BODY COMPOSITION IN FOOTBALL PLAYERS

PHYSIOLOGY OF SPORT AND EXERCISE

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Introduction

Care of body composition in modern football is very important, specially in elite performances is crucial due to growing amounts of money, prestige and first of all increasing competition between sportsmen and higher level of top performance. Nowadays details make the biggest difference and –without any doubts- body composition are one of them. The others we can count are like proper diet, appropriate resting time and many others. Therefore, almost all sportsmen – not only footballers- but participant of all of disciplines care a lot about correct preparing including composition and everything connect with that.

Body composition depends on many factors : individual genetics, nutritional requirements, physical activity, ability to muscle recovery, age, somatotype and et cetera. There is no chance to achieve top performance through ignoring even one dimension. At present footballers are forced crossing almost their maximum of effort to gain their goals.

This work try to compare body composition of football players with normal population because there are a lot of different between their organisms.

BODY COMPOSITION IN CASE OF COMPARE FOOTBALL PLAYERS AND NORMAL/RECREATIONAL POPULATION

At first, take a look at differences between burning calories of footballers and normal population with moderate physical activity which influence on proper diet before and just after strain. For footballers average total from one match (90 min) approximately 1110 kcal – in general they burn above 3500 kcal per match day, for normal population should be about 2000-2500. There is not so big difference like for example between swimmers (Michael Phelps admitted he have eaten even 12 000 calories per day before Olympic Games 2012 in London) or marathoners (these runners burn approx 4000 kcal for whole marathon) but anyway add daily training, footballers increase their energy requirements and cross their maximum efforts –all the more when we put emphasis on winger players or full back where they make bigger effort than strikers, central defenders or goalkeepers. However, leading to main topic of this assignment, we can focus on differences between football players and average population concerning to few measures. Adult male football players have less rate of of body fat than above mentioned (8% - 16,7%), concerning female (21.8% - 24.3%). Other worth to mention results concerning skinfold where differences are visible.

I would like to also mention about somatotype of footballers with dividing for positions. According to below table we can reach out few conclusions for example midfielder are shorter than other players and the reason is that physical traits observed in midfielders enable them to move more efficiently and so on.

Physical characteristics of Super League and First League soccer players regarding playing position

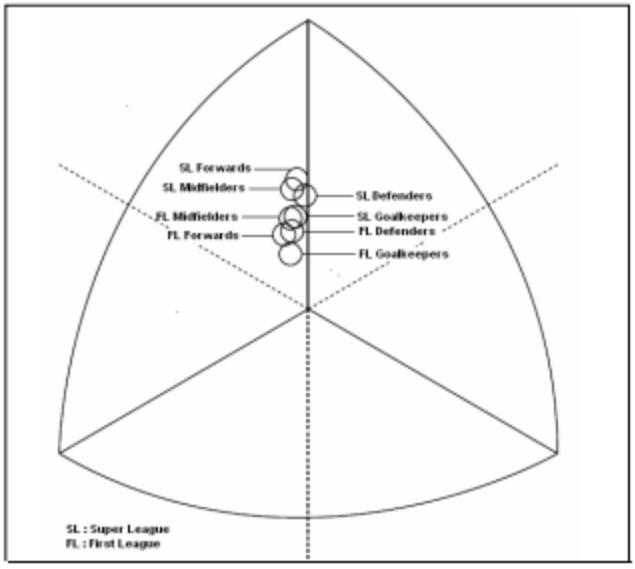
Playing Position	Age (year)		Body weight (kg)		Height (cm)		BMI (kg/m²)	
	SL	FL	SL	FL	SL	FL	SL	FL
Goalkeeper	25.7±4.47	23.4±5.09	82.0±5.50	79.2±5.85	184.8±3.73	185.2±4.66	24.02±1.37	23.10±1.56
Defender	25.9±4.27	24.5±4.30	75.6±6.21	74.15±5.70	178.6±5.26	178.7±4.95	23.71±1.45	23.23±1.54
Midfielder	25.8±3.05	23.8±3.99	73.9±4.75	71.7±6.14	176.1±4.62	175.9±5.60	23.82±1.23	23.17±1.55
Forward	25.2±3.54	24.6±4.43	76.6±6.44	75.11±5.87	177.9±5.89	179.3±4.96	24.20±1.53	23.36±1.56
Overall	25.7±3.73	24.1±4.27	76.1±6.18	73.9±6.34	178.4±5.66	178.4±5.90	23.89±1.38	23.21±1.53

SL: Super league, FL: First league, BMI: Body mass index

SL – Turkish Super League

FL – Turkish First League

Playing Level	Somatotype Category	Golkeeper	Defender	Midfielder	Forward	Overall
SL	endomorph-ectomorph	0.0	0.0	0.0	0.0	0.0
FL		0.0	0.0	1.6	0.0	0.7
SL	ectomorphic endomorph	0.0	0.0	0.0	0.0	0.0
FL		0.0	0.0	0.0	0.0	0.0
SL	balanced endomorph	0.0	0.0	0.0	0.0	0.0
FL		5.9	0.0	0.0	0.0	0.7
SL	mesomorphic endomorph	4.5	1.8	0.0	0.0	0.6
FL		5.9	2.2	0.0	4.0	2.1
SL	mesomorph-endomorph	4.5	1.8	5.1	0.0	3.1
FL		23.5	10.9	6.5	12.0	11.1
SL	endomorphic mesomorph	22.7	37.0	39.0	29.0	34.2
FL		11.8	34.8	34.4	32.0	29.2
SL	balanced mesomorph	31.8	37.0	33.9	54.8	38.5
FL		11.8	15.2	32.8	20.0	23.6
SL	ectomorphic mesomorph	27.3	13.0	11.9	9.7	14.3
FL		17.6	8.7	6.5	4.0	8.3
SL	mesomorph-ectomorph	0.0	3.7	0.0	0.0	1.2
FL		11.8	8.7	4.9	8.0	7.6
SL	mesomorphic ectomorph	4.5	1.8	3.4	0.0	2.5
FL		0.0	2.2	3.3	0.0	2.1
SL	balanced ectomorph	0.0	1.8	0.0	3.2	1.2
FL		5.9	2.2	1.6	12.0	4.2
SL	endomorphic ectomorph	0.0	0.0	0.0	0.0	0.0
FL		0.0	0.0	0.0	0.0	0.0
SL	central	4.5	1.8	6.8	3.2	4.3
FL		5.9	15.2	8.2	8.0	10.4



About depict datas where we measure footballers from Turkish League we can confirm their somatotype is the most closest to mesomorph so they are mostly muscular.

Dividing measures of skinfold because of different part of body in anthropometric measures were taken altogether that defined longitudinal and transversal dimensionality of the skeleton, the body mass and the body volume, as well as the subcutaneous adipose tissue: body height (BODHEI), body mass (BODMAS), elbow diameter (ELBDIA), wrist diameter (WRIDIA), knee diameter (KNEDIA), ankle diameter (ANKDIA), minimum upper arm diameter (MINUAD), maximum upper arm diameter (MAXUAD), minimum forearm diameter

(MINFAD), maximum forearm diameter (MAXFAD), minimum thigh diameter (MINTHD), maximum thigh diameter (MAXTHD), minimum calf diameter (MINCAD), maximum calf diameter (MAXCAD), triceps skinfold thickness (TRSKTH), forearm skinfold thickness (FASKTH), thigh skinfold thickness (THSKTH), calf skinfold thickness (CASKTH), chest skinfold thickness (CHSKTH) and abdominal skinfold thickness (ABSKTH). Anthropometric research was conducted according to the IBP standards respecting the basic rules and principles related to the parameter choice, standard conditions and measurement techniques, as well as the standard measuring instruments adjusted before measurement was carried out.

Table concerning skinfold of particular part

Variables	Group	N	M	SD	SEM
BODHEI	footballers	26	182.112	6.732	1.320
	recreational players	30	183.620	7.709	1.408
BODMAS	footballers	26	80.10	7.13	1.40
	recreational players	30	86.90	14.78	2.70
ELBDIA	footballers	26	72.712	3.380	.663
	recreational players	30	71.370	3.484	.636
WRIDIA	footballers	26	58.096	3.434	.673
	recreational players	30	57.420	3.075	.561
KNEDIA	footballers	26	99.331	3.770	.739
	recreational players	30	101.350	5.474	.999
ANKDIA	footballers	26	75.72	3.22	.63
	recreational players	30	76.15	4.29	.78
MINUAD	footballers	26	30.31	2.46	.48
	recreational players	30	32.88	2.71	.50
MAXUAD	footballers	26	32.15	1.97	.39
	recreational players	30	34.73	2.59	.47
MINFAD	footballers	26	16.92	.89	.17
	recreational players	30	17.33	1.09	.20
MAXFAD	footballers	26	26.42	2.55	.50
	Recreational players	30	28.08	1.48	.27
MINTHD	footballers	26	41.27	2.63	.52
	recreational players	30	41.05	3.96	.72
MAXTHD	footballers	26	56.42	2.66	.52
	recreational players	30	59.53	6.07	1.11
MINCAD	footballers	26	24.35	1.20	.23
	recreational players	30	23.18	1.85	.34
MAXCAD	footballers	26	37.85	1.93	.38
	recreational players	30	38.72	3.40	.62
TRSKTH	footballers	26	4.208	1.155	.227
	recreational players	30	7.510	3.276	.598
FASKTH	footballers	26	4.835	.624	.122
	recreational players	30	7.767	3.462	.632
THSKTH	footballers	26	7.331	2.065	.405
	recreational players	30	15.027	5.829	1.064
CASKTH	footballers	26	6.142	1.530	.300
	recreational players	30	10.307	4.144	.757
CHSKTH	footballers	26	6.465	1.349	.265
	recreational players	30	16.543	7.011	1.280
ABSKTH	footballers	26	6.342	1.379	.270
	recreational players	30	15.347	7.954	1.452

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