USE OF BIORHYTHM IN SPORTS

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Abstract
The purpose of this study was to find out how the scientific concepts control the performance of a sportsperson on the sports field? Although the principle of monthly (23-28 day) rhythms were known from quite some time but it was first observed that student's academic inputs in the class room were controlled by the biorhythms. It was in the later part of 1970s, the Biological concept of Biorhythms' use in Sports came to light. Soon the practice was used in sports performance forecasting. It is well established now that out of the three (Positive, Negative and Intermediate) phases of the Biological Cycle (Biorhythms in short), the podium performance by the sportsperson is during the positive phase of the Biorhythms. Using the knowledge of Biorhythms judiciously, the coaches are now suggesting that the organizers of the sports meet may hold the event in the afternoon when the Biological Cycle is in positive phase. Further studies have augmented these findings as the total physiological body activities of the body function optimally in the late afternoon. The researches in the field of Biorhythms have provided insight to the coaches to plan their training schedule in such a way to secure maximum output from their wards. The knowledge of Biorhythms has found its usage in agriculture, aviation, education, commerce and relief to men from mental and physical ailments.

Keywords: Biological, Prediction, Mechanism and Cycle.

Introduction

According to one time Russian track coach Valentine Petrovsky, 'Today sports records are not created in the stadia but in science laboratories. There are no two opinions on this. The statement is profound and impels one to dig deeper into the present day sports. It is practically impossible to achieve significant victories by relying on coaching, experience and practice or by following percepts arising from the biological and psychological peculiarities of the human body. One has to draw freely from various disciplines such as anatomy, cybernetics, pedology, physiology and psychology to understand the body mechanism of sports person holistically. Presently results of multidisciplinary scientific researchers are being widely used to enhance the performance of the sportspersons. The combination of scientific researches and innovation in the gear and equipment has paid rich dividends in producing astonishing results in the various disciplines of sports.

The concept of periodic cycles in human fortunes has been in existence since times immemorial. There are references about natal astrology and in beliefs in lucky days. The 23- and 28-day rhythms used by the experts in the field of biorhythm were first devised in the late 19th century by a German physician Wilhelm Fliess. He was a Berlin dweller and himself a patient of another celebrity physician Sigmund Freud. Fliess observed regularities at 23- and 28-day intervals in many happenings, including births and deaths. He classified the 23-day rhythm as male and the 28-day rhythm as female to denote the menstrual cycle. Hermann Swoboda in 1904, a psychology professor claimed the sole right to have discovered the rhythms. Soon after, Alfred Teltscher, a professor of engineering at the University of Innsbruck, found out that his students' good and bad days followed a rhythmic pattern of 33 days. Teltscher believed that the brain's ability to absorb, mental ability, and alertness followed a 33-day cycle. However, the first book on biorhythms in German- Rhythm, Life and Creation was published in 1923 by an Estonia-born Nikolai Pärna, The biorhythm consultation became order of the day in the 1970s. The practice received a boost due to the publication of a series of books by Bernard Gittelson. It included Biorhythm — A Personal Science, Biorhythm Charts of the Famous and Infamous, and Biorhythm Sports Forecasting.

New light on performance of sportspersons

According to believers in biorhythms, a person's life is influenced by rhythmic biological cycles that affect one's ability in various domains, such as mental, physical and emotional activity. These cycles begin at birth and oscillate in a steady fashion throughout life. By working out the mechanism of use of biorhythms a person's level of ability in his field of activity can be predicted from day to day.

Most biorhythm models use three cycles: a 23-day physical cycle, a 28-day emotional cycle, and a 33-day intellectual cycle. Although the 28-day cycle is the same length as the average woman's menstrual cycle and was originally described as a female cycle, the two are not necessarily in any particular synchronization. Each of these cycles varies between high and low extremes with days where the cycle crosses the zero line described as critical days of uncertainty.

But the Biologists have added another dimension to the performance level on the sports field. Let us ponder why performance of athletes and players fluctuate? Why is it that,

what you call mood is variable? Sometimes you are at peace with the world, while on some other occasions you are highly irritable? Even when everything with you is proceeding satisfactorily, you get apprehensive and distressed over trifles.

Biological Rhythms

For many years, scientists dealing with the Behavioral Science now known as Ethology have been concerned about these subtle changes in human behavior, and are now convinced that these variability's in our abilities, moods and even in our daily lives are governed by a built-in-mechanism which runs like a clock and has been called 'Biological Clock'. The Biological Clock starts ticking from the moment of birth and are complex mechanisms. These are unique to species, individuals and sexes. These Clocks never go awry and are most highly perfected time pieces ever devised by man to keep track of time.

Scientific researchers have established that everyone has three phases of rhythms or cycles. The first is a physical cycle with duration of 23 days. This phase determines the person's strength and stamina; the second emotional lasting 28 days (this affects the nervous system and determines our moods) and the third is an intellectual cycle of 33 days which concerns our creative personality.

Each cycle has two halves, one negative and one positive. During the positive phase of the physical cycle, for example, a sportsman will train hard and with renewed vigour, while during the positive phase of the emotional cycle he is filled with optimism. Conversely, during the negative phases nothing goes right. A sportsman finds it hard to train, tires easily and is fidgety. The phases change. A zero point may reach when the two cycles coincide: though rarely all three may coincide.

Evidence and usage of Biological Rhythms in sports

Scientists engaged in the study of biological rhythms are of the opinion that both coaches and sportspersons can work out, predictably, charts of their good and 'bad' days. They can coordinate properly their emotional and physical loads and train in accordance with the precepts of modern science.

A Russian scientist Dr. V. Shaposhanikova predicted that Montreal Olympic gold medalist triple jumper Viktor Saneyev would create a world record. Despite Saneyev's and his coach's misgivings of the prediction, the jumper did create a new world record of 17.44 metres in a regional competition in Moscow, hardly a week after the 1976 Montreal Olympic Games. .

These biological charts and training programmes based on these charts prepare a sportsperson to reach his peak during the crucial and decisive days of the sports season. It was no use to tell the competitor of his negative phases when he was full of confidence. Avoid alarming the sportsperson with negative factors at the time of competition.

Coaches are, therefore now seeking assistance of biologists and psychologists to prepare biological charts of their trainees to calculate suitable period for coordinated training.

According to a team of American scientists, a sportsperson aware of his unsuitable biological cycle while competing must bear this in mind and be more wary. This means spreading out his energy wisely and training with moderation even if he has surplus energy. The reserves of strength thus accumulated coupled with his will power will stand him in good stead at the most vital stage of competition.

Discussion

It is now possible to make a calculated prediction of one's capacity, determination, enthusiasm and the physical and intellectual configuration essential in the supreme effort for a victory.

Despite the prevalence of information about biorhythms, there are no researches, confirming the strict regularity of the classic set of cycles. On the basis of more than 20 years of research and observations with the positive correlation of the results of sports competitions (boxing, tennis, football and cycling), the biorhythms are now on firm footing.

The researches of Winget et al. 1985 point out that if a soccer coach wants his team to execute several new and innovative ways of playing for next week's championship game, he will have to fall back upon the science of Chronobiology. Based on this new scientific discipline and the researches of Winget et al. the coach will do well to suggest that the best time to stage the game will be 3 in the afternoon. In fact, it is a well-established fact in Chronobiology to expect better performance if workouts and competitions are held between 12 noon and 2100 hours. It is further corroborated by Winget et al. 1985. This fact is based on many of the physiological determinants of physical performance, The quantitative study of biological phenomena that fluctuate over time (i.e. Chronobiology) has helped to define and identify times when the sum of these physiological mechanisms should be functioning optimally.

Due to the wide spectrum of morning-evening preferential, it is believed that this trait reflects the underlying ability or inability in reacting to the various circadian systems (Chelminski et al., 1997). In addition, Youngstedt and O'Connor (1999) also identified seven other variables, that may contribute to the lack of performance in the mornings, which might help to explain the in exercise performance; differences in nutritional status from morning to evening; decreased flexibility in the morning; insufficient time to recover from sleep inertia; preferred time of training; differences in the amount of rest between test sessions; individual difference in the physiological response; and differences in motivation and expectancy effect.

The data from these researches reveal that biological and psychological rhythms exert a major effect on physical performance. Although enhanced performance is most

frequently seen in the early evenings, taking into consideration an individual's chronotype and using specific time-of-day training seems to be an effective method in improving physical performance at a particular point of time. The use of active warm-ups, especially in the mornings or cold environments, should also be performed so as to increase body temperature prior to any competitions or training.

Conclusion:

The researches of Wignet et al. 1985 and Postolache, Teodor T. (2005) has enabled the coaches and the sportsperson to plan their training as per following schedule:

- Plan your training programme according to your energy level.
- Determine Risk periods, when you should pay greater attention to your health.
- Enhance you results in various activities by matching periods of appropriate body activity.
- Use the knowledge of biorhythms judiciously.
- Knowing your biorhythms, you can be sure about what to expect from each day in order to succeed at sports.

The findings of the above mentioned researches are not confined to the sports performance arena only. It has a much wider applications and implications. It will be a beacon of light in such diverse fields as space flight, agriculture, military training, teaching, business, medicine, psychiatry and other areas besides sports which require peak mental and physical performance.

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