MOTOR PERFORMANCES IN TWINS

Sir:

Increasing interest in the study of human motorics and the possibilities of intentional motor control obviously call for a genetic approach.

As a contribution to the problem of the importance of genetic factors in human motor abilities, I should like to briefly report on the results of a study based on the analysis of 13 tests administered to 30 twin pairs, 17 MZ and 13 DZ. The heritability indexes calculated according to the different methods are shown in the Table.

It will be noted that, although heredity appears to play a role in general, not all the motor abilities considered are influenced to the same extent.

The impact of genetic factors appears to be higher in activities with speed and explosive strength and some marginal manifestations of strength. There, however, the results are not unequivocal.

The influence of hereditary factors might thus perhaps be thought to decline with increasing maturation and ontogenesis.

Test	Variable	Heritability Index			
		Holzinger	Falconer	Nichols	Analysis of variance (h^2)
Coordination Test	Time (s)	0.403	0.504	0.804	0.477
» » Mistakes	Number	0.279	0.448	—	0.642
Vertical Jump	cm	0.825	0.955	—	0.862
Medicine Ball Throw	cm	0.785	0.604	0.658	0.599
Shuttle Run		0.848	0.810	0.874	0.896
Bent Arm Hang		0.354	0.254	0.331	0.621
Bending Trunk Forwards	cm	0.895	0.334	0.341	0.689
Push-ups	Number	0.277	0.266	0.407	0.222
Sit-ups	Number	0.690	0.662	0.778	0.445
Dynamometry: Arm Strength	kp	0.680	0.602	0.702	0.745
Dynamometry: Grip Strength	kp	0.632	0.350	0.390	0.455
Dynamometry: Trunk Strength	kp	0.680	0.314	0.349	0.568
Ergometry: Elbow Flexion	Number	0.652	0.480	0.551	0.832

RUDOLF KOVÁR
Section of Anthropometrics
Department of Physical Education and Sports
Charles University
Prague 1, *Czechoslovakia*