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The Evaluation of Inspirations Parameters, Hematuria and Proteinuira Concentrations of Different Countries' National Team Boxers

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Abstract: The purpose of this study was to investigate the inspiration parameters, hematuria and proteinuria concentrations in different countrie's national team boxers. The present study was conducted on 35 boxer in 15-16 years from Turkey, Azerbaijan, Russia, Ukraine, Moldova, Georgia. The mean average values of the live weights of Ukraine and Turkey boxers were found significantly ($P<0.05$). It was not found the signicantly FEV_1 (ml), FEV_1(%) MVV values among the groups.The VCi and FMF parameters were detected more higher in Ukraine boxers than Azerbaijan team ($P<0.05$). The hematuria and proteinuri before the contest were not established but the hematuria in all of the boxers after the contest was determined 100 % and the proteinuria in 40 % of boxers was found.

Key words: Inspiration, hematuria, proteinuria, boxer

INTRODUCTION

The results of biochemical, hematology and lung functions tests of people who do boxing sport and not do are different from one another. During contest; the inspiration, circulation and digestion functions of people doing boxing arises above the normal values. Whereupon the metabolisms of proteins, carbohydrates and lipids *arises* too. At the same time their kinetic energy arises. With both isotonic and isometric flexes in body muscles, maximum strength comes into being. Thus fats, carbohydrates and proteins with enzymatic reactions provide the necessary calorie and energy (Castenfors *et al.,* 1967; Peterson et al., 1969; Schmid, 1970; Fitch *et al.,* 1976; Blacklock *et al.,* 1977*;*Castenfors *et al.,*1977*;* Barry *et al.,* 1988; Astrand *et al.,* 1989; Halzgraefe *et al.,* 1992; Harwey et al., 1992; Mcleod, 1992*;* Pastena & Benedetti, 1992; Ryan, 1992; Tteining, 1992; Whiteson, 1992; Butler *et al.,* 1993; Fox, 1993; Marwick, 1993; Ostlere *et al.,* 1994).

As striated muscles that tied to humerus, radios, femur, tibia, fibula, clavicle and scapula include more mitochondria in number; they strengthen the mechanic alacrity in boxing more. On the other hand, at hypothalamus which is the intellectual center of brain, the decisions about the goings on in match become clear for positive. At boxing sport, the capacity and volume of lungs give us some indicator information about homeostasis of blood. With inspiration exercises, the capacity and volume of lungs can be aggravated and this can influence the systolic and diastolic blood pressures for positive during the contest and they increase the performance to the highest level.

The highly oxygenate of brain and blood both increases the oxidation in body and provides brain to work controlled and so makes memory strong. Boxers' respiration volume, inspiration and expiration substitute volumes must be strengthen in oxygen abundant areas with trainings. In this case, inspiration and expiration capacities should be increased with accompany of diaphragm. Moreover, total lung capacity, vital capacity and functional residual capacity are research matters at all sport branches. Nourishment, age and weight of a sportsman are very effective factors in terms of regular working of lung and heart. On the other hand, the balance of blood hemostaz is also among the factors that affects the predominance at contests. Excessive protein nourishment, nephritis, trauma and intensive exercises sometimes lead to proteinuria. And this causes decreasing performance of sportsmen. Sometimes hematuria can also occur because of trauma. Especially this condition appears when the kidneys are beat. Therefore, the boxer should fix his postural pose against any beats. Some researches related to respiration, hematuria and proteinuira of boxers have been fulfilled. However, the values of each sportsmen is different. On this account, in this study, proteinuira, hematuria values and

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respiration parameters of national boxers of various countries have been investigated (Refsum & Strömme, 1975; Poortmans, 1981; Fasset *et al.,* 1982; Astrand *et al.,* 1989; Joseph *et al.,* 1990; Cohen *et al.,* 2003; Dennis *et al.,* 1988; Groog *et al.,* 1990; Delbert *et al.,* 1991; Jones *et al.,* 1997; Mittleman & Zambraski, 1992; Kallmeyer &. Miller, 1993; McInnis *et al.,* 1998).

MATERIALS AND METHODS

This study was applied to 35 fifteen-sixteen aged boxers who attended to 1. European Stars Boxing Championship that committed in Elazığ (Turkey) from Turkey, Azerbaijan, Russia, Ukraine, Moldova and Georgia National Boxing Teams. In the study, the respiration parameters were made with "GBR. Mijnhard Vacates Dry Spirometer, Type VCT" tool in Firat University Physiology Discipline. The results were evaluated according to BTPS (Body, Temperature, Pressure, Saturated) data. And the accountants below were made:

Ideal Vital Capacity (VCI):

VCI values were accounted by considering age and height factors with formulas that Stewart improved.

Forcible Vital Capacity (FVC):

This value which is a respiration gas volume that can be ejected with an implicit expiration after a maximal inspiration is obtained from the graphic.

Synchronous Frocible Expiratuar Volume Rates To Forcible Vital Capacity (FEV, %):

It is the accounting the percentage of FVC value of first second vital capacity.

Formula: $(FEV_I\ \%) : \frac{FEV_I}{FVC} x100,\ \%.$

Deprivation of Vital Capacity (VCK):

This value that was accounted with the Formula is the rate of FVC to VCI.

Formula: $VCK=\frac{FVC}{VCi} x100-100\ \%.$

Maximal Voluntary Respiration Volume (MVV):

This value that was accounted with Tiffenau and Drutel formulas is a gas holder that can be breathed per second voluntarily.

Formula: $MVV=FEV_1 \times 30$

Forcible Expiration Flow Medium (FMF):

FMF value is the average flow speed in medium point of scales.

Formula for FMF: $FMF = \frac{FVC\ \%75 - FVC\ \%25}{t2\ -\ t1}$

The Statistical Evaluation Of The Findings:

The arithmetic means and standard deviation of all parameters have been accounted. Variance analysis has been used for determining the differences between the groups in terms of respiration parameters.

RESULTS AND DISCUSSION

Results:

The study has been applied to 35 voluntary boxers from Turkey (N=9), Azerbaijan (N=4), Russia (N= 5), Ukraine(N=6), Moldova (N=4) and Georgia (N=7) Stars National Teams. From the studied groups, it has been determined that Turkish National Team's average age is 15.88 ± 0.11 years , average height is 175.33 ± 2.79 cm, average weight is 60.72 ± 3.05 kg, the length of boxing is 3.77 ± 0.57 years; Azerbaijan National

Team's average age is 15.50 ± 0.28 years, average height is 175.50 ± 2.63 cm, , average weight is 72.00 ± 9.14 kg, the length of boxing is 3.50 ± 0.86 years; Russia National Team's average age is 15.80 ± 0.28 years, average height is 173.60 ± 2.15 cm, average weight is 59.40 ± 4.17 kg, the length of boxing is 5.00 ± 0.83 years; Ukraine National Team's average age is 16.00 years, average height is 177.00 ± 1.98 cm, average weight is 72.00 ± 5.53 kg, the length of boxing is 4.16 ± 0.70 years; Moldova National Team's average age is 16.00 years, average height is 172.00 ± 4.08 cm, average weight is 67.75 ± 9.56 kg, the length of boxing is 3.50 ± 0.50 years, Georgia National Team's average age is 15.85 ± 0.14 years, average height is 178.85 ± 3.76 cm, average weight is 66.92 ± 3.75 kg, the length of boxing is 5.57 ± 0.64 years. All boxers' individual parameters within studied groups is given in table 1, 2, 3, 4, 5 and 6. While there haven't been any statistical differences between the groups in terms of age, height and boxing period, it has been determined that there has been a significant difference between Ukraine and Turkey National Teams at about $P<0.05$ level as a result of comparison of weight averages (Table 7).

Table 1: The Indvidual Parameters of Turkey Star Boxers National Team

					VCi (ml)					VCK (%)			
Sportsman no	Length of Boxing (years)	Age (Years)	Height (Cm)	Weight (Kğ)	According to age	According to heigth	FVC (ml)	FEV_1 (ml)	FEV_1 (%)	According to age	According to heigth	MVV (lt/dk)	FMF (lt/sn)
1	5	16	175	63.5	3688	4295	4450	3750	84.26	+20.66	+ 3.60	112.50	4.20
2	2	16	160	48.0	3688	3350	4000	3550	88.75	+ 8.45	+19.40	106.50	3.84
3	2	16	175	71.0	3688	4295	5250	4250	80.95	+42.35	+22.24	127.50	4.38
4	7	16	187	75.0	3688	4560	5150	4200	81.55	+39.64	+12.93	126.00	3.30
5	5	16	180	51.0	3688	4350	4450	3850	86.51	+20.66	+ 2.29	115.50	3.00
6	3	16	186	67.0	3688	4530	4650	4400	94.62	+26.08	+ 2.65	132.00	5.67
7	2	15	170	54.0	3350	3980	4800	4000	83.33	+43.28	+20.60	120.00	4.28
8	4	16	175	57.0	3688	4295	5025	4050	80.60	+36.25	+17.00	121.50	3.70
9	4	16	170	60.0	3688	3980	4500	4050	90.00	+22.00	+13.00	121.50	4.33

Table 2: Individual Parameters of Azerbaijan Stars Boxers National Team

					VCi (ml)					VCK (%)			
Sportsman no	Length of Boxing (years)	Age (Years)	Height (Cm)	Weight (Kğ)	According to age	According to heigth	FVC (ml)	FEV_1 (ml)	FEV_1 (%)	According to age	According to heigth	MVV (lt/dk)	FMF (lt/sn)
1	6	15	170	51	3350	3980	4400	3800	86.36	+31.34	+10.55	114.00	4.40
2	2	15	180	95	3350	4350	5550	4650	83.78	+65.67	+27.59	139.50	4.40
3	3	16	180	67	3688	4350	4000	3200	80.00	+ 8.46	- 8.04	96.00	6.66
4	3	16	172	75	3688	4106	4350	3300	75.86	+17.95	+ 5.94	99.00	2.32

Table 3: Individual Parameters of Russia Stars Boxers National Team

					VCi (ml)					VCK (%)			
Sportsman no	Length of Boxing (years)	Age (Years)	Height (Cm)	Weight (Kğ)	According to age	According to heigth	FVC (ml)	FEV_1 (ml)	FEV_1 (%)	According to age	According to heigth	MVV (lt/dk)	FMF (lt/sn)
1	5	15	168	54	3350	3854	4050	3800	93.82	+20.89	+ 5.08	114.00	5.32
2	3	16	172	75	3688	4106	4550	3850	84.62	+23.37	+10.81	115.50	3.55
3	8	16	172	60	3688	4106	4625	4200	90.81	+25.41	+12.64	126.00	5.78
4	4	16	181	57	3688	4380	4400	3800	86.36	+19.30	+ 0.45	114.00	3.79
5	5	16	175	51	3688	4295	4350	4050	93.00	+17.95	+ 1.28	121.50	6.21

Table 4: Individual Parameters of Ukraina Stars National Team

					VCi (ml)					VCK (%)			
Sportsman no	Length of Boxing (years)	Age (Years)	Height (Cm)	Weight (Kğ)	According to age	According to heigth	FVC (ml)	FEV_1 (ml)	FEV_1 (%)	According to age	According to heigth	MVV (lt/dk)	FMF (lt/sn)
1	3	16	176	75	3688	4230	4600	4200	91.30	+24.72	+ 8.75	126.00	4.89
2	4	16	185	91	3688	4500	5900	5250	88.98	+59.98	+31.11	157.50	6.14
3	2	16	180	81	3688	4350	5250	4450	84.76	+42.35	+20.69	133.50	4.38
4	5	16	171	54	3688	4043	3800	3300	86.84	+ 3.03	- 6.00	99.00	3.45
5	4	16	175	71	3688	4200	4850	4400	90.72	+31.50	+15.48	132.00	4.85
6	7	16	175	60	3688	4200	4600	4200	91.30	+24.73	+ 9.52	126.00	5.90

Table 5: Individual Parameters of Moldova National Team

					VCi (ml)					VCK (%)			
Sportsman no	Length of Boxing (years)	Age (Years)	Height (Cm)	Weight (Kğ)	According to age	According to heigth	FVC (ml)	FEV_1 (ml)	FEV_1 (%)	According to age	According to heigth	MVV (lt/dk)	FMF (lt/sn)
1	3	16	178	91	3688	4290	5700	5200	91.22	+54.55	+32.87	156.00	6.33
2	3	16	174	57	3688	4232	4500	3700	82.22	+22.01	+ 6.33	111.00	3.30
3	5	16	176	75	3688	4230	5450	4650	85.32	+47.78	+28.84	139.50	4.40
4	3	16	160	48	3688	3350	3700	3300	89.18	+ 0.32	+10.45	99.00	4.63

Tablo 6: Individual Parameters of Georgia Stars National Team

					VCi (ml)					VCK (%)			
Sportsman no	Length of Boxing (years)	Age (Years)	Height (Cm)	Weight (Kğ)	According to age	According to heigth	FVC (ml)	FEV_1 (ml)	FEV_1 (%)	According to age	According to heigth	MVV (lt/dk)	FMF (lt/sn)
1	4	16	186	63.5	3688	4380	4950	4600	92.92	+34.22	+13.01	138.00	5.05
2	8	16	187	67.0	3688	4560	5750	4800	83.47	+55.91	+26.10	144.00	3.83
3	5	16	167	60.0	3688	3791	3900	3600	92.30	+ 5.75	+ 8.75	108.00	4.87
4	8	16	167	51.0	3688	3791	3900	3450	88.46	+ 5.75	+ 2.87	103.50	5.27
5	4	15	188	81.0	3350	4590	5700	5200	91.22	+70.14	+24.18	156.00	4.52
6	5	16	186	75.0	3688	4530	5050	4400	87.12	+36.93	+11.48	132.00	3.55
7	5	16	171	71.0	3688	4043	5200	4400	84.62	+40.99	+28.62	132.00	4.06

Table 7: General Information about The Study Groups

Country Name	Age (year)	Heigth (cm)	Weight(kg)	Boks Yapma Süresi (yıl)
Turkey(n=9)	15.88 ± 0.11	175.33 ± 2.79	60.72 ± 3.05*	3.77 ± 0.57
Azerbaijan (n=4)	15.50 ± 0.28	175.50 ± 2.63	72.00 ± 9.14	3.50 ± 0.86
Russia (n=5)	15.80 ± 0.28	173.60 ± 2.15	59.40 ± 4.17	5.00 ± 0.83
Ukraine(n=6)	16.00 ± 0.00	177.00 ± 1.98	72.00 ± 5.53*	4.16 ± 0.70
Moldova(n=4)	16.00 ± 0.00	172.00 ± 4.08	67.75 ± 9.56	3.50 ± 0.50
Georgia (n=7)	15.85 ± 0.14	178.85 ± 3.76	66.92 ± 3.75	5.57 ± 0.64

*:p<0.05

In the values of VC parameters according to age and height given in table 8, it has been observed that while Ukraine National Team's VC values are higher (P<0.05) than the same values of Azerbaijan National Team, there is no difference between the groups in the other comparisons.

Table 8: The Ideal Vital Capacity Values according to age of study groups

Country Name	VCi (ml) According to Age (year)	VCi (ml) According to Heigth (cm)
Turkey(n=9)	3650.44 ± 37.55	4181.66 ± 123.84
Azerbaijan (n=4)	3519.00 ± 97.57*	4196.50 ± 92.28
Russia(n=5)	3620.40 ± 67.60	4148.20 ± 90.93
Ukraine (n=6)	3688.00 ± 0.00**	4253.83 ± 63.41
Moldova (n=4)	3688.00 ± 0.00	4025.50 ± 225.59
Georgia (n=7)	3639.71 ± 48.28	4240.00 ± 135.45

*: P<0.05

Likewise, as a result of comparison the FVC, FEV_1 and FEV_1 (%) parameters belong to mentioned countries national teams, there hasn't been a significant difference statistically between the groups (Table 9, 10). In VCK parameters of which findings are given in Table 11, while Georgia and Moldova boxers' VCK values have been found different from Russia boxers' values according to height, it hasn't been determined any difference between the other groups' VCK values. When the % percent rates of VCK values are analyzed, according to age values, % 28.81 of Turkey, % 30.85 of Azerbaijan, % 21.38 of Russia, % 31.05 of Ukraine, % 31.60 of Moldova, %35.67 of Georgia have been found higher than the necessary ideal Vital Capacities (VCI). Likewise, VCK parameters' % rates have been analyzed according to height, %12.63 of Turkey, %9.01 of Azerbaijan, %6.05 of Russia, %13.25 of Ukraine, %19.62 of Moldova, %16.43 of Georgia rates have been defined to have higher values than the necessary Ideal Vital Capacities.

Table 9: The Forceable Vital Capacity Values

Country Name	FVC (ml)
Turkey	4697.22 ± 133.23
Azerbaijan	4575.00 ± 336.95
Russia	4395.00 ± 99.49
Ukraine	4833.33 ± 288.00
Moldova	4387.50 ± 458.88
Georgia	4921.42 ± 287.61

Table 10: The FEV_1 (ml) and FEV1 (%) Values of The Studying Groups

Country Name	FEV_1 (ml)	FEV_1 (%)
Turkey	4011.11 ± 87.70	85.61 ± 1.58
Azerbaijan	3737.50 ± 331.27	81.50 ± 2.28
Russia	3940.00 ± 79.68	89.72 ± 1.81
Ukraine	4300.00 ± 255.27	89.98 ± 1.09
Moldova	4212.50 ± 434.15	86.98 ± 2.00
Georgia	4350.00 ± 237.29	88.58 ± 1.41

Table 11: The VCK Values According To Age and Height of Study Groups

Country Name	VCK (%) According to age	VCK (%) According to Height
Turkey	+28.81 ± 4.02	+12.63 ± 2.65
Azerbaijan	+30.85 ± 12.51	+ 9.01 ± 7.34
Russia	+21.38 ± 1.35	+ 6.05 ± 2.46*
Ukraine	+31.05 ± 7.81	+13.25 ± 5.11
Moldova	+31.60 ± 12.44	+19.62 ± 6.59*
Georgia	+35.67 ± 9.02	+16.43 ± 3.72*

*:p<0.05, (G-R,M-R)

While in the evaluations of Maximal Voluntary Respiration Volume (MVV), there hasn't been any difference between the groups statistically (Table 12), in FMF parameter, the value of Ukraine National Team has been observed as higher (P<0.05) than Turkey National Team (Table 12).

Table 12: The MVV ve FMF Values of Study Groups

Country Name	MVV (lt/dk)	FMF (lt/sn)
Turkey	120.33 ± 2.63	4.07 ± 0.25*
Azerbaijan	112.12 ± 9.93	4.44 ± 0.88
Russia	118.20 ± 2.39	4.93 ± 0.53
Ukraine	129.00 ± 7.65	4.93 ± 0.40*
Moldova	126.37 ± 13.02	4.66 ± 0.62
Georgia	130.50 ± 7.11	4.46 ± 0.40

*:p<0.05

However, in the evaluations of hematuria and proteineria of which results given in Table 13, it hasn't been identified hematuria in none of the studied subjects before the contest. While hematuria has been come into being in all of the boxers after the contest, it has been observed that 20 boxers have 20-25 erytrocytes in every microscope zones, 10 boxers have 26-29 erythrocytes and 5 boxers have above 30 erythrocytes. Likewise, while it hasn't been observed any proteinuria in none of the samples before contest, it has been identified proteinuria above % 40 percent in fourteen of the 35 boxers.

Table 13: The Hematuria and Proteinuria Values of Boxers

Parameters	Number of boxers that seen Hematuria and Proteinuria	The percentace rates that seen Hematuri and Proteinuri
Hematuri (Before exercise)	-	-
Hematuri (After exercise)	35	100
Proteinuri (Before Exercise)	-	-
Proteinuri (After Exercise)	14	40

Discussion:

The volume and capacities of lung show parallelism with the length of height in the periods of growth. Height, as generally accepted, is a independent and variable parameter in terms of respiration functions (Tiffenau & Pinelli, 1948; Needham *et al.,* 1954; Gandevia *et al.,* 1957; Lyons *et al.,* 1960; Keith *et al.,* 1979; Moser & Bokinsky,1980; Hurley *et al.,* 1984; Ghosh *et al.,* 1986; Hagberg *et al.,* 1988; Joseph *et al.,* 1990; O'Conner & Turker, 1991;Tokuda et al., 1991; Moxon, J.U. 1992; Wanger, 1992).As it has been informed, the sports types which require long-term endurance, affect the respiration parameters with an increasing aspect (Joseph *et al.,* 1990; O'Conner & Turker, 1991; Tokuda et al., 1991;Wanger, 1992).

In the conducted study, that there hasn't been any meaningful difference between the groups according to their age, height, and length of boxing will make the results of the study more reliable. In the comparison of average weight, it has been observed difference to P<0.05 level between only Ukraine and Turkey boxing national teams. It has been identified that the difference between the teams has been aroused from the differences of the boxers' weights. However, it is known that weight of body has less effect on the respiration parameters in comparison with height and length of boxing (Hurley *et al.,* 1984; Hagberg *et al.,* 1988; Joseph *et al.,* 1990).

In the values of VC parameters according to age and height, it has been observed that while Ukraine National Team's VC values according to height are statistically higher (P<0.05) than the same values of Azerbaijan National Team, it hasn't been identified any significant difference between the other national teams comparisons. Furthermore there aren't meaningful differences according to average age, that Ukraine National Team has 16 years and Azerbaijan National Team has 15.50 years average ages make it possible the difference in the VC parameters according to age. In the results of the comparisons of the FVC, FEV_1 FEV_1(%) and MVV of the mentioned countries national teams , there haven't been found any meaningful differences between the groups.

That there haven't been any differences between various countries national teams according to age, height and length of doing sports, can be accepted as the reason of not seen any significant differences in the FVC, FEV_1 FEV_1(%) and MVV parameters (Tiffenau & Pinelli, 1948; Needham *et al.,* 1954; Gandevia *et al.,* 1957; Lyons *et al.,* 1960; Moser & Bokinsky,1980;Hurley *et al.,* 1984; Ghosh *et al.,* 1986; Hagberg *et al.,* 1988; Joseph *et al.,* 1990; O'Conner & Turker, 1991;Tokuda et al., 1991; Moxon, J.U. 1992; Wanger, 1992). In FMF parameter, the value of Ukraine National Team has been observed as higher than Turkey National Team (P<0.05). Likewise, in the comparisons of VCK values, while VCK values of Georgia and Moldova National Teams have been found more different from the same parameter of Russia National Team, it hasn't been identified any meaningful differences between the others. In the VCK and FMF parameters, the differences seen between the countries can be thought to have come out from the performance levels of the sportsmen. Furthermore the differences that were caused by the sportsmen performances are important, how respiration parameters are affected from boxing sports carries much more importance generally.

In physical exercises, muscles' oxygen need is increasing, with the parallelism of this the physiological accordance of respiration system that will supply the need of increasing oxygen comes out. In respiration parameters, the rise about the type of exercise is related to the ability of lungs and ripcage, and the elasticy of bronch and bronchioles. Some sports types that generally require long-term endurance performance are known to affect the respiration parameters significantly. The identifier criteria here is whether the sportsman has reached the maximum level anatomically. In these sports types, besides training, taking respiration into discipline to make the rhythm regular, is accepted as an important control mechanism in increasing the parameters. When the mentioned features are evaluated together, it must be expected that boxing sports affect respiration parameters increasingly.

In the conducted study, the comparison of the Ideal Vital Capacity that sportsmen should have according to age and height, and the Forcible Vital Capacity levels that the sportsmen have reached is very significant because of its identifying aspect of the effects of respiration parameters of boxing sports. In fact, when the percentage rates of Vital Capacity Loss (VCL) parameters are investigated, % 28.81 of Turkish National Team, %30.85 of Azerbaijan National Team, %21.38 of Russia National Team, %31.05 of Ukraine National Team, %31.60 of Moldova National Team, %35.67 of Georgia National Team have been observed to have higher vital capacity values than the necessary values. Likewise, when the percentage rates of VCK values according to height are investigated; % %12.63 of Turkish National Team, %9.01 of Azerbaijan National Team, %6.05 of Russia National Team, %13.25 of Ukraine National Team,%19.62 of Moldova National Team, %16.43 of Georgia National Team have been identified to have higher FVC values than the expected. As a result of the investigation of required data, boxing sports has been appeared to increase respiration parameters of boys dramatically.

Studies about effects on physiological parameters of boxing sports are limited in number. In a study that has been conducted on 9 Elit boxer, that the respiration parameters of these boxers have been introduced to be dramatically higher according to sedantaries supports our obtained results.

In the evaluation of hematuria and proteinuria that happens because of boxing sports, before the contest none of the boxers have been observed to have hematuria and proteinuria. Whereas, in the results of the comparisons of the same values after the contest, it has been identified that all of the boxers have hematuria and %40 of them have proteinuria. After sportive activities, one of the most commonly seen abnormalities is hematuria (microscopic or macroscopic) and proteinuria. This event can be seen both in the individual sports such as running, swimming, pulling, that not require any contacts; and in the individual or team sports, such as football and boxing, that require physical contacts. Hematuria and proteinuria are usually seen in the first urine after effort and ameliorates by resting. Fast healing is an important feature of sports hematuria and proteinuria. The formation mechanism of sports hematuria and proteinuria is multifactor. During exercises, with the increasing of blood flow speed, our blood flow speed in nephron also increases and with the parallelism of this, the glomerular filtration speed increases dramatically. Furthermore, increases are seen in hormonal activities, it becomes effective in renin, anjiotensin, aldosteron and kidneys during the antiduiretic hormon exercises (Amelar *et al.,* 1954; Alyea *et al.,* 1958; Bala *et al,*1971; Castenfors *et al.,* 1967; Castenfors *et al.,*1977; Morgensen et al.,1979; Boileau *et al.,* 1980; Gunby *et al.,*1986; Astrand *et al.,* 1989; Abarbanel *et al.,* 1990; Delbert *et al.,* 1991; Cianflocco *et al.,* 1992; Kallmeyer &. Miller, 1993; Poartmans, 1994).The mechanisms of the homodynamic *differences* that affect protein and erythrocyte giving off from urine. However, exercises with the vasoactive compounds like anjiotensin and neropinephrine can increase the giving off protein-erythrocyte from urine. During exercise, the need of blood in framework muscles, heart and lungs increases and with the parallelism of this, renal plazma and blood flow decrease. This decreasing in renal plazma and blood flow is proportionate with the intensity of exercises. In long-term heavy exercises, the kreatinin klerens decreases and this causes decreasing in urine flow as well. During the effort, these psychopathological changes in kidneys cause hypoxic nephron damage which results in rises in glomerular permeability, and consequently increases in protein and erythrocytes passing to urine occur (Fletcher *et al.,*1977; Fasset *et al.,* 1982; Foulkes *et al.,* 1982; Hurley *et al.,* 1984; Duncan *et al.,*1985). When comparing with respiration parameters, the studies on hematuria and proteinuria that occur in boxing sports are observed to be more intensely. Many researchers argue that especially boxers' urine investigations should continuously be done in order to prevent permanent damages in kidneys. Some authors have investigated examples of 103 boxers' urines before and after contest, and consequently they observed that %73 of the sportsmen had hematuria. In the same study, as a result of % 65 of boxers who race between 1-6 rounds, %89 of boxers who race between 7-12 rounds were observed to have hematuria, it was suggested that there is a relationship between duration of boxing and hematuria (Amelar *et al.,* 1954; Alyea *et al.,* 1958; Bala *et al,*1971; Castenfors *et al.,* 1967; Castenfors *et al.,*1977; Morgensen et al.,1979; Boileau *et al.,* 1980; Gunby *et al.,*1986).

Whereas, in another study, it has been suggested that the hematuria and proteinuria that arouse from boxing sports comes from the intensity of exercises rather than the duration of exercises. In the championship where this study has been carried, that the contest was played with 3 rounds, reveals that hemturia and proteinuria are related to trauma rather than the length of contest. Also, seeing hematuria after contest intensely in all of the boxers attending to the contest is noteworthy. The frequency of seen hematuria is far above the other researchers' suggested rates. However, the studies about the subject are seen to have majored on adults. The results of the scientific studies have showed that regular training in boxing sports and starting boxing before the age 17 is harmful in terms of human health. In the conducted study, the samples have been observed to have started boxing sports at 8-12 ages. Therefore, starting boxing sports at early ages can be said to increase kidneys damages in boxers and with the parallelism of this it can be the reason of the frequency of hematuria and proteinuria (Amelar *et al.,* 1954; Alyea *et al.,* 1958; Bala *et al,*1971; Castenfors *et al.,* 1967; Castenfors *et al.,*1977; Morgensen et al.,1979; Boileau *et al.,* 1980; Gunby *et al.,*1986; Abarbanel *et al.,* 1990; Delbert *et al.,* 1991; Cianflocco *et al.,* 1992; Kallmeyer &. Miller, 1993; Poartmans, 1994).

According to findings at the end of the contest, in addition to boxing sports increases respiration parameters in teenagers, it has been accepted that it can affect urinary system negatively.

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