

The Effect of a proposed Resistant training program TRX on some Physical and Physiological properties for Divers

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Abstract

This study aims to investigate the effect of a proposed Resistant TRX training program on some physical and physiological properties for divers .

Methods : 10 divers were participating in the study aged (25-30y.) . They were subjected to a Resistant Exercise training program TRX at Hurghada divers lodge center , Intercontinental Hotel . Using Padi Program and Resistant Exercise training program TRX from 1st May 2015 to 31th July 2015.

- Using Nitrox Gas 45 mins max / Diving .
- Running test was performed for 15 .km. , push up, set up , parralel Bar , jumping up for physical tests
- Calcitonin hormone , Testosterone and calcium concentrations for physiological properties .

Results : indicated a significant increased of the physical and physiological properties after the resistant : training program TRX

Conclusion : The resistant training program improved both physical and physiological properties

It is Recommended to use the Resistant program TRX in different diving training localities

Key words : Resistant Exercise training program TRX. physical , physiological properties

Introduction :

Resistant training is modality of exercise that has grown in popularity over the past two decades particular for its role in improving athletic performance by increasing muscular strength, power,

speed hypertrophy, local muscular endurance, motor performance, balance and coordination (kraemer and Ratemess, 2004). Resistant training is recommended by national health organizations

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(American college of sports Medicine) and American heart Association (kraemer et al, 2002) for most populations, adolescents, healthy adults, elderly and clinical population (Diseased with cardio vascular). The key factor to success is the appropriate program design, technique, breathing, correct of equipment (Mazzetti et al, 2000).

It is important that resistante training should be supervised by professionals for the prevention injury and maximizing the health and performance benefits (Potteiger et al , 1995)

This study aims to investigate the effect of a proposed resistant training program TRX on some physical and

physiological properties of the divers.

Research hypothesis

There are significant differences on some physical and physiological properties of the divers due to resistant training program TRX for the sake of post program.

Subjects and Methods:

Research sample : 10 divers were participating in the study aged (25-30y) Table (1) indicated the characteristic feature of the participants .

They were subjected to a resistant training TRX using elastic rope ring, at hurghada divers lodge center , Intercontinental hotel , The resistant program TRX duration lasted from 1st May 2015 to 31th July 2015., twice per week by training units lasted for 45 min .

**Table (1)
characteristic features of divers**

Variables	Mean	SD	Skewness
Age(y)	27.8	5.4	1.6
Weight kg	80.4	7.5	1.1
Height cm	179.4	11.6	.74

Skewness of the participants were (+3) indicating homogeneity

The physical tests before and after the program was constituted of :

- Running test for 15 km .

- Push up.
- Set up.
- Parallel bar.

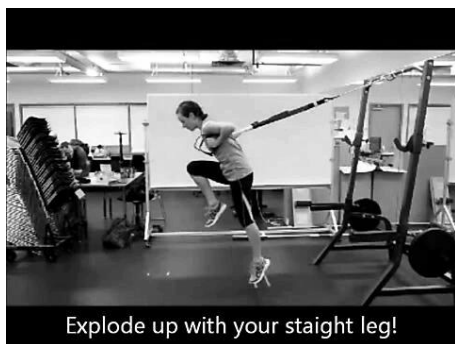
-Jumping up.
Using the convenient equipments



(image 1)



(image 2)



(image 3)



(image 4)



(image 5)



Start: like a plank!

(image 6)



Start: minimum 45 degree angle
(more to increase difficulty)

(image 7)



(image 8)

The physiological parameters included

- calcitonin Hormone using kit and Eliza technique.
- Testosterone hormone using kit and Eliza technique
- Calcium concentration using flame photometer .

The resistant training TRX included :

- Muscle actions : This include primany dynamic repetition (komi et al (1987)
- Exercise selection (Fleek and kraemer 1997)

- Exercise order (Sforzo ,c, Touey , R (1996)
 - Loading (kraemer and Ratmess 2000)
 - Training volume (Hakkinen et al 1987)
 - Repetition velocity (Eloranta and komi 1980).
 - Frequency (Coyle et al 1981)
- statistical Analysis using SPSS for :
- Arythmatic Mean
 - Standard deviation
 - T test
 - P < 0.05

Discussion

The research hypothesis

" There are significant differences on some physical and physiological properties of the divers due to resistant training program TRX for the sake of post program.

(Table 2) indicated the changes of physiological parameter (calcitonin hormone, Testosterone and calcium concentrations before and after the resistance program TRX, significant differences were noted for the sake of post program .

Barrett et al (2010) reported that secretion of calcitonin increased when the thyroid gland is exposed to plasma calcium level of approximately 9.5mg/dl. above this level, plasma calcium is directly proportional to plasma calcitonin, they also added that Dopamine and testosterone also stimulate calcitonin secretion . This is in agreement with the results of the study, as the resistance training program led to a significant increase calcitonin , calcium and testosterone level . Also some others studies reported that calcium increase

help in the strength of the skeletal muscle contraction lead to increase in power of running , push up and parallel bar execution together with increase of the level of jumping up.

As for Testosterone which exert an anabolic effect on skeletal muscle , it increase the synthesis of protein , leading to an increase in the rate of growth of the muscle also with conjunction of calcitonin and calcium levels affect the bone structure and increased its density and testosterone exert a masculinizing effect which increase the power of the muscles . The increase testosterone is in synergistic action with the pituitary hormones FSH , LH which are the stimulatory hormones inducing increase in testosterone of the testis and adrenal gland leading to its increase in the blood and affecting the muscles .

[Adeyanju, 1993, Anderson (1982) Baker et al 1994, Baker et al ,2001) [Brown (2007) Nijenhuis et al 2005, Renkema et al , 2008 , Maclaughin (2004)

Table (2)
calutinin , testosterone , calcium before and after the resistant program TRX

Variables	before		after		T
	M	SD	M	SD	
Calcitonin mg/dl	53.2	6.1	66.4	7.2	5.8
Testosterone mg/dl	13.2	3.1	17.6	3.6	4.1
Calcium mg/dl	8.7	1.2	9.8	1.3	3.2

P< 0.05 significant different for the sakeob post resistant program

Table (3)
running test , push up , set down parapll bar , jumping up before and after the resistant program

Variables	before		after		T test
	M	SD	M	SD	
Running test is km (m.)	100	5.8	85	6.1	6.4
Push up (No)	20	3.1	30	3.3	5.1
Setup (No)	25	4.2	35	4.6	4.2
Parralelbar (No)	8	1.3	20	1.5	8.9
Jurmping up (No)	18	4.1	30	5.2	5.3

pL 0.05 table in dicated a significant diffrences pre-post resistant program for the sake of post program

As for the physical abilities of the divers table (3) indicated an increased in running test . push up . set up , parrelal bar and jumping up . The increase in the physical abilities indicated that resistance training program TRX led to an increase positive result and the muscles were affected positively to be more powerful and have more

strength and explosive power noted in jumping up tests .

These increase in physical abilities were the results of the increased calcitonin hormone , testosterone hormone and calcium level.

This is in agreement with those of (Wilson 1993 , Guyton and Hall , 2006 , Ganong 2000) . from the preceding discussion indicated that the research hypothesis has been realized.

Conclusion

The resistant training program TRX improved both physical and physiological properties.

Recommendation:

It is recommended to use the resistant training to different diving training localities .

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