

PREVALENCE OF TONGUE ROLLING AMONGST STUDENTS POPULATION IN PORT HARCOURT METROPOLIS

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INTRODUCTION

Genetic variation in humans is influenced by several factors which include: selection, migration, gene flow and genetic drift (Bhasin *et al.*, 1992). Some authors have reported that the percentage of people who can roll their tongue ranges from sixty-five (65) to eighty-one (81) percent (%), it is slightly higher in females than in males (Sturtevant 1940, Liu and Hsu 1949, Komai 1951, Lee 1955). Sturtevant (1940) reported that some persons cannot roll their tongue when first asked but later learn to do so especially children.

Komai (1951) reported that the proportion of tongue-rollers among Japanese schoolchildren increased from 54 percent at ages 6-7 to 76 percent at age 12, implying that over 20 percent of the population learns to tongue-roll during that age range. Sturtevant (1940) came to a conclusion stating that tongue rolling was at least partially genetic based on their research on parents and offspring's.

Research carried out on identical twins revealed that 7 pairs out of 33 pairs studied had one R and one NR twin (Matlock, 1952), establishing a non genetic influence on tongue rolling. Martin (1975) also reported that numerous pairs of monozygotic twins differ in tongue rolling.

MATERIALS AND METHOD

This study comprised of both male and female subjects between 14-25 years in Port Harcourt, Rivers State. An instruction was passed for students to roll their tongue: U-shaped tongue, the lateral edges of the tongue meeting the incisors teeth, protrusion of the tongue, a trough in the centre of the tongue. The subjects were examined physically; those who can roll filled the questionnaire. The questionnaires were filled in the presence of the examiner.

Tongue rollers were selected at random from some schools in Port Harcourt. Tongue rolling was described using a tongue roller photograph, and then the test was carried out by physical examination. For each copy of questionnaire issued out, a record of the student's biodata including age, sex and handedness was taken. Records were subjected to statistical analysis.

RESULTS

Table 1: Relationship between tongue rolling and sex.

	Male	Female	χ^2	P
Tongue rollers	180 (68.5%)	225 (67%)	0.147	0.701
Non tongue rollers	83 (31.5 %)	111 (33%)		
Total	263	336		

Table 2: Relationship between tongue rolling and handedness.

	Right handed	Left handed	χ^2	P
Tongue rollers	361 (66.1%)	44 (83%)	6.302	0.01
Non tongue rollers	185 (33.9)	9 (17%)		
Total	546	53		

Table 3: Relationship between tongue rolling and diastema.

	Diastema	Close teeth	χ^2	P
Tongue rollers	200 (74.3%)	205 (62.1 %)	10.120	0.001
Non tongue rollers	69 (25.7%)	125 (37.9)		
Total	269	330		

Table 4: Relationship between tongue rolling and dimples.

	Dimples present	Dimples absent	χ^2	P
Tongue rollers	211 (77.3%)	194 (59.5%)	21.362	0.003
Non tongue rollers	62 (22.7%)	132 (40.5%)		
Total	273	326		

Table 5: Relationship between parents and tongue rolling in female subjects.

	None	Mother	Father	Both	χ^2	P
Tongue rollers	41 (40.2%)	29(60.4 %)	44 (77.1%)	111 (86%)	57.897	0.001
Non tongue rollers	61 (59.8%)	19 (39.6%)	13 (22.9%)	18 (14%)		
Total	102	48	57	129		

Table 6: Relationship between parents and tongue rolling in male subjects.

	None	Mother	Father	Both	χ^2	P
Tongue rollers	26 (33.3%)	20 (80%)	26 (61.9%)	108 (91.5%)	77.999	0.002
Non tongue rollers	52 (66.7%)	5 (20%)	16 (38.1%)	10 (8.5%)		
Total	78	25	42	118		

DISCUSSION

Tongue rolling is one of the human traits mostly used to demonstrate simple mendelism genetics. Tongue rolling is said to be a simple two allele for tongue rolling dominant over non tongue rolling.

According to Sturtevant (1940); Urbanowski and Wilson, (1947); Liu and HSU (1945), the proportion of people who can roll their tongue ranges from sixty- five to eighty-one percent, with slightly higher percentage in females than males. In the present study, the percentage of tongue rollers was 67.7%, which fell between the ranges. But the percentage of tongue rollers is slightly higher in males than in females, which may be due to geographical difference.

Sturtevant (1940) and Komai (1951) carried out a family study on tongue rolling and came up with a conclusion that tongue rolling is at least partially genetic. In the present study, individuals whose mothers can roll are more likely to be tongue rollers but the percentage is higher in males. Individuals whose father only can roll are more likely to be tongue rollers but the percentage is higher in females. Individuals whose both parents can roll are more likely to be tongue rollers, and the percentage is slightly higher in males. This suggests that the gene for tongue rolling might have been transmitted from parents to offspring. The tongue roller gene. The tongue roller gene is likely to be located on the X-chromosome.

Fry (1988) carried out a research on tongue rolling ability and left handedness, he observed that there were left handed persons than right handed persons and the percentage for tongue rolling was the same for both. This was in agreement with the present study, but the percentage of tongue rollers was higher in left handed persons. This implies that the part of the brain that controls handedness, is likely to have an effect on tongue rolling.

In the present study, it was observed that the percentage of tongue rollers was higher in individuals with diastema and also in individuals with dimples. This may be due to genetic linkage.

A tongue roller is one who has inherited a tongue rolling gene; tongue rolling ability is influenced by handedness, dimples and diastema.

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