



Evaluating the Effectiveness of Using Stretch Exercises as a Recovery Strategy

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Abstract:

The purpose of this study is to assess the effectiveness of using stretching exercises as a means of restoring healing (recovery) and compare it with negative comfort using the experimental method and the most important recommendations is guiding the training process based on the use of stretch exercises As a means to maintain the motion range, not as a means to recovery between Intervals or after the end of the training units.

Keywords: Blood lactate, Enzyme for lactate dehydrogenase (LDH)

Introduction to the study:

Establishing the contents of the training programs and work plans is largely related to the truthfulness and abundance of information used when preparing it, and information's we collect through measurement and the composite assessment, and assessment is aimed to a comprehensive and multi-faceted review of the level of Athletes preparation through tests or complex tests, whether interim or in-depth, during which the indicators of physical condition are recorded (2: 3).

The players are prepared during the training process in order to reach the best levels of performance and excellence in various sports activities and sports season is essentially a successive form of biological processes, are biochemical and morphological and physiological changes occur in a player's internal devices under the effect of training and many other factors. (5:64, 65)

Also, good preparations for higher level athletes depends primarily on the relationship between loads and comfort them so that for sport training loads required in the phase of preparation necessarily needed quickly get rid of tiredness and athlete access to Full or relative comfort condition of complete physical exercises again. (4:77)

a recovery problem in modern sports training no less important than training ,so that increased training intensity and its size Without taking into account intra-comfort

periods whether during the training dose or during the days between the training doses, Recovery methods vary among the pedagogical methods used by the trainer during the training load planning as well as, the means that are used to restore the balance of muscular work and the subsequent physiological load of devices in addition to the psychological means, it is argued that the most important physiological processes affecting the nature of performance Is the efficiency of the player in rapid recovery processes that occur during the game itself and during these operations, the body can compensate for ATP/PC muscle where phosphate takes 2:3 minutes, as it can compensate for the inventory oxygen within the muscle combined with Myoglobin United during 1:2 minutes. (3:5)

The evaluation and planning of loads are the most important elements (components) of sports training, and the specific indicators being used in the evaluation are characterized by multiplicity and multi-form (types), this is explained by the fact that for every type of sporting activity dozens of training methods these, in turn, include hundreds of Exercises the evaluation represents each of these methods and exercises and then chooses the most effective of it one of the main duties for loads evaluation . while requires the solution of this duty (evaluation of training means) the need to build on the basis of the classification of training methods to distribute them in

groups according to specific characteristics and features. (2:383).

Study Problem:

The exercise of sports training is one of the most important components of sporting activity and in addition to the player who is at the focuses of this activity, but the training process is centerpiece of elevated level of the player, also to identify the exact details of the training process is the basis of the player's success both in terms of the possibilities available or from During the development of modern training methods, not only this but the periodic and continuous review of training methods and physical traits have an impact on the aspects a different body has become a factor that wanders the ideas of many researchers and the need to guide the training process on the basis of proper calendar, so that Many instructors make the most of those items at the right time and integrate them during the training to reach the best possible level of sporting activity

The basic elements of fitness are the basic structure through which the trainer builds the basic unit. The dynamic of the disciplined training unit is the basis for the development of the player's characteristics. And the great role of the player in the training process has always been what mobilizes the mathematical world to develop training methods to develop these physical qualities or even guide them in order for a deeper understanding of those qualities.

Stretching exercises are one of the most commonly used exercises during training modules in various sporting activities, which are used by many trainers in scattered parts during the one training module and are usually used after warm-up operations and prevention, and are used at other times During the rest intervals and at the end of the training units for the purpose of fast recovery (lactate disposal).

Lactic acid is the main axis to illustrate how much muscle fatigue is, and this is consistent with Abu El Ela (2003) (1) Thus, the disposal of lactic acid in the muscles will allow physical activity to be re-practiced efficiently and effectively and in this connection refers to forms of disposal of lactic acid by (the exit of lactic acid from urine and sweat, switching to glucose, glycogen and glucose, turning acid Lactic protein, lactic acid oxidation

Performing stretching exercises before or after performing workouts is ineffective on muscle pain and also does not provide sufficient muscle protection from the risk of injury

but global results are needed to be tested and insufficient research has been done to determine the effects of lengthening on mathematical performance, prompting researchers to evaluate the effectiveness Use stretching exercises as a means of healing recovery (8).

Here the researchers stood upon their expertise in training and assessment by field exercise by another, desiring to steer the training process based on measuring methods and accurate evaluate, learn what is the inherent role for use in stretching exercises in the training units?

And are really stretching exercises working on a rapid recovery? And what the role of the stretching exercises in upgrading the training units by increasing repetition of different training through the use of recovery exercises as a way to preserve the body and prevent player fatigue during Unit for frequent use commas between the unit parts Where the player regains its natural training by getting rid of lactic acid quickly and rotation drills for other physical traits.

The aim of the study:

The research aims to Evaluate the effectiveness of using stretching exercises as a means of recovery methods.

- 1- Evaluate effectiveness using stretching exercises as a means to recovery from the lactate.
- 2- Evaluate effectiveness using stretching exercises as a means to recovery from the lactate dehydrogenase enzyme recovery (LDH).

Study questions:

- 1- Are there any statistically significant differences between the recovery methods using stretch exercise and negative comfort in lactic acid?
- 2- Are there any statistically significant differences between the recovery methods using stretch exercise and negative comfort in a lactate dehydrogenase enzyme (LDH)?

Study procedures:

Study Approach:

The researchers used the experimental approach using the experimental design of a single experimental set in a method (repeated measures using negative comfort) then (repeated measures using stretching exercises)

Sample study:

The sample was randomly selected from players from Taekwondo, Wrestling, Football), with a total 8 players. different sporting activities (Athletics, Swimming,

Table (1)
Statistical Characterization of Pre-Trial Research Sample (Time of Rest) (N=8)

Statistical Significance Variables		measuring unit	Average	Median	Stander Deviation	Skewness
Negative comfort	Pulse	Beats Minute /	71.25	68.50	15.23	0.53
	spo2) (Oxygen saturation	%	98.75	99.00	0.46	-1.44
	blood lactate	mg/dl	10.86	10.39	2.19	0.36
	LDH lactate dehydrogenase enzyme	U/L	432.25	426.50	62.32	1.41
Stretching exercises	Pulse	Beats Minute /	68.00	66.50	14.70	0.07
	spo2) (Oxygen saturation	%	98.63	99.00	0.52	-0.64
	blood lactate	mg/dl	14.69	14.65	2.25	0.57
	LDH lactate dehydrogenase enzyme	U/L	384.25	387.00	57.81	0.90
Running 1500 meter		minute	5.99	5.84	0.69	-0.06

Illustrated by a table (1) of the research variable samples shows that the variables are moderate and are characterized by the natural distribution of the specimen, where Skewness coefficient is between (-1.44 to 1.41) and these values are approaching zero, confirming the normality for variables before the experiment.

Study tools:

- Oxygen saturation device and pulse rate
- Stopwatch for time calculation.
- Test tubes for blood sample analysis
- Needles for a Blood sample
- Antiseptic and adhesive medical



Oxygen saturation device and pulse rate

Study measurements:

- Pulse rate.
- Oxygen saturation.
- Lactic acid concentration in the blood
- lactate dehydrogenase enzyme (LDH)

- Time of running 1500 meters.

Steps to implement the study:

- The basic study was applied and implemented on the research sample from 21/10/2017 to 25/10/2017

- The researchers conducting the first measurement based on negative comfort style on the date of 21/10/2017 as divided into three stages or measurements

Phase 1: measurement of pulse rate and oxygen saturation and lactic acid concentration in blood lactate dehydrogenase enzyme rate L D H in rest time.

Phase 2 (a): the players perform warm up by running time duration to 7 minutes and then start processing run distance 1500 meters

Phase (b): measuring the level of concentration of lactic acid in the blood and the rate of lactate dehydrogenase enzyme L D H after 1500 meters in 6 minutes.

Phase 3: measure the concentration of lactic acid in the blood and the rate of lactate dehydrogenase enzyme L D H after 1500 meters was 16 minutes what a difference 10 minutes on stage two and players In a state of negative comfort

The researchers conducted the second measurement, which is based on the method of stretching training on 25/10/2017, where it was divided into three stages or measurements:

Phase 1: measurement of pulse rate and oxygen saturation and lactic acid concentration in blood lactate dehydrogenase enzyme rate L D H in rest time .

Phase 2 (a): the players perform warm up by running time duration to 7 minutes and then start processing run distance 1500 meters

Phase2 (b): measuring the level of concentration of lactic acid in the blood and the rate of lactate dehydrogenase enzyme L D H after 1500 meters in 6 minutes .

Phase 3: measure the concentration of lactic acid in the blood and the rate of lactate dehydrogenase enzyme L D H after 1500 meters was 16 minutes what a difference 10 minutes on stage two and players In a state of negative comfort

Evaluation of healing recovery according to the style of comfort and passive stretching exercise method through the comparison of two methods to measure the level of concentration of lactic acid in the blood and the rate of lactate dehydrogenase enzyme LDH .

Passive Comfort			Stretching exercise		
First measurement)In rest time(Second measurement after(Running 1500 meters with time 6 minutes)	Third measurement after(Running 1500 meters with time 16 minutes (First measurement (In rest time)	Second measurement after(Running 1500 meters with time 6 minutes	Third measurement after(Running 1500 meters with time 16 minutes

Statistical Processors

- Average
- Stander Deviation
- Median
- Skewness

- Paired Samples T test
- The percentage of change%

Results and discussion

View the results of the search sample for both the passive comfort method and the method of stretching exercises in search variables.

Figure (1)

Shows the average of the passive comfort method and the Stretch exercise in repeated measures for the blood lactate of the experimental group

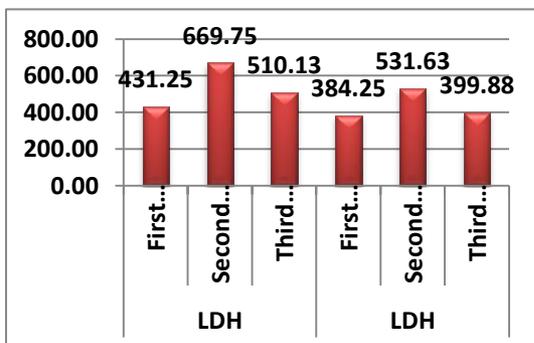


Figure (2)

Shows the average of the passive comfort method and the Stretch exercise in repeated measures for lactate dehydrogenase enzyme (LDH) of the experimental group

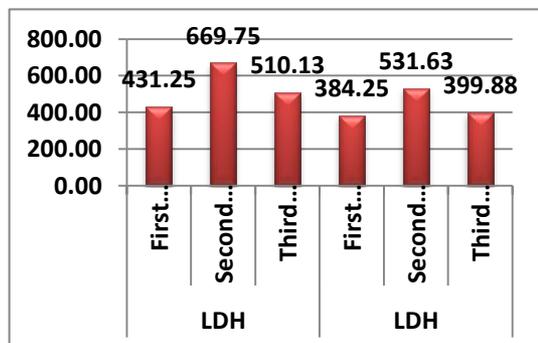


Table (2)

The statistical significance and the rate of change for the experimental group of both the passive late method and the technique of stretching exercises in search variables n = 8

Statistical Significance Variables	Passive Comfort (difference between second and third measurements)		Stretching exercises (difference between second and third measurements)		Difference Between the two averages		(T) Value	Percentage change%
	Mean	±STD	Mean	±STD	Mean	±STD		
Blood lactate	14.15	14.87	9.35	5.25	4.80	14.59	0.93	33.92%
lactate dehydrogenase enzyme(LDH)	159.63	120.52	131.75	63.06	27.88	107.71	0.73	17.46%

*Significant at 0.05 level

Figure (3)

Shows the average of the passive comfort method and the practice of lengthening the blood lactate of the experimental group (difference between second and third measurement)

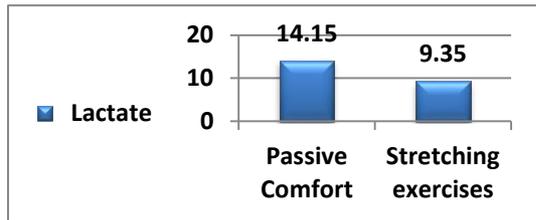


Figure (4)

Shows the average of the passive comfort method and the method of stretching exercises in the lactate dehydrogenase enzyme (LDH) of the experimental group. (difference between second and third measurement)

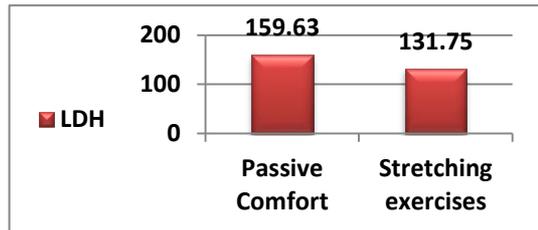


Table 2 and Graph (3)(4) show no significant differences at the level (0.05) in all variables, the calculated value (t) was less than the indexed (T) value at (0.05) = (2.36) by a change relative (33.92%, 17.46%) respectively and in favor of passive comfort where the difference in the lactate variable is related to the blood lactate between the second measurement (after being 1500 m in 6 minutes) and the third measure (after 1500 m 16 minutes) for passive rest 4.80 mg/dl with a change percentage of 33.92%, The difference in the lactate dehydrogenase enzyme (LDH) variable was between the second measurement (after 1500 m in 6 minutes) and the third measurement (after 1500 m 16 minutes) for passive rest 27.88 unit/L with a change percentage of 17.46%.

Discussion:

The study showed that there are no significant differences between the use of stretch exercises as a means of recovering recovery and not using them (passive comfort) for the same purpose whether in its effect on lactic acid or enzyme for lactate dehydrogenase that is consistent with Mika et. 2007 (7) In a comparative study of methods of Recovery of healing on muscular performance after the use of stressful exercises where researchers have used three methods of healing recovery, which is the positive comfort and convenience negative and elongations but using a different measurement method are electrolytic

(EMG) on one muscle whose results showed that there are no differences Morale when using the lengthening on the level of fatigue within the muscle.

Based on the results of this research, researchers are directed that many instructors must be sensitized to the goal or purpose of using stretching exercises it must be clarified if the purpose of its use is to increase the kinetic range. That purpose is procedurally acceptable, and this is consistent with the study of William. An ET. 2013) (9 the title of the lengthening and its effect on recovery and those who agreed on the same purpose and not as a means of recovering healing.

Also agrees with Rob Harbit and Miguel Gabriel (2002) (8) that the stretch exercises before or after performance exercises are ineffective on muscle pain and also does not provide adequate protection of muscles from the risk of injury but generality of these results need to be tested and insufficient research has been done to determine the effects of stretch exercises on sport performance.

Harbit and Amber and Others (2011) (6) Confirm that the use of stretching exercises before or after workouts is not affected on muscle pain relief based on the reference survey of twelve studies.

Conclusions:

- 1- There are insignificant differences between passive comfort and stretching exercises in the rate of accumulation of lactic
- 2- There are insignificant differences between passive comfort and stretching exercises in the enzyme of lactate dehydrogenase.
- 3- There are no effective for stretching exercises as a method of recovery.

Recommendations:

- 1- Directing the training process based on the use of stretching exercises as one of the means of maintaining the kinetic range and not as a means to restore recovery between inter-breaks or after the completion of the training module.
- 2- Increase the awareness of trainers in the field of sports training to organize training units without exaggerating the use of stretch exercises as a means to recovery healing.

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