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Circadian Rhythm

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Abstract

In today's techno-scientific age, the world has completely changed in all aspects due to discovery and research. In the field of games and sports also, there has been a great change with the help of scientific coaching and training. The athlete are being trained on scientific guidelines with highly sophisticated means for better achievement in their concerned sport to enable the coaches to get optimum performance with minimum expenditure of energy and time. They are being exposed to the exercise and training methods, which have got beneficial effect for achieving higher standard.

The daily light-dark cycle governs rhythmic changes in the behavior and/or physiology of most species. Studies have found that these changes are governed by a biological clock, which in mammals is located in two brain areas called the suprachiasmatic nuclei. The circadian cycles established by this clock occur throughout nature and have a period of approximately 24 hours. In addition, these circadian cycles can be synchronized to external time signals but also can persist in the absence of such signals. Studies have found that the internal clock consists of an array of genes and the protein products they encode, which regulate various physiological processes throughout the body. Disruptions of the biological rhythms can impair the health and well-being of the organism. One of the most dramatic features of the world in which we live is the cycle of day and night. Correspondingly, almost all species exhibit daily changes in their behavior and/or physiology. These daily rhythms are not simply a response to the 24-hour changes in the physical environment imposed by the earth turning on its axis but, instead, arise from a timekeeping system within the organism. This timekeeping system, or biological "clock," allows the organism to anticipate and prepare for the changes in the physical environment that are associated with day and night, thereby ensuring that the organism will "do the right thing" at the right time of the day. The biological clock also provides internal temporal organization and ensures that internal changes take place in coordination with one another. For centuries, man has been looking at the universe and trying to unravel its mysteries and understand its working. On the other hand this endeavor has filled him with a sense of awe and wonder. Till today man has only decreased his ignorance rather than accumulate knowledge. In fact man the scientist has not yet been able to understand and analyze himself.

Man is not as consistently predictable in performance as are other things we might choose to observe. This is unfortunate but obvious. We can borrow information from the related areas to apply it to sport, as another alternative. Whatever method is used, the so called truths are at best loosely structured. We must then try to logically deduce the facts from empirical as it pertain to sports .

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