

Relation ship between fingerprints and physical fitness

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Abstract Fifty-eight college women and seventy-seven college men were measured for fingerprints. A respective test battery was used to evaluate the college women's and men's physical fitness. The fingerprints of whorls and loops were found to be closely related to the college women's performance in standing broad jump test. For the college men group, the number of loop fingerprints showed an inverse relationship to 100-m run performance. It is concluded that fingerprints may be an index useful for development of athletic ability. This findings will be a clue for a further study in.

Key words Fingerprint; Physical Fitness; College Women; college Men

0 Introduction

Physical fitness is a multidimensional construct related to functional health^[1]. The purpose of the present work was to study the relationship between fingerprints and physical fitness.

1 Materials and methods

Fifty-eight female and seventy-seven male college students volunteered for this study. Age, height and body weight for college women and men were $22.3 \pm 0.6(x + sd)$, 22.2 ± 0.7 yrs; 164.8 ± 2.8 , 176.8 ± 2.4 cm and 59.8 ± 3.4 , 67.6 ± 4.2 kg respectively. The subjects were in good health, had experienced two physical education classes per week each primary and middle school year and major in physical education.

All subjects' fingerprints were determined. A test battery including 100-m run, 800-m run, 4kg shot put and standing broad jump items was used for college women, another test battery consisting of 100-m run, 1500-m run, 5kg shot put top-to-toe and crosswise run items for college men^[2]. Three trials were given to each subject between 8:30 and 10:30 a. m. at $18 \sim 20$ °C

Received: 1997-04-11

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during the experiment, but the average of the three was used for the college student's score.

The results are presented as mean \pm standard deviation (SD). The Chi square test, linear regression and correlation were used to evaluate statistical significance.

2 Results

The test battery scores for college women group were 100-m run $14.6 \pm 0.7s$, 800-m run $2.9 \pm 0.2m$, 4kg-shot put $8.3 \pm 0.8m$, standing broad jump $2.29 \pm 0.13m$. In college men group 100-m run, 1500-m run, 5kg-shot put, top-to-toe and crosswise run items were $12.01 \pm 0.31s$, $5.3 \pm 0.2m$, $10.6 \pm 1.2m$, $18.4 \pm 5.2cm$ and $14.9 \pm 0.7s$ respectively.

Fingerprints for the college women and men are shown in Table 1. The college women group had more arches but less whorls than the college men group. The fingerprints of whorls and loops were found to be closely related to the college women's performance in standing broad jump test (Table 2). For the college men group, the number of loop fingerprints showed an inverse relationship to 100-m run performance (table 2).

3 Discussion

An individual fingerprints are specific as a whole^[3]. From genetic point of view, fingerprints may be a dominant character storing the individual genetic information. The present findings indicate that there were relationships between fingerprints and female's explosive muscle power of leg extensors or male's speed fingerprints (Table 2). This results enrich the concept that physical fitness is multifaceted. Therefore, it is possible that fingerprints could be available for development of athletic ability in same sex and age group. On the other hand, the present findings also indicate that the sex differences of fingerprints and relationship between fingerprints and physical fitness existed in the study (Table 1, 2). Whether the differences result from steroid hormones which possess the capacity to influence gene activity^[4] remains unknown.

Tab. 1 The number and percentage of fingerprints for the college students

Fingerprint type	College women (n=58)		College men (n=77)		χ^2	p
	No.	%	No.	%		
Whorl	199	34.3	306	39.7	10.20	<0.01
Loop	270	46.6	364	47.3		
Arch	111	19.1	100	13.0		

Tab. 2 The relationship between fitness test scores and fingerprint

Group	Test item (Y)	Fingerprint type (X)	Regression equation	r	p
College women (n=58)	Standing broad jump (m)	Whorl	$\hat{Y}=2.22+0.02X$	+0.664	<0.01
College men (n=77)	100 m-run(s)	Loop	$\hat{Y}=12.10+0.03X$	-0.356	<0.01

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指纹和身体素质关系初探

董纪文 孙绪生

(体育系)

提 要 初步探索指纹和身体素质的关系. 发现58名女大学生手指的螺纹数与立定跳远的成绩呈正相关, 77名男大学生的箕纹数与100m跑成绩呈负相关. 提示在同性别同年龄组中, 手指螺纹和箕纹数分别与女子腿部爆发力和男子的速度素质可存在一定的关系, 这一发现可能作为进一步研究指纹和身体素质关系的线索.

关键词 指纹; 身体素质; 女大学生; 男大学生

中图法分类号 G804.32