

The Effect of Recovery of the Number of Heart Rates through the Use of Rest in the Small Training Unit

Dr. Mahmoud Mousa Al Shudifat

Jordan

Telephone: 0796233136

Email: mahsh_135[at]yahoo.com

Abstract: *The study aimed to identify the effect of both positive and negative rest on the number of heart rates and comparison between them in terms of speed of recovery and return of heart rates to normal or around it was tested through two groups used with each type of comfort and the researcher found a significant effect of the two species on the heart rates with a preference for positive rest recommended the study to circulate to the federations to benefit from and included in the programs that are taught in the training courses for the benefit of trainers and program developers training courses.*

Keywords: (physiology of sports training, recovery, heart rates)

1. Introduction

Sports activity is a response to training stimuli performed by the players to develop their abilities to achieve the desired sports achievement as we know, but this activity needs to rest periods for the athlete with great benefit because lack of attention will lead to fatigue and stress and sports injuries that can end his competitive life.

The development and access to sports achievement cannot happen if the attention is not paid in the training program, which includes regular periods of rest and after training or competition and the training program that does not contain a recovery stage after any small or large training unit will be a training defect Lack of knowledge or weakness in the coach. (Sayed, 2003)

In order to reach the athletic achievement, an experienced coach is able to organize an integrated training program that does not overlook intermittent breaks. After the training module, the player can regain recovery to overcome the effects of physical exertion that has affected the functional systems of the body and return to normal. (Abul-Ela, 1999)

The neglect of recovery in the training program leads to the decline of the level and achievement rather than rise. (Khraibet, 1997)

Recovery in the general sense is the restoration of the renewal of the indicators of the physiological and psychological state of the human being after being under pressure or exposure to the impact of the performance of a particular activity.

All definitions of recovery revolve within the definition of (ISIS) with different word order or manipulation.

Accordingly, recovery is the period following the performance during which all or some of the effects left by the athletic performance are removed and the player is re-trained. (Kilani, 2000)

Department of (Abu Ela) citing (Blanov) recovery into two periods are early recovery and late recovery means the first to return the body to its normal state and get rid of the effects of fatigue resulting from the small training unit or the game, which needs minutes or hours, depending on the intensity of performance.

The delayed recovery period is concerned with structural changes that help the success of the functional adaptations through the physiological reactions of the body resulting from multiple training loads that require hours or days. (Khraibet, 1997)
Intermittent breaks between groups and repetitions should not be overlooked during and after the end of the small training unit. (Khraibet, 1997)

The focus of this study will be on two types of early recovery: positive recovery based on calming exercises such as light jogging and walking at the end of the training session for a period of 10-15 minutes and will be tested negative recovery in which no activity will be used.

2. The Importance of Studying

The importance of this study is to indicate the importance of recovery during and after the training dose in various sports and sports competitions and the role of rest periods in the training program and after to reach the players to the higher levels and sports achievement and to avoid fatigue, stress and sports injuries.

3. The Study Problem

The recovery period, whether during the training unit or

after the competition or after the competition is a major part of the training program and competitions and the delay of many Arab teams, whether in individual or group games due to the progress in sports achievement resulting from the lack of attention paid by coaches for this topic, resulting in the arrival of players to Stress or injury stage.

4. Objectives of the Study

The study aims to identify:

1. The difference between the use of positive rest and negative rest on the return of the heart rats of the players to normal.
2. The time required by the heart to return to its position before the start of sports performance.

Study Questions:

1. Is there a statistically significant difference to use positive rest in the return of the heart rats to the position of the player before or around the exercise.
2. Is there a statistically significant difference to the use of negative comfort in the return of the heart rats to develop the player before or around the exercise.
3. Is there a statistically significant difference in the time to return to the heart rats before or around training.

Study Approach:

The researcher used the experimental method in the survey method to suit the nature of the research.

Study population:

Football players are professional and first class clubs in Jordan/ Mafraq Governorate.

The study sample:

The research sample was selected from a number of players from Jordan/ Mafraq governorate who played in professional clubs and the first class of the sports season 2018/2019 in the Jordanian Football Federation and the number of ten volunteer players.

Table (1):

First sample:

Measure the number of heart rats for a positive rest group.

Num	Player's age/year	Player's training age/ Year	First measurement After 5 minutes	Second measurement After 10 minutes	Third measurement After 15 minutes	Fourth measurement After 20 minutes
1	31	14	170	145	100	70
2	28	11	175	140	90	65
3	26	8	172	135	94	67
4	25	7	165	125	105	68
5	29	12	160	120	90	62

Means of information collection:

Measuring the number of heart rats of the players after a 90-minute training session with high intensity.

Fields of study:

Spatial field:

Prince Hashem Stadium in Mafraq.

Time domain:

20/4-2 / 5/2019.

Human field:

Players of professional clubs and first class from Mafraq Governorate who played in the 2018/2019 season and mentioned in the number one supplement.

Study Procedures:

The sample was randomly divided into two equal parts (5-5).

The first group used positive rest and the second negative rest.

The two groups were trained for 90 minutes with high intensity during intermittent breaks as well as the groups during the training.

The second group was in a state of negative rest on the bench and without any physical exertion.

Ten donors from the Jordanian Ministry of Health were used to measure the number of heart rhythms of the players using palpation on the carpal artery. (Kilani, 2005)

And shown in Statement No. (2).

The reading was taken consecutively after 5-10-15 and twenty minutes for each player after a positive rest for five players and like them a negative rest was started with them after five minutes.

Table (2):**The second sample:**

Measure the number of heart rats for the negative comfort group.

Num	Player's age/year	Player's training age/ Year	First measurement After 5 minutes	Second measurement After 10 minutes	Third measurement After 15 minutes	Fourth measurement After 20 minutes
1	27	8	185	165	120	90
2	29	10	180	170	130	85
3	28	11	165	140	115	86
4	26	7	170	130	130	80
5	25	6	180	150	125	95

View and discuss results:**Table (3):**

Values of arithmetic averages and standard deviations for age and training age variables for each group:

The sample		The sample negative rest group		The variables of the positive rest group		Variables
Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	
1.96	27.40	1.58	27.00	2.39	27.80	Age (years)
2.59	9.40	2.07	8.40	2.88	10.40	Age of training (years)

Table (3) presents the mean values and standard deviations for the age and training age variables for each group. As for the training age variable, the mean value of the positive rest group was (10.40) years and the negative rest group was (8.40) while in both groups it was (9.40).

Table (4):

Values of Arithmetic Means and Standard Deviations of the Heartbeat Variable in Two Rest Cases Distributed by Measurement Periods:

Negative Comfort		Positive Comfort		Measurement	Variable
Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean		
8.22	176.00	5.94	168.40	after 5 minute	Heart rats (pulse / minute)
16.73	151.00	10.37	133.00	After 10 minute	
6.52	124.00	6.57	95.80	After 15 minute	
5.63	87.20	3.05	66.40	After 20 minute	

Table (4) shows the mean values and standard deviations of the heart rates variable in the two resting cases distributed by measurement periods. It is clear that the values of these averages differ from each other over the measurement time (recovery) in each group. Statistically, the differences between these values in each group were also used. The following results illustrate the test of the three questions in question.

The first question:

Is there a statistically significant effect at the level of 0.05 for the use of positive rest on the variable heart rate recovery?

Table (5) Results of Single Variable Analysis of Repeated Measurements of Heart rates Recovery Variable after Positive Rest

Significance Level	Value f	Average Squares	Degrees of Freedom	Total Squares	Source Variance	Variable
0.000	293.75	9838.20	3	29514.60	Measurement	Heart rate (pulse / minute)
		33.49	12	401.90	Error	

Table (5) indicates that the calculated f value was (293.75) which is a statistically significant value at 0.05 because the value of the calculated significance level (0.000) was lower which means that the values of the four heart rate

averages differ among them in the positive rest group and to determine which Of these four measurements, which may differ statistically differently was used (Bonferroni test) The following table shows the results of this test.

Table (6) Bonferroni Test Results for the Significance of Binary Mean Differences of the Heart rates Recovery Variable after Positive Rest:

After 20 minutes	After 15 minutes	After 10 minutes	mean measurement	arithmetic	Variable
*	*	*	168.40	after 5 minutes	Heart rates (pulse / minute)
*	*		133.00	After 10 minutes	
*			95.80	After 15 minutes	
			66.40	After 20 minutes	

(*) Indicate that the mean pulse of the two measurements D statistically at the level of 0.05>

Based on the results of the differences in the mean values of the heart rate variable shown in the table shows that the four measurements (reflecting the different measurement times) differ between them and therefore the differences exist between any two measurements so that the significance of this difference is in favor of the measurement with the least arithmetic mean of recovery and return The researcher attributed this to the gradual return of pregnancy and the increase of oxygen gained in addition to the utilization of lactic acid converted to energy helps to speed recovery and concordance of these

results (study Safaar, 2014) and study (Fox, 1974). With this result, the hypothesis of the study is accepted and positive rest is considered to have a positive effect on cardiac recovery during the four indicated time periods.

The second question:

Is there a statistically significant effect at the level of 0.05 to use negative rest on the variable heart rate hospitalization?

Table (7) Results of Single Variance Analysis of Repeated Measurements of Heart Rate Variable after Negative Rest.

Significance Level	Value f	Average Squares	Degrees of Freedom	Total Squares	Source Variance	Variable
0.000	96.96	7236.72	3	21710.15	Measurement	Heart rate (pulse / minute)
		74.63	12	895.60	Error	

Table (7) indicates that the calculated value of f was (96.96) which is statistically significant at 0.05 because the value of the calculated significance level (0.000) was the lowest which means that the values of The four heart

rate averages differ among them in the negative rest group and to determine which of these four measurements can be statistically different..

Table (8) Bonferroni Test Results for the Significance of Binary Mean Differences of the Heart Beat Recovery Variable After Negative Rest:

After 20 Minute	after 15 minute	after 10 minute	mean measurement	Arithmetic	Variable
*	*	*	176.00	after 5 minute	Heart rate (pulse / minute)
*	*		151.00	after 10 minute	
*			124.00	after 15 minute	
			87.20	After 20 Minute	

(*) Indicate that the mean pulse of the two measurements D statistically at the level of 0.05

Based on the results of the differences in the mean values of the heart rate variable shown in the table shows that the

four measurements (reflecting the different measurement times) differ between them and therefore the differences exist between any two measurements so that the significance of these differences is in favor of the measurement with the least arithmetic mean of

hospitalization and return The pulse to the normal level of the normal person and the researcher justifies the result slowly restoration of the pulse compared with positive rest fatigue, which led to a slow response to oxygen to compensate for the energy lost and this came in line with the study of (Khraibet, 2019) and study (Hini, 2018). With this result, the hypothesis of the study is accepted and

negative rest is considered to have a positive effect on cardiac recovery during the four indicated time periods.

The third question:

Is there a statistically significant difference at the level of 0.05 between the time of use of any positive rest and negative rest on the variable heart rate recovery.

Table (9) Results of Binary Variance Analysis with Frequent Measurements of Heart Rate Variable by Comfort

Significance Level	Value f	Average Squares	Degrees of Freedom	Total Squares	Source Variance	Variable
0.001	23.77	3478.23	1	3478.23	Group	Heart rate (pulse / minute)
		146.31	8	1170.50	Error	

Table (9) indicates that the calculated (f) value was (23.77) which is a statistically significant value at 0.05 because the value of the calculated significance level (0.001) was the lowest which means the positive and

negative rest groups are different in the values of the four heart rate averages and to determine which of the These four measurements can be statistically different.

Table (10) Indication of Binary Mean Differences of Heart Rate Variable by Resting Nature

score	level indication	the two sets of comfort	measurement	Variable
-	0.132	Positive- negative	After 5 minute	Heart rate (pulse / minute)
-	0.075	positive - negative	After 10 minute	
*	0.000	positive - negative	After 15 minute	
*	0.000	positive - negative	After 20 minute	

Table (10) shows that the positive and negative rest groups did not differ statistically significantly in the values of the mean heart rate variables at the measurements (after 5 m) and (after 10 m) where the values of the level of significance (0.132) and (0.075), respectively. The two groups differed in the measurements (after 15d) and (after 20d) as the values of the significance level reached (0.000) and (0.000) respectively so that the significance of differences in these measurements between the two groups was in favor of the comfort group The mean values for the heart rate variables in this group (95.80) and (66.40), respectively, were lower than in the negative rest group (124.00) and (87.20), respectively.

1. Disseminate the results of this research to the sports federations for dissemination among trainers and include training programs to benefit from its results.
2. Conducting more comprehensive studies on various games and more samples to reach more accurate results.

5. Conclusions

1. The researcher concludes from the results that the player does not reach the normal position through the number of heart rates after the passage of 5 and 10 minutes and the two methods of positive and negative comfort.
2. The number of heart rates improves better the more recovery time.
3. The player reaches the normal position or close to him when using positive rest is better than negative rest.

6. Recommendations

The researcher recommends:

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Appendix 1:

- 1- Ashraf Al-Masaeed.
- 2 - Oday Rasmi Shudifat.
- 3 - Nahar Mohammed Shudifat.
- 4 - Eyad Saleh Shudifat
- 5 - Ahmed Abdul Qader Shudifat.
- 6- Hassan Al-Masaeed.
- 7 - Hadal Sarhan.
- 8- Mohammed Hourani.
- 9- Ahmed Hourani.
- 10 - Mohammed Khawaldeh.

Appendix 2:

- 1 - Ahmed Mohammed Shudifat
- 2 - Ahmed Mashaqbeh
- 3 - Baker Khazaleh
- 4 - Abdullah Ghanem
- 5 – Haitham AL Sabee
- 6 - Mohammed Erqan
- 7 - Bashar Khazaleh
- 8 - Islam Khalidi
- 9 - Mohammed Sanaslh
- 10- Naif Sharaa