

Developmental Advancement of the Male Dentition in the First Trimester

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During postnatal development the female is more advanced than the male in calcification and eruption of all permanent teeth, except for the third molar. In deciduous teeth the direction is reversed; males are slightly more advanced (H. V. MEREDITH, *J Dent Res* 25:43-66, 1946). The direction and the magnitude of prenatal dental dimorphism is of interest, but has not been systematically explored.

When reviewing first-trimester human embryos, abnormal specimens were excluded after gross and microscopic examinations. Histologic sections of 52 males and females were then available in the 14 to 58 mm crown-rump (C-R) range. The embryos were matched for sex and for size within ± 1.0 mm and comparisons of dental development were made on a matched basis. Except for the embryos where suitable sex and size matches could not be made, males were advanced in all deciduous

teeth. In this series of stillbirths, values of t were all significant at the 5% level or better.

When all embryos were used and grouping was done on the basis of dental development for each maxillary and mandibular tooth separately, female embryos proved systematically longer. This was true for 33 out of the 35 tooth and stage comparisons, which were based on computer listings and restricting the comparisons to combinations where the number of individual matches exceeded three. For comparable dental development, tooth by tooth, the female embryos averaged 11% longer than their male equivalents.

For comparable length, male embryos in the 14 to 58 mm size exhibited systematic dental advancement. For comparable dental development, the female embryos were systematically longer, and presumably older, by nearly 10%. These findings suggest that sex differences in the relative rates of prenatal dental development may underlie sex differences in the incidence of some prenatal dental defects (A. R. BURDI and R. SILVEY, *Teratology* 2:297-303, 1969).

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COMPARATIVE DENTAL DEVELOPMENT IN EMBRYOS MATCHED FOR C-R LENGTH

Deciduous Tooth	Mean Stage		Difference		t
	Male	Female	Mean	SE	
	Maxillary Teeth				
di1	3.5	2.8	0.67	0.08	8.8
di2	3.6	2.6	1.00	0.10	10.0
dc	3.5	2.7	0.76	0.11	7.3
dm1	2.8	2.0	0.74	0.11	6.4
dm2	2.4	1.6	0.76	0.14	5.7
	Mandibular Teeth				
di1	3.8	3.0	0.87	0.08	11.3
di2	3.6	3.2	0.39	0.15	2.7
dc	3.6	2.9	0.74	0.12	5.8
dm1	2.7	2.1	0.59	0.14	4.3
dm2	2.4	1.6	0.74	0.13	5.4

Pairs of sides, 54. Twenty-seven pairings from 42 embryos, matched within ± 1 mm; differences computed for number of sides and using the t test for matched pairs. $\chi^2 > 6.0$ against chance (5:5) hypothesis. di, deciduous incisor; dc, deciduous canine; dm, deciduous molar.