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**THE EFFECT OF MENSTRUATION ON
PSYCHOLOGICAL AND PHYSIOLOGICAL
CORRELATES OF SURVIVAL PERFORMANCE**

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The Effect of Menstruation on Psychological and Physiological Correlates of Survival Performance

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Abstract – *It is projected that menstruation has unenthusiastic belongings on physiological and psychological correlates of endurance performance. The physiological effects may be delicate, but at best level sufficient to manipulate performance. The psychological correlates may be affected more obviously and more detrimentally. The pace and the correctness of a perceptual decision depend on the strength of the sensory stimulation. When incentive strength is high, accuracy is high and response time is fast; when incentive strength is low, correctness is low and response time is slow.*

Keywords: *Menstruation, Physiological, Response, Psychometric, Periodization, Performance.*

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INTRODUCTION

Menstruation has become less of a barrier to achieving sports goals for women in recent times. Menstruation has historically been a taboo subject in sports science and in the coach-female athlete relationship, with embarrassment and lack of empathy from male coaches being prevalent [1]. Despite abundant research addressing the effects of exercise on menstruation, including menstrual irregularities resulting from training, less is known about how menstruation affects women's athletic training and competition. These cyclic hormonal fluctuations may affect physiological, physical and psychological potential and ultimately impact on sports performance. The female athlete has a complex and continuously changing chemical mix of female steroid sex hormones, with individual, interactive and sometimes conflicting physiological responses (particularly on substrate utilisation, electrolyte and water balance, nervous system, blood sugar and circulation) with potential implications for athletic training [2]. Early retrospective studies on the effect of the menstrual cycle on performances found a variety of responses. Lebrun's [3] review of research found substantial differences in the effects reported by studies; from 8% to 69.7% of women found a decrement in performance during menstruation, while 13% to 43% had enhanced performance. The best performances were mostly during the immediate postmenstrual days, while the worst performances were in the pre-menstrual phase and during the first few days of the menstrual period. The most common reason for reduced performance cited in these studies was lethargy and fatigue, disrupted concentration and

severely reduced levels of motivation. For elite female athletes even small differences in performance may be critical to athletic success [3]. Changes in physiological parameters have been extensively reported in the literature at different phases of the menstrual cycle, including cardiovascular, haemodynamic, respiratory, metabolic, strength, biochemical and endocrine, but in general have not shown a consistent variation with specific phases. However, there is still a lack of understanding regarding women, sports performance and gynaecological issues. In early studies, many of the variation could be accounted for by varying nutritional status of the athletes: substrate utilization is clearly influenced [4]. Psychological changes have reportedly had a more consistent variation in the premenstrual and menstrual period. For example, major psychological problems reported premenstrually and during menstruation were irritability (40% of the subjects), mood swings (38% of the subjects), fatigue (30% of the subjects) and

depression (28% of the subjects) in an Australian Olympic team [5]. Another study found no significant differences in performance times during a sixty-minute bicycle test at 65% VO₂max, but an increase in RPE was reported during menstruation [6]. POMS scores and running economy were found to be significantly different between phases of the menstrual cycle [7]. Conversely, symptoms of dysmenorrhoea premenstrual syndrome may be relieved by exercise, possibly due to changes in central neurotransmitter or modulation of prostaglandin synthesis [8]. However, in general the literature to support this has not described elite

athletes, rather, the sedentary versus the physically active woman.

PHYSICAL WORK OUT

Physical exercise and athletic training have become an important part of many women's lifestyles. Thirty years ago, young women and girls were discouraged from participation in such activities. Although boys were expected to participate in athletic training, girls were encouraged not to be too physically active or competitive in game and sports. Underlying this attitude was the basic belief that female reproductive function might somehow be damaged by too much exercise, especially during menstruation. The beneficial effect of physical fitness on the cardiovascular, musculoskeletal and metabolic systems is now well recognized for both men and women, and regular exercise has become an important component of healthful lifestyle. However, the increasing participating of women in athletic training programme has again brought attention to the effect of exercise on reproductive function. VanderZwaag (1988) stated, "Sport is a competitive physical activity, utilizing specialized equipments and facilities, with unique dimension of time and space, in which quest for records are of high significance". Physical fitness is being accepted as one of the vital objectives of physical education. The adaptive capacity of the Individual to the rigors of work is determined by his physical fitness. by nature human being are competitive and ambitious for the excellence in all athletes' performance. Not only every man but also every nation wants to show their supremacy by challenging the other man or nation. This challenge stimulates, inspires, and motivates the entire nation to sweat and strives to run faster, jump higher, throw faster and exhibit greater speed, strength, endurance and skills in the present competitive sports world.

MENSTRUATION

Menstruation, which begins at puberty and ends at menopause, is a series of events occurring in a cycle, the purpose of the menstrual cycle is to prepare the uterus for nurturing a new life and the destruction of that preparation if the ovum is not fertilized. The walls of the uterus become engorged with blood and nutritive elements to supply the fertilized ovum with a means of growth. This cannot return to the blood stream and so it is lost by direct flow from the uterus. A rise in weight occurs at ovulation in some women, and in others during the pre-menstruation, and may be reflected in lowered performance. The effect of the menstrual cycle on performance is highly individual and is as variable as menstrual itself. Women have won gold medals in all phases and there are no medical contra-indications to participating in sports including scuba diving provided the athlete is comfortable.⁴ Menstruation will decrease performance only in 30 percent of women. This is due to the abdominal pain. The best performance is surely during menstruation, the immediate post menstruation period,

and the poorest performance is during the premenstrual period. This is due to the fact that women tend to perform better when they are relaxed and at ease. On the onset of menstruation, the tension is relieved and so they perform well. During premenstrual period they are depressed, irritated and tense. Hence it affects their performance

PERIODIZED TRAINING FOR THE POTENCY ATHLETE

The exploit of periodized guidance has been reported to go back as far as the antique Olympic games. Its basic groundwork is that through manipulating training volume and excitement, in coincidence with appropriately timed short receipt phases, the athlete can reach peak condition at the appropriate time, and decrease the risk for overtraining. This article will address the background of periodization, its efficacy and various models of periodized training, with the primary emphasis on the strength/power athlete.

The basic belief of periodization is a shift from an importance of high volume (exercises x sets x repetitions) and low intensity (% of maximum effort) training to low volume and high intensity training. The training year is divided into divergent phases known as mesocycles. Each mesocycle relates to modify in the volume and intensity of training, and may last for 2 – 3 months depending upon the athlete. Typically each mesocycle reflects a specific training emphasis for that phase of training. The initial mesocycle is called the preparatory or hypertrophy phase and consists of high volume and low intensity training. It is designed to primarily increase muscle mass and muscle staying power, and to prepare the athlete for more advanced training during the later stages of training. The next two mesocycles are usually referred to as the strength and strength/power phases, in that order. In these mesocycles training intensity increases while training volume is reduced. The final mesocycle of the training year is the peaking phase. During this training phase the athlete prepares for a single contest by further reducing training volume and increasing intensity.

EFFICIENCY OF PERIODIZATION TRAINING

Increases in potency have been shown in both periodized and non periodized confrontation training programs. However, potency improvements do appear to be greater as a result of periodized training. The upper range for potency improvement in the 1RM bench press is reported to be about 17% in nonperiodized training programs and 29% in periodized training programs, while the upper range for 1RM squat is 32% in nonperiodized and 48% in periodized training. In addition, periodized resistance training programs appear to be superior than nonperiodized training programs in generating improvements in vertical jump performance. These studies provide evidence that periodized resistance training is more effective to nonperiodized training in eliciting strength and motor performance

improvements. However, this advantage may be largely dependent upon the training status of the individual. The magnitude and rate of strength increases are much greater in untrained individuals than in trained individuals, therefore in consideration of the rapid strength increases seen in novice lifters, periodized training may not be necessary until a certain strength base has been established.

CONCLUSION:

The menstruation/premenstruation phase of the menstrual cycle can affect levels of Tension-anxiety, Depression, Fatigue, Vigor and Total Mood Disturbance, that would be potentially detrimental to endurance performance. The menstrual cycle phase should be included when physiological data are being obtained for female athletes. The physiological variables of Time/speed, and abdominal /back pain etc. were also affected in a manner that could negatively influence performance.

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