for orthodontic treatment need. The senior author examined all children and read all radiographs. None of the children had clefts of lip and/or palate, and none were known to have any syndromes. Table 1 shows the proportion of children with

Table 1. Number of children examined, proportion of children with oligodontia, and 95% confidence limits in the present study, in a study Danish schoolchildren published previously by the senior author (6), and in the two materials combined

Material and sex	No. of children examined	Proportion with oligodontia	Lower 95% confidence limits	Upper 95% confidence limits
Present study				
Male	1,160	0.09%	0.00%	0.48%
Female	1,159	0.26%	0.05%	0.75%
Both	2,319	0.17%	0.05%	0.44%
Rølling 1980 (6)				
Male	1,668	0.12%	0.01%	0.43%
Female	1,657	0.18%	0.04%	0.53%
Both	3,325	0.15%	0.05%	0.35%
Both				
Male	2,828	0.11%	0.02%	0.31%
Female	2,816	0.21%	0.08%	0.46%
Both	5,644	0.16%	0.07%	0.30%

Table 2. Frequency of individual missing teeth in the 9 patients (3 males and 6 females) with oligodontia (congenital absence of 6 or more permanent teeth)

Tooth	No.	Percentage
11 and 21	0	0.00%
12 and 22	9	14.29%
13 and 23	2	3.17%
14 and 24	4	6.35%
15 and 25	17	26.98%
16 and 26	0	0.00%
17 and 27	1	1.59%
41 and 31	6	9.52%
42 and 32	1	1.59%
43 and 33	1	1.59%
44 and 34	5	7.94%
45 and 35	16	25.40%
46 and 36	0	0.00%
47 and 37	1	1.59%
All teeth	63	100.00%

oligodontia and the exact 95% confidence limits (8). Oligodontia was found in 0.17% of the children, more frequently in girls than in boys, but not statistically significantly so. These estimates are identical to the estimates published previously by the first author (6). When these two materials were combined, a total of 9 children with oligodontia were found. Of these, 5 were missing 6 teeth, 1 was missing 7 teeth, 1 was missing 8 teeth, and 2 were missing 9 teeth. A total of 63 permanent teeth were missing. Of the missing teeth 26.98% were upper second premolars, 25.04% were lower second premolars, and 14.29% were upper lateral incisors (Table 2).

Fig. 1 shows a consistent trend towards a higher frequency of oligodontia in girls than in boys in all the previous studies and in the present one. In the light of the fact that these studies all report on Nordic populations, have used similar diagnostic methods, and were based on children of the same age range, it was decided to combine data from all the studies in one analysis to obtain a larger sample (12,704 boys and 12,750 girls). This resulted in a statistically significant difference in frequency of oligodontia between boys (0.10%) and girls (0.25%) (Fisher's exact test, $P = 0.05$).

In conclusion, the present study has shown that oligodontia occurs in approximately 1 to 3 children per 1,000, that 2 of every 3 congenitally missing teeth in these children are upper or lower second premolars or upper lateral incisors, and that the condition is more frequent in girls than in boys.

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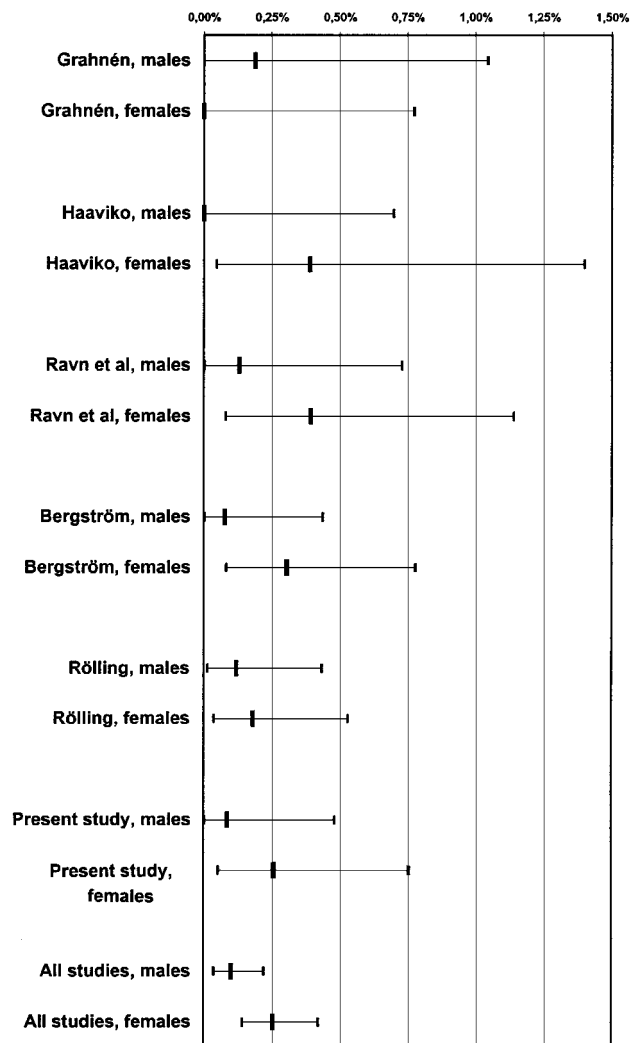


Fig. 1. Proportion of children with oligodontia (percentage and 95% confidence limits) reported in the literature and estimated from the present study and when all studies are combined.

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