



### ELITE FUTSAL ATHLETES: DERMATOGLYPHIC PROFIL

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#### Introduction

Studies based on Dermatoglyphics state that the complexity of fingerprints drawings can observe genotype and fetal development characteristics, so this method can be an important tool in observing neuromotor potential characteristics (3).

**Purpose:** To analyse the dermatoglyphic profile of elite futsal athletes compared to non-athletes group.

#### Method

The sample was composed by 340 male individuals, divided into two groups:

Group A (GA) composed by 170 professional Futsal athletes (Age 26,7±4,6) and Group B (GB) composed by 170 non-athlete individuals (Age 22,4±3,8). Was observing gender and have no significant differences on age. For this study were collected as anthropometric data, just Dermatoglyphics. The GA is composed by the three best teams in the Italian and Portuguese Cup, Spanish King's Cup and the Brazilian Futsal League's 2011 season.

The protocol chosen was the Dermatoglyphic proposed by Cummins & Midlo (1), and for the capture, processing and fingerprint analysis, was used the Leitor Dermatoglífico (Dermatoglyphic Reader, Salus Dermatoglifia, Luzerna, Brazil) validated by Nodari Junior (2).

For the statistical analysis was established the level of significance  $p < 0.05$ . In comparing the amounts of lines between GA and GB, to observe the normality distribution, was used the Kolmogorov-Smirnov test. The observation of non-normal distribution, applies to the inference Nonparametric Mann-Whitney Test for comparisons between numeric variables. To compare categorical variables: Arc (A), Loop Radial (LR), Loop Ulnar (LU), Whorl (W), the chi-square test was used, and when found significant differences, applied to Waste Analysis adjusted ( $R_{aj} > 1.96$ ).

#### Results

For the numeric variables comparison, the result shows that the number of ridges of six possible variables in the fingerprint, is significantly higher in GA compared to GB in the line summation of the respective fingers

Fingers	Abbreviation	Group A	Group B	p
Finger Thumb Left Hand	MESQL1	14.8±5.01	12.1±5.33	0.000
Ring Finger of the Left Hand	MESQL3	11.6±5.59	10.0±5.58	0.006
Finger Minimum Left Hand	MESQL5	13.0±5.85	11.2±6.16	0.016
Finger Thumb of the Right Hand	MDSQL1	16.5±21.5	14.3±21.58	0.000
Sum of Total Number of Left Hand Lines	SQTLE	62.0±4.61	54.9±4.88	0.006
Sum of the Total Number of Lines	SQTL	124.6±40.80	112.8±41.71	0.020

For the rare marks analysis between GA and GB, referring to qualitative variables, i.e., the figure type noted significant differences in the following fingers GA: Finger Thumb Left Hand (MET1;  $p=0.22$ ), with higher amount of W ( $R_{aj}=2.1235$ ); Finger thumb Right Hand (MDT1;  $p=0.07$ ), with higher amount of W ( $R_{aj}=2.8398$ ); Ring finger of the right hand (MDT3;  $p=0.024$ ), with higher amount of LR ( $R_{aj}=2.1173$ ); Minimum and Finger of Right Hand (MDT5;  $p=0.040$ ), higher amount of LR ( $R_{aj}=2.5408$ ).

		Fingerprint Patterns			
		A	LR	LU	W
		Raj(n)	Raj(n)	Raj(n)	Raj(n)
MET1	Futsal	-1,5	1,6	-2,1	2,1
	Control Group	1,5	-1,6	2,1	-2,1
MDT1	Futsal	-1,4	1,3	-2,8	2,8
	Control Group	1,4	-1,3	2,8	-2,8
MDT3	Futsal	-1,7	2,1	-1,6	1,5
	Control Group	1,7	-2,1	1,6	1,5
MDT5	Futsal	-1,4	2,5	-1,1	0,2
	Control Group	1,4	-2,5	1,1	-0,2

#### Conclusions

The results reflect the Dermatoglyphic profile of the high performance futsal athlete has significant differences compared to non-athlete population, so the Dermatoglyphic can be able to serve as a guidance tool for sports talents.

For the quantities of lines the following indicators must be observed being the data presented characteristics of high performance athletes:

With regard to rare marks should be noted the presence of the following figures: W in MET1 and MDT1 and LR in MDT3 and MDT5.

#### References

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