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**ORIGINAL ARTICLE**

# Hormones and their effects on Athletes' body and Tenability with Neural Network

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**ABSTRACT**
*In most of cases, athletes, especially those who exercise heavy sports, to achieving best result, become their own private physician and use a series of steroid drugs without knowing about their irrecoverable adverse effects, their information regarding these drugs come from their own experiences or other's telling. Unfortunately in some cases, pupils and high school students use these medicines too, without doing sports and exercises. Investigations show that among those who using steroid medicines,11/7% didn't have know anything about them and most of them using these medicines because of other's advises, and 16% had no information about medicine's side effects and 72/3% of them think that available information and data about side effects of these drugs are wrong ,so they used above medicines.*
*By using of Neural Network, we designed a net and presented a diagram which is related to error.The results from regulations with Neural Network has an error less than 1%.In fact,Neural Network has used regress engineering method and amount of consuming necessary doze in each day can be obtained by increasing in certain weight for special athlete as an input.*
*Keywords: Hormones, Neural Network*

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## INTRODUCTION

In modern societies, physical strength and muscularity, is one of the ideal qualities for males. In fact achieving the goal either can be high risk temporarily or can be practical with proper diet, good exercises and under physician supervision permanently [1-6]. One of the reasons for prevailing use of hormone drugs among athletes is lacking drugs testing, since this test is costly[7-17]. As we can see, in most of competitions in every country .medicines test are not performed. Since this test is costly. It is performed only in Olympics [2,3,4,18-21]. So athletes don't fear of disclosing their using medicines, at least in their own country and for this, many sportsmen in semi professional level whose want to be popular, use hormone drugs which make them unhealthy[22-28].

Often individuals, whom by using steroids became successful, deny using them and only saying it to their much closed friend, although they never say that they are suffering from drugs side effects, so their friends have misunderstanding about drugs and their effects [29-35].

According to researches and investigations which performed on this aspects, in most of literature, importance and warring about the harmful effects of steroid drugs explained, so every one who wants to using these drugs because of other's body development resulted of using these drugs, at first neglects their side effects and use it [36-46]]. so in this study, first those aspects which seems positive examined and then their irrecoverable harmful and most important temporary and receivable positive effects are described. Finally, athletes must decide about using or not using these drugs [1].

The main structure of all steroids is composed of 2 components namely Testosterone and Nandrolone which today, by using them and their Derivatives, there are a lot of hormone drugs in wide world and this extend the scope of misusing them[47-52]].

Commercially, Hormones are 2 types: injecting ampoules and oral tablets. The most popular tablets of hormone are Oxy metholone ,Methandienone,Dianabol,... and the most common injecting hormones

are:Testosterone,Nandrolone,Sostanol,Mestabol,Deca,Winstrol,Sostanol, Decasostanol,Omadrine deca nandrolone, Dexaoxy, Stanolozol ,Durabolin ,Anadur.
Each of these drugs has especial applications, for example: increasing mass index, increasing body strength, Endurance, increasing muscular strength, reducing lipid tissue around muscles and losing weigh.

## METHODOLOGY

In following table1, you can see the results of investigations about the main reasons of using drugs among users.

Table 1. Reason of use

| Reasons of use | men | women |
|---|---|---|
| Enhancing muscular strength | 77% | 0% |
| Enhancing sexual qualities | 13.5% | 0% |
| Enhancing performance | 17% | 32% |
| Losing weight | 38.3% | 23.1% |
| Enhancing muscular mass | 49.8% | 9% |
| Increasing mental strength | 31% | 33% |
| Rising weight | 97% | 15.4% |

Now, because the numbers of drug users who use it for increasing their body strength – is high, we examine the effects of one of the most popular drugs namely Dianabol which is used by athletes very much to increasing muscular strength.
For showing Dianabol effects on athletes, we investigate increasing numbers of sinkers in exercises of people who work power lifting and bodybuilding professionally.In following table2 you can see results of our researches.

Table2. result of Neural Network

| days of a complete period Usage of Dianabol | dose of usage in each day(mg) | increasing sinkers compared to first day(kg) | days of a complete period Usage of Dianabol | dose of usage in each day(mg) | increasing sinkers compared to first day(kg) | days of a complete period Usage of Dianabol | dose of usage in each day(mg) | increasing sinkers compared to first day(kg) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 0 | 42 | 26.25 | 25 | 83 | 48.75 | 53 |
| 2 | 2.5 | 1 | 43 | 26.25 | 26 | 84 | 48.75 | 54 |
| 3 | 3.75 | 1.5 | 44 | 27.5 | 27 | 85 | 50 | 54 |
| 4 | 3.75 | 2 | 45 | 27.5 | 27.5 | 86 | 50 | 55 |
| 5 | 5 | 2.5 | 46 | 28.75 | 27.5 | 87 | 50 | 55.5 |
| 6 | 5 | 3 | 47 | 28.75 | 28 | 88 | 50 | 56 |
| 7 | 6.25 | 3 | 48 | 30 | 29 | 89 | 50 | 57 |
| 8 | 6.25 | 4 | 49 | 30 | 29.5 | 90 | 51.25 | 57 |
| 9 | 7.5 | 4.5 | 50 | 30 | 31 | 91 | 51.25 | 58 |
| 10 | 7.5 | 5 | 51 | 31.25 | 31 | 92 | 52.5 | 59 |
| 11 | 8.75 | 5 | 52 | 31.25 | 33 | 93 | 52.5 | 60 |
| 12 | 8.75 | 6 | 53 | 32.5 | 33.5 | 94 | 53.75 | 61 |
| 13 | 10 | 7 | 54 | 32.5 | 34 | 95 | 53.75 | 62 |
| 14 | 10 | 7.5 | 55 | 33.75 | 35 | 96 | 53.75 | 64 |
| 15 | 11.25 | 8 | 56 | 33.75 | 36 | 97 | 55 | 65 |
| 16 | 11.25 | 8.5 | 57 | 35 | 36 | 98 | 55 | 66 |
| 17 | 12.5 | 8.5 | 58 | 35 | 37 | 99 | 55 | 67 |
| 18 | 12.5 | 9 | 59 | 36.25 | 38 | 100 | 56.25 | 67 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 19 | 13.75 | 10 | 60 | 36.25 | 38.5 | 101 | 56.25 | 68 |
| 20 | 13.75 | 10.5 | 61 | 37.5 | 39 | 102 | 57.5 | 69 |
| 21 | 15 | 11 | 62 | 37.5 | 39.5 | 103 | 57.5 | 70 |
| 22 | 15 | 12 | 63 | 38.75 | 40 | 104 | 58.75 | 71 |
| 23 | 15 | 12.5 | 64 | 38.75 | 40 | 105 | 58.75 | 72 |
| 24 | 16.25 | 13 | 65 | 40 | 41 | 106 | 60 | 73 |
| 25 | 16.25 | 14 | 66 | 40 | 42 | 107 | 60 | 76 |
| 26 | 17.5 | 14 | 67 | 40 | 44 | 108 | 60 | 79 |
| 27 | 17.5 | 14.5 | 68 | 41.25 | 44 | 109 | 60 | 83 |
| 28 | 18.75 | 15 | 69 | 41.25 | 45 | | | |
| 29 | 18.75 | 15.5 | 70 | 42.5 | 46 | | | |
| 30 | 20 | 16 | 71 | 42.5 | 47 | | | |
| 31 | 20 | 17 | 72 | 43.75 | 47.5 | | | |
| 32 | 20 | 18 | 73 | 43.75 | 48 | | | |
| 33 | 21.25 | 18 | 74 | 45 | 48.5 | | | |
| 34 | 21.25 | 19 | 75 | 45 | 49 | | | |
| 35 | 22.5 | 20 | 76 | 45 | 49.5 | | | |
| 36 | 22.5 | 21 | 77 | 46.25 | 49.5 | | | |
| 37 | 23.75 | 22 | 78 | 46.25 | 50 | | | |
| 38 | 23.75 | 22.5 | 79 | 47.5 | 51 | | | |
| 39 | 25 | 23 | 80 | 47.5 | 51.5 | | | |
| 40 | 25 | 23.5 | 81 | 47.5 | 52 | | | |
| 41 | 25 | 24 | 82 | 48.75 | 52 | | | |

## RESULTS

According to present data and by using of Neural Network, we designed a net and presented a diagram which is related to error. Figure1 shows the error diagram.The results from regulations with Neural Network has an error less than 1%.In fact,Neural Network has used regress engineering method and amount of consuming necessary doze in each day can be obtained by increasing in certain weight for special athlete as an input[1].

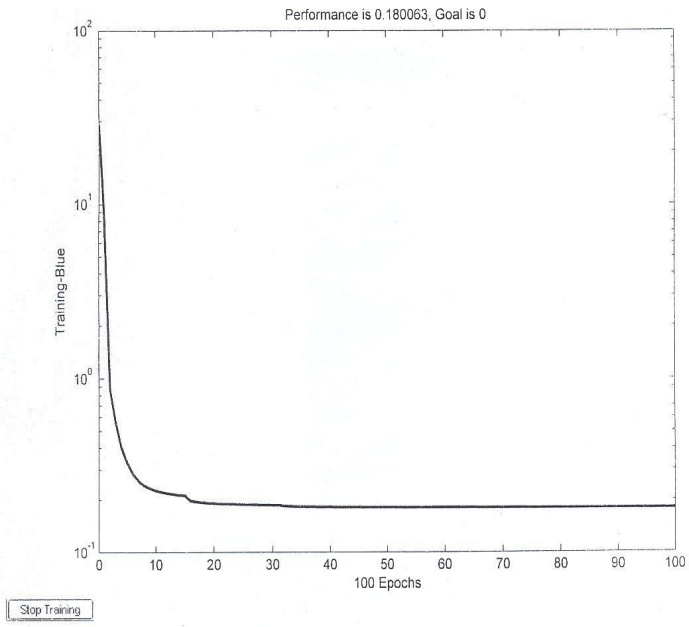


Fig.1. error diagram

## DISCUSSION

Before examining side effects of hormones, it is necessary to recall that each of them has special effects.now we summarized some of the most prevailing and common effects of them.

***a) Harmful effects on muscles and body skelet***

If these drugs used by children who are in development age, they make premature suspension of bony development. As the statistics of table show, Probability of damaging of tendon in athletes- who by using these drugs try to uprising most sinkers-is very high, and this tearing of tendon is just for additional pressure on muscle and this is same case which we have faced it many times and in some cases tearing of tendon causes some one cannot upraise even one 5 kg sinker forever.

***b)Harmful effects on cardiovascular system***

If these drugs used for a long period of time, they cause coagulation and closing vessels .increasing level of LDL makes arteriosclerosis and decreasing of Triglyceride level and reducing high concentration of lipoprotein.

***c)Harmful effect on behavior***

Steroids users, suffering from anxiety and discomfort .there are many reports about their aggressive behavior against their stimulations. The most popular side effects of these drugs are: Depression, psychic problems and antisocial behavior resulted of increasing libido.

***d)Harmful effects on sexual organs***

FSH and LH are necessary in our body ,If some one used steroid drugs, these drugs make dependency on doses in structure LH hormone and stimulate internal glands about FSH hormone and using high dose in one period ,cause infertility .in some cases these drugs increasing risk of prostate cancer and make smallness of testicular in men.

***e)Other prevailing effects***

Hormone drugs misuse in women leading to modeling men's baldness ,hirsutism ,smallness of breast and menstruation ,acne ,dermatological, fatness of skin and hair ,cancer ,cahexia ,anemia ,increasing retardation and cardiovascular and behavioral problems as explained before. And in men cause premature Moult ,acne fatness of skin and hair,dermatological increasing lipid tissue ,cachexia,anemia ,increasing retardation and escalating muscular , cardiovascular , sexual and behavioral problems as we said before These drugs influence directly on liver and destroy enzymes AST,ALT,LOH,CK which cause hepatitis and cholesterol and liver cancer and they influence on kidney and cause increasing serum urea ,serum uric acid and Hyperphosphataemia.

As we said, knowledge of people who use these drugs comes from their own experiences and other's telling, so n2eglecting these drugs can be their enemy. Solving this problem needs complete efforts including making culture in our society and verifying that positive effects of these drugs are temporary and unstable, while their negative effects are stable and permanently and with good diet and continuous exercises we can achieve best results compared to hormone drugs this results stable.[1]

It is better to say that medical setting pharmacy don't give this drugs without doctor prescription and health ministry must control the shops and settings which sell drugs ,so athletes can study more about their side effects before using them. Finally rejecting popular athletes who used this drugs for being popular ,can be very effective preventing other athletes misusing of drugs because these efforts is good for keeping athletes and society healthy.

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