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ORGANIZING BIORHYTHM CYCLES AND THEIR IMPORTANCE TO ATHLETES IN THE CONTEXT OF THE REQUIREMENTS OF MODERN SPORTS TRAINING

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Abstract:
The ever-increasing athletic performances in speed, strength and skills used in sports performance around the world has made the athlete more stressful to achieve their own objectives. This stress and pressure on the athlete's body will certainly result in injuries. The research is meant to identify the Biorhythm, its different Cycles and how to organize and perceive their impact on athletes.

Keywords: biorhythm, modern sports training

Introduction

It is known that the athlete state differs within the day due to the form of life he lives. The biorhythm of the internal functioning systems and the operations of exchanging the substances are constant during the first years of life and he keeps it during the years of prolonged life. However, the constancy of biorhythm of kinetic reactions and efficiency of functioning is less constant, so researchers of biorhythm started to consolidate this theory and put its principles and reach to know and realize the results that they applied in their studies. They tended to have the same results. From that, biorhythm theory embarked which states that human undergoes in his physical, emotional and mental

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activities to three cycles which are frequent as 23 days physical, 28 days emotional and 33 days mental respectively, Casey added the intuition cycle among the main cycles of individual's life and it lasts 38 days.

From that logic, researchers wanted to study the organization of the biorhythm cycles and their importance for athletes, thus we will focus on three axes in this scientific paper:

1. The notion of biorhythm.
2. Biorhythm cycles.
3. The basic principles of the organization of sport biorhythm.
4. The features of biorhythm.
5. Biorhythm and the individual differences.
6. Biorhythm and sport training.
7. Ways of calculation of biorhythm,

   At the end:
8. General conclusion.
9. Recommendations.

1. The notion of Biorhythm

Biorhythm is a compound word of two Greek words (Bio which means life, and Rhythm which means periodic frequency), thus, is the science that studies the biological cycles of the all living organisms. The scientists proved that human can adapt all the effects of the daily, weekly, monthly and yearly biorhythm of the natural factors, therefore, about (100) physiological functions change reactions of the human body systems. Biorhythm is not limited to changes on the level of the efficiency of the body systems during the whole day only, but also it involves periods of time that may be long or short, and it includes all the biological, psychological and sociological components of human. (Chelabi, 2000, p182)

2. Biorhythm cycles

The periodic rhythms are basic features of human physiology and human behavior, thus there are biological cycles within the biological organisms, some are simple and others are complicated, that complication led scientists and researchers to attempt to define the nature of the natural cycles of human. (Neutaver & Frevbenthaler, 1995, p 11)

The biorhythm cycles start from birth day and they start from scratch or starting line, thus they increase gradually till they reach the peak of activity, then they go back

to starting line and decrease till they reach the minimum of activity when they reach the bottom point. Those rhythms differ in increasing and decreasing from a person to another, they all frequently reoccur and with all people, the following figures explain that. (Mekki Mohamed, 2004, p21)

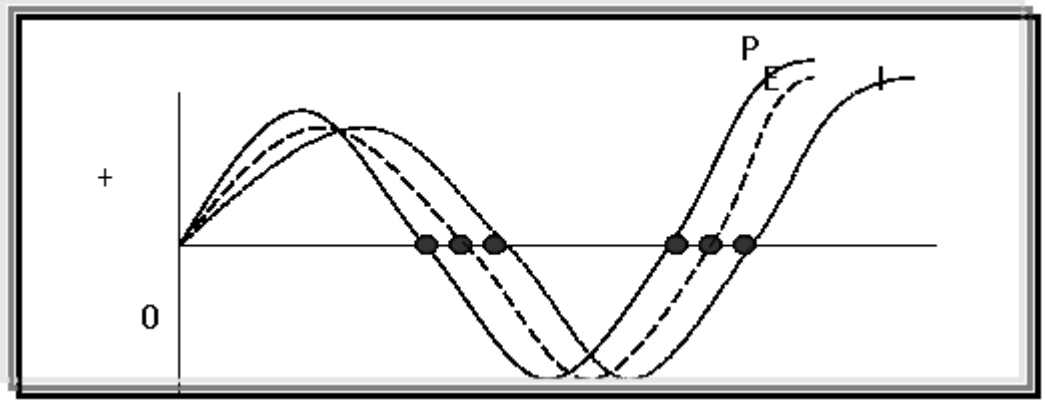

Figure 1: Shows the physical cycles (P) emotional cycles (E) intellectual cycles (I) which start from birth day

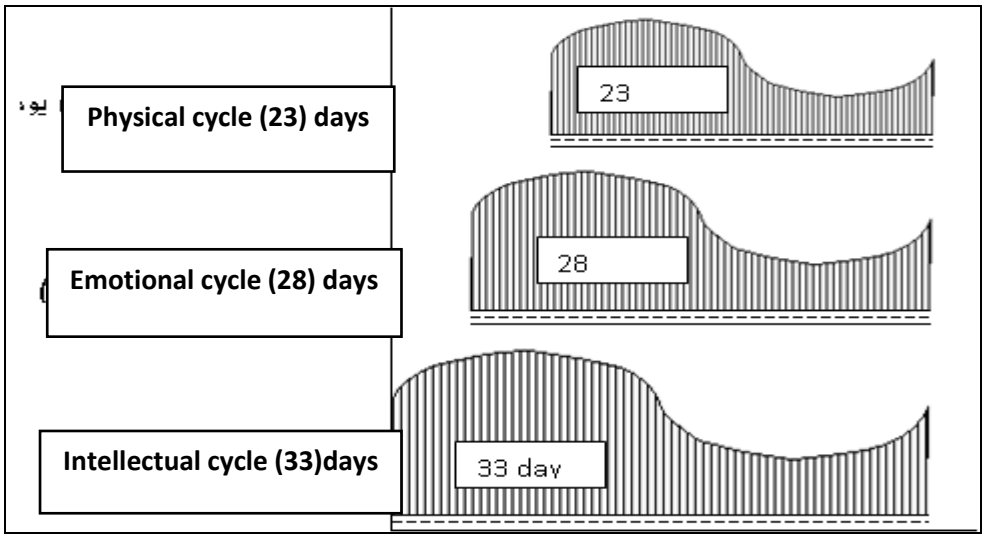

Figure 2: The three cycles and the number of days of each cycle (http://www.geocties.com)

The sports field is considered one of the most important fields where the biorhythm theories are applied, now it is up to the trainer to recognize the date of matches and competitions and organize the daily life of the athlete so that his biorhythm in the highest levels on the time of competition. It is recommended to reschedule the time of training to be in the time of competition in order that the body rhythm get used to those timings. Therefore, it is apparent that organizing the daily biorhythm of the athlete helps him sleep regularly and give the required activity on the suitable time, and It helps the digestive system to work at certain times during meal

times, this organization itself achieve the best circumstances for the athlete to organize his training state. (Abdelfattah Hassanein, 1997, p418-419)

2.1. Physical cycle (23) days

It is defined as every phenomenon that have relation with the physical state of the individual as energy, different kinetic skills as well as the physical elements which is the highest energy the individual can perform. (Ahmed, 1990, p466)

This rhythm involves the physical power, the endurance ability, energy and resistance to diseases. During the first part of the cycle, first (11.5) days, it can be explained as a battery giving energy, and all systems are on their highest states, because There is better coordination and greater resistance to the disease, generally, better physical conditions characterize the first part of the cycle, and the individual will be ready for hard work for longer time. During the second (11.5) days of this cycle, it sounds like the battery is a charging state, and the individual often feels like his activity is going down. The athlete, for example, are exposed to decrease in level at this time, that's why they don't appear in the same level of performance as they were in the first part which represents the best positive days in the cycle. The individuals who are in good state should expect the occurrence of problems during their negative days, but they will simply encounter decrease in their physical abilities, that what help discover the half cycle in which the physical cycle gets charged as it is negative idea opposing to the first half of the cycle which is very active. (Chelabi, 2000, p188)

2.2. Psychological (emotional) rhythm cycle

Its duration is 28 days and it is related to the emotional and affective state of the individual, and it also affects the intellectual health such as mood, feeling, sensation and creativity, and it is called the psychological cycle. (Bernard, 1990, p20)

During the first 14 days which are the days when the individual is prone to joy and optimism like creative abilities, love, cooperation and feelings. All coordination matters related to the nervous system are controlled, it is a time of harmony with ourselves and with others, however, the second 14 days are considered as a compensatory period which is recharging like the battery. In this period, there is tension and anxiety and those days are not suitable for cooperation and the formation of teamwork and the artificial incidents and transportation incidents happen in the negative emotional period. "*The emotional rhythm is a rhythm full of power, and in many times it can affect the physical and mental components of the individual, and the intellectual sports such as Golf, the individual can stay appearing in high level although the decrease of his physical level only if he is in high emotional state. The critical days of the emotional cycle are*

those days that need to be careful and can leave us exposed to self-harm, violent situations or moods that seem stable (totally unreasonable) to others, the emotional rhythms and the critical days are easy to control comparing to the physical and intellectual rhythms, thus in most cases we are more able to evaluate our feelings or the mood states from our ability to evaluate the state of our bodies or minds". (Mekki Mohamed, 2004, p28)

2.3. The Intellectual Rhythm Cycle

Mental rhythm affects intelligence, memory, mental alertness, logical strength, speed of reaction and ambition, it is divided to two periods; a positive period (16.5 days) and a negative period with the same number of days, in the positive period the individual is with less open mind and stronger memories for keeping information and understanding and faster adaptation. That's the best time for study and the creative thinking and understanding new things and those peak days are (16.5). They can be seen as the best days for the intellectuals, artists and writers. The second half of the mental cycle is characterized by less ability to think and difficulties in focus, most individuals find it a hard time for learning new things, "*most researchers believe that there is a temptation to deal with an absolute mind during this period to recharge the brain cells and these falling days can be used as best if spent on repeating the exercise on things already learned*" (Chelabi, 2000, p191)

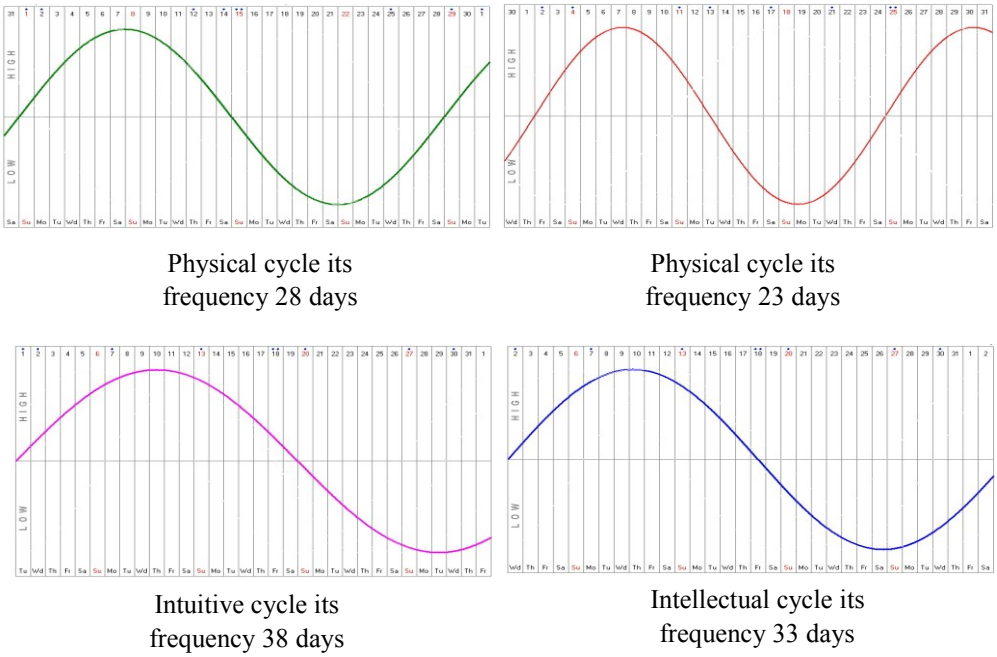

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Figure 3: The Cycles of Biorhythm

3. The main principles of the organization of the Sport Biorhythm

It is known that the biorhythm plays an important role in influencing the efficiency of the body organs. In order to regulate the biorhythm, it is necessary to follow the pattern of basic principles, especially the rhythm of sleep and vigilance. These basic principles are summarized as follows:

- Following a constant system for timings of the day.
- Not changing the work system, rest, sleep and vigilance.
- Do not change the usual behavior before bedtime. (Abdel Fattah and Hassanein, 1997, p. 401)

4. Characteristics of the Biorhythm

The period of biorhythm is approximately equal to the period of Earth rotation around its axis. All bodies of the organisms pass the daily cycle of biorhythm and it forms their characteristics, however, the levels of the biorhythm of the bodies of multiple cell organisms (at the level of the cell, the organ and the body as a whole) vary, and Biorhythms can change in the case of the change of the external factors. Moreover, the rhythm of cells, organs and systems of the body is related to the rhythm of their nerve centers in the brain. The rhythm of sleep and vigilance is the main rhythm which is a key to all the different body rhythms. (Mekki Mohammed, 2004, p. 35)

5. Biorhythm and individual differences

People differ one from each other in the daily biorhythm, some of them are more active during the day, but they are less active during the night, sleep early and waked up early, however, there are other groups who are characterized by more activity during the night and less activity during the day, nevertheless, there are other groups who are featured by irregular rising, thus they are active during specific hours of the day and their activity decreases during other hours. Thus, there are many test to determine the individual pattern, is it a pattern that is active during the day or night or varied in activity during the day? (Abdelfettah and Hasanein, 1997, p399)

6. Biorhythm and sport training

The preparation of the high level athlete takes many years, and it happens in the natural circumstances of the environment that he lives in, as well as the specific circumstances

of the environment in which he adapts, and if the athlete encounters different circumstances from those he trained on, he will suffer different systematic effects that get influenced by the climatic circumstances, there where the individual differences appear between athletes and through that "*the differences appear in training and taking the individual differences into consideration between athletes even though their ages and results are equal, so that each athlete has his characteristics that distinguish him from others*." (Albassati, 1998, p69)

For that, it is necessary that each athlete should have his specific training method that suits his individual abilities and his four rhythmic curves (physical, emotional, intellectual, intuitive). Many scientists did research related to the study of the sports records and their relation to the months of the year. In 1959 Matviv directed the view of the specialists in athletics to unequal position of the results of the athletes with the different months, and later it is noticed that level of the sports results depend on the external natural factors, so that there is a must to develop the methods of sports training and plan to allow the level of sports to raise from year to another.

When we know the biorhythm of the athlete, we can determine the intensity of the load and the rest periods that the athlete must take during the training and we can come closer to a more accurate identification of the potential results to be achieved by the athlete, and the athlete's knowledge of the days of his life by knowing the three curves and how to perform whether in the positive direction of achieving high levels or negative direction when he cannot reach his real levels, it is unreasonable that the failure is due to factors such as fatigue, stress or environmental changes because "*the biorhythm as a stable theory so far may be the more accurate in the interpretation of such cases and experiences undergone by most athletes in a scientific way susceptible to study.*" (Al-Baik and Omar, 1994, p. 169)

7. Methods of the calculation of biorhythm

There are many ways to calculate the biorhythm through knowing the state of the cycles; among them, we find the following:

7.1. The manual method

This is a simplified method by which calculations are made manually and is the basis for all other methods. The calculations of each cycle are carried out through that, the position of each cycle can be known by knowing the beginning of the rhythm cycles at birth and the days which are between the starting point and the required biorhythm day. Through knowing the time of each cycle, we can define the position of each cycle

according to its period, so that we know the biorhythm of the individual on the defined day, this method is carried out through writing down the individual's birthday, and converting the age years into days, then the operation of calculation of the biorhythm is carried out as follows:

a. We calculate the numbers of days that the individual lived from his birthday till the required date for biorhythm calculation in days, with taking into consideration the leap year where February is (29) days and is repeated every four years and the number of days of the year (366) days, unlike the normal year and the number of days (365) days.
b. Dividing the days into the number of the days of physical side cycle (for example) which is 23 days.
c. Converting the results to a diagram of the cycle through applying an equation called the equation of the curve (S) on each cycle of the cycles if we want a diagram for them.
d. From what passed, we can reach to the cycles forms of the individual in the defined day, that each of them represents a side of the biorhythm sides and its outcomes on the general biorhythm of the individual. (Albaik and Omar, 1994, p153-161).

7.2. Tables method

It is a method based on the manual method, where the basic calculations of each cycle are carried out then they are put in specific tables. Through those tables the state of each cycle is defined so that the state of the individual's biorhythm as a result to all these cycles through knowing the period of time between the starting point and the required day for the calculation of biorhythm. This method is simpler and easier rather than the manual method. (Albaik and Omar, 1994, p153)

7.3. The Electronic method

It is from the modern methods and the easiest to express the positions of the cycles by knowing the starting point of cycles and the required day to calculate the biorhythm in, it depends on the computing devices through preparing a specific program through which the calculations are carried out by the input of the information of real birthday, the month and the year of that person, then the representation of each cycle graphically or digitally, which can identify the general biorhythm of the individual and each of its components in a simplified and easy to use way. (Al-Baik and Omar, 1994, pp. 153-154)

This method has developed a lot after the wide spread of the internet, there are many software that give many enjoyable models and ways to follow daily through

knowing the personal sate of the person. So that he can predict his rhythmic cycles, and know his critical days, bad days and good days before they come. Thus many software proved the existence of four cycles of biorhythm not only three.
(http://www.astral-on-linecom)

As it is shown in the table:

Cycle	Period	Relationship to Variables
Physical	23 days	Physical strength, motor compatibility, resistance to disease and pain
Psychological (emotional)	28 days	Physical strength, motor compatibility, resistance to disease and pain
Mental (intellectual)	33 days	Ability to learn, analytical thinking, quick recall of memory and decision making
Intuitive	38 days	Instinct of unconscious perception

Table 1: The biorhythm cycles and their relationship to the variables

There is another software through which we can scan the biorhythm. Through this software, we can choose one of the rhythms or all of them only by filling in the gaps that show up on the screen which are: year of birth, month and day, and every rhythm will appear with its color and in form of a wave.

8. General conclusion

The sports field is one of the important field for the application of biorhythm theories, and each trainer should know the biorhythm in order to be able to regulate the daily life of the athlete, so that his biorhythm should be on his highest level on the defined date of the competition, and it is also necessary to change the date of daily trainings so that they synchronize with the dates of competitions in order to make bodies used to those schedules. The regulation of the athlete's daily biorhythm helps on sleeping regularly, and giving the required activity on the suitable time, and getting the digestive system used to work on specific time through mealtime, and this regulation achieves for the athlete the best circumstances for the development of his training state.

9. Recommendations

- The need for trainers to train their players on complex and high difficult skills in the days of the peak of positive biorhythm.

- Raising awareness of the players to understand the biorhythm and its impact on their sporting career and improve their performance.
- Keeping players away from high-intensity exercises in negative biorhythm days.

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