

Advanced Tooth Emergence in Negro Individuals

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Although Steggerda and Hill (*Am J Orthodont* 28:361, 1942) reported advanced dental eruption in American Negro boys and girls 30 years ago, neither the direction nor the magnitude of Negro-white differences in eruption timing are clear yet (HIERNAUX, *Eugen Quart* 15:12, 1968). As Dahlberg and Menegaz-Bock have pointed out, sample size, differing definitions of "eruption," differing class intervals, and different computational procedures may account for some of the temporal differences reported (*J Dent Res* 37:1123, 1958).

In the present study, which constitutes the Michigan phase of the 1968-1970 10-State Nutrition Survey, 1,951 low-income Negro and white individuals were seen by the same examiner (F.W.), who used an optical-scanning pre-coded recording form. A specially written program for the IBM 360-67 computer provided both mean age of permanent tooth emergence (M) and the variability (σ) for each tooth, using the properties of the normal curve (cf GARN, SANDUSKY, NAGY, and MCCANN, *J Pediatrics* 80:965, 1972).

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As shown in the table, 953 individuals of largely African ancestry, ie, American Negroes or blacks, tended to be more advanced than 998 individuals of European ancestry in permanent tooth emergence. Both by sign tests and conventional parametric t tests, the racial differences in mean age "at piercing the gingiva" were significant at any reasonable level of confidence. In standard deviation (SD) units (Z scores), Negro males averaged a 0.38 SD earlier than white males, and Negro females averaged 0.48 SD units ahead of their white peers. The largest absolute differences were observed for the third molars (M3, or 8); this was significantly more so for the mandibular third molars (5.6 years) than for the maxillary third molars (3.7 years).

Economically, the Michigan Negro and white groups were close (\$1,048 and \$1,304, respectively), but still differed by \$250 per capita. If allowance is made for this residual economic difference and for about 20 to 25% of European genes characteristic of the Michigan Negro community (REED, *Science* 165:762, 1969), the true Negro-white difference in permanent tooth emergence may be estimated as closer to 0.5 SD units.

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TABLE
ADVANCED TOOTH EMERGENCE IN AMERICAN NEGRO PARTICIPANTS

Tooth	Males				d as SD	Females				d as SD
	Negro		White			Negro		White		
	N	M	N	M		N	M	N	M	
Maxillary										
I1 (1)	182	6.8	156	7.3	0.60	265	6.8	87	7.1	0.58
I2 (2)	104	8.1	178	8.4	0.34	280	7.9	112	7.8	-0.22
C (3)	223	10.9	194	11.5	0.54	320	10.2	286	10.7	0.47
P1 (4)	308	10.2	236	10.9	0.51	288	9.7	333	10.4	0.21
P2 (5)	270	10.8	209	11.5	0.46	320	10.5	298	10.8	0.51
M1 (6)	160	6.5	136	6.2	-0.67	144	6.2	94	6.4	0.48
M2 (7)	193	12.3	232	12.5	0.12	292	12.0	224	11.7	-0.25
M3 (8)	53	20.6	108	24.5	0.48	202	22.2	241	25.6	1.53
Mandibular										
I1 (1)	160	6.0	136	6.2	0.50	128	5.8	94	6.4	1.30
I2 (2)	247	7.2	151	7.5	0.60	172	6.7	83	7.1	0.89
C (3)	240	10.2	152	10.9	0.72	308	9.4	178	9.9	0.56
P1 (4)	296	10.3	173	11.0	0.54	219	9.7	263	10.5	0.64
P2 (5)	305	11.1	237	11.8	0.37	352	10.7	229	11.1	0.29
M1 (6)	160	6.2	136	6.2	-0.09	159	5.9	94	6.2	0.59
M2 (7)	254	11.9	222	10.2	0.24	269	11.3	220	11.5	0.28
M3 (8)	82	19.1	97	25.1	0.76	140	19.2	207	24.4	0.94
Weighted mean difference					0.38					0.48

Note: N, number of sides; M , mean age at emergence; difference (d) is expressed in standard deviation (SD) units. I1, first incisor; I2, second incisor; C, canine; P1, first premolar; P2 second premolar; M1, first molar; M2, second molar; M3, third molar.