

A COMPARISON OF STATURE, WEIGHT, AND HEAD MEASUREMENTS AMONG CATHOLIC, PROTESTANT, AND JEWISH STUDENTS¹

DAVID C. RIFE²

The Institute of Genetics

Ohio State University, Columbus, Ohio

Over a period of six years records have been made of several genetic and anthropometric traits as they occur among students taking an introductory course in human heredity at Ohio State University. The traits include blood groups, M and N blood types, taste reaction to phenyl-thio-carbamide, handedness, hair color, dermatoglyphics, pain threshold, stature, weight, head length and breadth. National origin and religion have also been recorded. The objectives of this project are to determine how effective cultural differences, such as nationality, geographic region, and religion have been in preventing random mating, and to what extent biological variations may be associated with cultural differences.

TABLE I

Group	No. Ind.	O	A	B	AB	% Fingers with Whorls	% Left-Handedness
Jewish Students...	330	35.45	40.30	15.17	8.48	38.32	15.84
Protestant Students.....	1,060	45.28	40.47	11.12	3.11	28.27	10.51
Jews, New Orleans						42.7	
Jews, Odessa.....	1,475	36.6	41.7	15.6	6.1		
Unselected Whites, U.S.A..	20,000	45.0	41.0	10.0	4.0		
Unselected Whites, U.S.A..	300					25.7	

No selection has been made in obtaining these data, all students registered in the course being required to give them. Protestants comprise by far the largest proportion of the group, almost all of them being of British or Northwestern European origin. Jews rank second in number, the great majority of them being of Russian and Central European origin. Catholics of British and Northwestern European origin comprise the third group in order of size. Several other groups, including Negroes, Italians, Greeks, and other small ones, are as yet of insufficient size to warrant valid comparisons.

Comparisons of Protestants and Jews in respect to the frequencies of the blood groups, dermatoglyphics, handedness, and other traits have been reported in detail elsewhere (Rife, 1948) and reveal certain differences of significance (Table I). Jews are characterized by a higher frequency of blood group antigen B than are the Protestants, but there is no difference in respect to the incidence of antigen A. There are also significant differences in respect to the occurrence of whorls on finger-tips, and of left-handedness in the two populations. Note the close correspondence between the blood group distributions of Jewish students and of Jews in

¹This paper was presented at the meeting of the American Society of Human Genetics in New York, December, 1949.

²Department of Zoology and Entomology.

Odessa. Also note that the Jews in New Orleans differ from the unselected population in regard to whorls on finger-tips in much the same way as do Jewish students from Protestant students.

Let us now consider comparisons of stature, weight, head length, and head width among Russian and Central European Jews, British Protestants, Unclassified Protestants, and Catholics of British and Northwestern European descent. Table II shows comparisons of stature and weight among females. Differences are obvious, Jewish girls being the shortest, Catholics the tallest. The difference between British Protestants and Unclassified Protestants is insignificant. All of the other differences in stature are quite significant. All four groups are quite similar in weight.

Table III shows comparisons of stature and weight among males. Here again we find obvious differences, Jews being the shortest and Catholics the tallest. The differences between both classes of Protestants and Jews are highly significant. Although Catholics are the tallest, the differences between them and the

TABLE II

FEMALES

Group	Number	Stature	Number	Weight
Russian and Central European Jews.	188	64.00 \pm 0.16	186	125.84 \pm 1.19
British Protestants.....	178	64.82 \pm 0.17	175	122.56 \pm 1.42
Unclassified Protestants.....	338	64.54 \pm 0.13	316	123.26 \pm 0.92
Unclassified Catholics.....	34	65.21 \pm 0.42	35	123.85 \pm 2.00

TABLE III

MALES

Group	Number	Stature*	Number	Weight*
Russian and Central European Jews.	83	67.71 \pm 0.30	83	149.96 \pm 2.15
British Protestants.....	153	69.00 \pm 0.22	153	151.24 \pm 1.23
Unclassified Protestants.....	178	69.31 \pm 0.17	177	151.16 \pm 1.86
Unclassified Catholics.....	51	70.19 \pm 0.35	51	159.50 \pm 3.21

*Stature is recorded in inches, weight in pounds.

Protestants are not statistically significant. The two types of Protestants are quite similar. The trends among the males in stature are the same as those among the females. Protestant and Jewish men show no real differences in weight, but Catholic men are significantly heavier than the other groups.

We shall now consider head measurements (Table IV). Note that the trends in head length correspond with the trends we found in stature. Jews have the shortest, Catholics the longest heads. This is what one might predict, as stature and head length usually exhibit a positive correlation. No differences are indicated between British and Unclassified Protestants. All of the other differences in head length are statistically significant.

In respect to head breadth, the greatest difference occurs between the two Protestant groups, the Unclassified Protestants having significantly broader heads. None of the differences between Catholics, Protestants, and Jews are of statistical significance.

Among males, we also find Jews have significantly shorter heads than do Protestants and Catholics (Table V). No significant differences are found between the two classes of Protestants, or between Protestants and Catholics.

Head breadth corresponds closely to what was observed among females, the greatest difference being between the two classes of Protestants, the Unclassified Protestants having the broader heads. No differences of significance are present between Jews, Protestants, and Catholics.

To recapitulate, Jewish students are shorter in stature and head length than are Protestant and Catholic students, whereas Catholic students are taller and have greater head length than do the other groups. No consistent differences in weight are apparent. Unclassified European Protestants have broader heads than do British Protestants.

TABLE IV**

FEMALES

Group	Number	Head Length	Number	Head Breadth
Russian and Central European Jews.	74	178.79 \pm 0.79	74	144.05 \pm 0.57
British Protestants.....	62	181.30 \pm 0.95	62	142.58 \pm 0.76
Unclassified Protestants.....	109	181.56 \pm 0.54	109	144.47 \pm 0.54
Unclassified Catholics.....	27	187.00 \pm 2.06	27	143.30 \pm 1.36

**Head measurements were not taken during the first years of the project, thus the numbers of individuals in Tables IV and V are considerably smaller than those shown in Tables I, II, and III. Measurements are in millimeters.

TABLE V

MALES

Group	Number	Head Length	Number	Head Breadth
Russian and Central European Jews.	28	187.80 \pm 1.06	28	149.25 \pm 1.51
British Protestants.....	60	193.30 \pm 0.88	59	149.50 \pm 0.67
Unclassified Protestants.....	73	192.27 \pm 0.73	73	152.00 \pm 0.66
Unclassified Catholics.....	38	192.87 \pm 1.36	38	151.34 \pm 1.25

These findings parallel those made earlier in respect to the blood groups, handedness, dermatoglyphics, and other traits. Cultural differences are accompanied by biological differences, presumably as the result of random drift in gene frequencies within each of the populations.

LITERATURE CITED

- Rife, David C. Genetic variability within a student population. *Am. Jour. Phy. Anthrop.* 6 N. S.: 47-62. 1948.