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Original article

RECOVERY - A HEALTHY LIFESTYLE FOR STUDENTS

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Abstract

The purpose of this study is to assess the way students fight fatigue by using passive recovery (sleep) and active recovery (physical exercises) methods. The hypothesis: the motor skills associated with the recovery process are similar in male and female students.

Methods We initially checked the hypothesis on a group of 122 students (84 male and 38 female), aged between 20 and 28. We used a survey and applied a 12-item questionnaire which identified the degree to which the subjects used and benefit from the recovery process.

Results. Subjects recover especially through sleep through the night and less during the day. Their breath control is not sufficient, but try to see restored by physical activity.

Conclusions. We find that most subjects say they rest better after exercise sessions. Although they are quite active and personal interested in rest and recovery, and students do not usually pay attention to breathing properly or use different methods to improve breathing

Key words: recovery, sleep, physical exercises, students

Introduction

Sport effort means a biological and psychological consumption obviously be restored by natural means, such as sleep. The strategy can call and sleep inducing restful sleep onset. The recovery process reunites a series of natural or artificial methods coming from internal or external environment, which, if rationally applied, aim at reestablishing the equilibrium of the internal medium and at restoring the functional parameters at the level they were before training or competition effort (Ionescu, Anton, 2004).

According to Drăgan, 2002, trophic recovery or regeneration is an indirect form of energetic preparation of the organism, which is deprived of its fuel by exaggerated energetic consumption or by loss of its biological agents. Recovery or fighting against the tiredness installed after physical effort or higher loading is a physiological process leading to the regulation of the equilibrium of a body stressed by effort (Brătilă, 2002). Biological recovery is part of the strategy to maintain the population health. Kellman (2002), who was quoted by Mihăilescu (2011), thinks that recovery can be split into three directions: passive, active and proactive and it is self-initiated in order to restore physiological and psychological resources.

Recovery is commonly divided into active recovery and passive recovery, which complete each other and accelerate biological regeneration. Active recovery is performed by moderate physical exercises accelerating the degradation of metabolic residue produced by effort. Passive recovery refers to the periods in which the subject is not involved in any

activity whatsoever.

All the people must be preoccupied to restore the body to its optimal functioning state. Biological and psychological recovery of the body is part of a healthy and durable lifestyle.

The efficiency of the recovery process ensures a good health status and longevity of athletic life. If the recovery process has a correct duration, the vegetative, metabolic, hormonal and enzymatic parameters are restored to the normal values. Biological recovery induces positive effects in the psychological area of the athlete or person. Biological recovery is performed naturally, spontaneously and without any special intervention and it refers to the obligatory methods that might be omitted from the daily activity of the athlete or person.

Avramescu (2005) stresses even more the importance of recovery and recommends the objectification of the recovery process by clinical and paraclinical tests. The most efficient recovery method is sleep, which humans cannot miss. Beersma (1998) states that, although the fundamental question is why humans require sleep, scientists are providing more information about how humans sleep. As far as duration and timing of sleep are concerned, it is assumed that sleep provides important psychological and physiological functions.

Frank (2006) suggested the relationship between sleep and endocrine and immune systems in the benefit of recovery. The same author underlined that waking imposes a neural and metabolic cost that is paid by sleep. Physical effort implies an obvious

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biological and psychological consumption, which must be restored by natural methods, such as sleep.

Methods

The research study was applied on a group of 122 students (84 male students and 38 female students) with an average age of 23.7 years. The questionnaires contained 12 items, by which we tried to identify the degree to which the subjects resort to

Sleep strategy may also use methods inducing a restful sleep.

the simplest and most accessible methods of biological recovery after daily effort. The questions regarded natural sleep recovery, breathe control and physical exercises. The received answers were centralized, tabulated and assessed in percentage and then they were compared between genders.

3. Results

Table 1 Do you to bed at the same time?

Item 1	Male (%)	Female (%)
Yes	65	71
No	23	20
Sometimes	12	9

Item 1

Most subjects answered that they used to go to bed at the same hour every night. A higher percentage (71%) of female students is constantly at bedtime. A relatively equal percentage of male and female students (23% versus 20%) were not consistent bedtime hour. Fewer subjects from both genders can barely sleep at the same time.

Table 2 How many hours do you sleep in night?

Item 1	Male (%)	Female (%)
4-5 hours	17	29
6-7 hours	52	44
8-9 hours	31	27

Item 2

The most subjects of both genders (52% versus 44%) sleep about 6-7 hours. A percentage represents only a third of the subjects from both genders fail to sleep more than 7 hours. About one third of all female students (29%) sleep less, more accurate 4-5 hours. 17% of male students sleep 4-5 hours.

Table 3 Do you have a short sleep in the afternoon?

Item 1	Male (%)	Female (%)
Yes	14	8
No	76	83
Sometimes	10	9

Item 3

Most subjects (76% and 83%) do not sleep in the afternoon. There are very few subjects who manage to sleep in the afternoon, for example female students (8%). In both genders equally and small percentage (10% and 9%) occasionally sleep in the afternoon. A short sleep have male students (14%) and female students (8%).

Table 4 Do you use techniques to induce sleep?

Item 1	Male (%)	Female (%)
Yes	27	48
No	54	30
Sometimes	19	22

Item 4

Most students (54%) do not use techniques to promote sleep. Most female students (48%) require different techniques for sleep. A percentage of 27% of the male students use techniques sleep. In both genders the lowest percentage (19% versus 22%) need support sometimes sleep onset.

Table 5 Do you learn in the night?

Item 1	Male (%)	Female (%)
Yes	24	45
No	41	19
Sometimes	35	36

Item 5

It seems that almost half of the female students (45%) used to study at night, although not in session exams. Most male students (41%) do not study at night. A fairly similar percentage of both genders (35% versus 36%) sometimes studies night. The small percentage (19%) that does not work is the female students study at night.

Table 6. Lack of sleep affects you?

Item 1	Male (%)	Female (%)
Yes	47	64
No	28	19
Sometimes	25	17

Item 6

The most affected by incomplete sleep are of female students (64%). Less affected or sometimes affected by incomplete sleep are male students (25% versus 17%).

Almost half of the male students surveyed (47%) are affected by lack of sleep. Other (28% versus 25%) are sometimes affected by lack of sleep.

Table 7 Do you practice physical activities?

Item 1	Male (%)	Female (%)
Yes	53	34
No	15	45
Sometimes	32	21

Item 7

Most male students (53%) go for workout. A small percentage of male students (15%) do not practice physical exercises, but 32% of them go to work out during the week. Most female students (45%) do not practice effort during the week. One third of them (34%) practice physical activity, and 21% of them sometimes go to work out.

Table 8 What kind of workout do you practice?

Item 1	Male (%)	Female (%)
Muscular tonus	32	21
Jogging	15	24
Fitness	24	53
Games	29	2

Item 8

Those who practice sports activities focused on strength are 32% (male students) and 21% (female students). More female students practice jogging (24%) and less male students (15%). More male students (53%) and only 24% female students practice the combination of strength and aerobic effort. Sports games are preferred by almost one-third of the male students surveyed (29%) and only 2% of female students prefer games.

Table 9 How many times you do you go to workout?

Item 1	Male (%)	Female (%)
2/week	48	51
3/week	36	42
≥4 more/week	16	7

Item 9

Most male students (48%) and female students (51%) part 2 times a week to workout. A significant proportion, 36% (male students) and 42% (female students) fail to come to workout 3 times a week. A small percentage 7% (female students) and 16% (male students) have access to more than 3 times a week to workout.

Table 10 Do you sleep better after workout?

Item 1	Male (%)	Female (%)
Yes	78	81
No	20	12
Sometimes	12	7

Item 10

Most subjects (male students 78% and female students 81%) responded that they have a good sleep after physical activity. The rest of the subjects interviewed found that only sometimes they sleep better (12% male students and 7% female students), but a percentage of 20% male students and 12% female students really do sleep better after performing physical activities.

Table 11 Do you pay attention to breathing?

Item 1	Male (%)	Female (%)
Yes	17	35
No	18	17
Sometimes	65	48

Item 11

Most students surveyed (65% male) and (48% female) pay less attention to the breath. It seems that a relatively equal percentage of both genders (18% male students) and (17% female students) pay less importance to the process of breathing in personal recovery. Female students (35%) surveyed pay more attention breathing than male students (17%).

Table 12 Do you have a controlled breathing?

Item 1	Male (%)	Female (%)
Yes	25	36
No	63	42
Sometimes	12	22

Item 12

Most of male students (63%) do not apply special techniques to control breathing. A percentage of 25% of them still use controlled breathing techniques. Some male students (12%) sometimes perform special breathing exercises. Most of female students (42%) are not concerned on controlled breathing, directed. A percentage of 22% female students sometimes control their breathing and 36% of them control the breathing.

Discussions

A good sleep seems to be the best recovery strategy to elite athletes. The impairments in the endocrine systems that results from sleep deprivation may impair the recovery process and hence adaptation to training (Reilly, Edwards 2007).

A good night's sleep has positive effects on the nervous system recovery and restore the organs of the human body, but also of physical comfort.

Haack, Mullington (2005) study suggested that optimism and sociability decreased in individuals who were restricted to 4 hours of sleep per night for 12 nights, that began after the second night sleep-restricted night. Halson, 2008 reported from a few studies that heightened psychological stress from

fatigue, frequent competitions may result in an inability to sleep appropriately.

Sleep hygiene refers to behaviors that improve quality and quantity of sleep. It involves avoiding behaviors that interfere with sleep patterns and engaging in behaviors that promote good sleep Stepanski, Wyatt, (2003). For a good sleep it may use different means. In order to restore the body it can be used active means, represented by exercise. Practice of lightweight, dynamic and aerobic efforts induces positive effects on balancing internal environment and returns to normal blood ph. Removal of waste products affect recovery rate.



Individuals with higher fitness have a faster recovery due to the efficiency with which their body metabolizes food and eliminate waste. Circulatory system support gas exchange and supply of nutrients at the cellular level (Bompa, 2002).

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Atmospheric air contains positively and negatively charged particles. Negative particles stimulate rapid restoration of respiratory-circulatory system and increase effort capacity. Breathing techniques in the form of spontaneous exhalation has also been suggested in addition to muscular recovery and relaxation (Cole, 2005). Recovery by movement is based on compensatory effect of physical exercises on the central nervous system.

Regarding sleep hygiene as a means of biological recovery of the body, the majority of students surveyed know the importance of time in rest. However, it remains a significant number of students who have not yet formed the habit for fixed time for bed. It seems that students get enough sleep good, for most over 7 hours of sleep and a good percentage pass 8 hours of sleep, which suggests good management of time spent resting recovery. Regarding the sleep in afternoon, most subjects interviewed state that does not have this time of recovery. Different activities dealing the subjects do not leave time for most of the afternoon sleeping. Responses of female students find that they are more interested in some means for induce sleep, compared to male students. Most students do not used and stimulate sleep onset. The female students are more interested to study on night. The quantity of sleep affects all subjects, but female students are more affected than male students. Subjects deprived of sleep blames fatigue and discomfort. After 2-3 days of insomnia, motor and mental performance are reduced, decreases muscle tone and difficulty in concentration occurs (Ionescu, Anton (2004). Seventeen sedentary adults with insomnia participated in a randomized controlled trial comparing 16 weeks of aerobic physical activity plus sleep hygiene to non-physical activity plus sleep hygiene. The physical activity group improved in sleep quality, sleep latency, sleep duration, daytime dysfunction and sleep efficiency compared to the control group. The physical activity group also had reductions in depressive symptoms, daytime sleepiness and improvements in vitality compared to baseline scores. Aerobic physical activity with sleep hygiene education is an effective treatment approach to improve sleep quality, mood and quality of life in older adults with chronic insomnia (Reid, 2010).

Conclusions. It seems that male students are more active than the female students. Most of them practice sports, preferably strength exercises, sports

games with a frequency of 2-3 times/week. Female students are less active when practical exercise 2-3 times / week, and obviously prefer fitness. We find that most subjects say they rest better after exercise sessions. Although they are quite active and personal interested in rest and recovery, and students do not usually pay attention to breathing properly or use different methods to improve breathing.

References

- Avramescu, T., 2005, Kinetotherapy in Physical Activities, Bucharest: Didactic and Pedagogic Publishing House, 71-72.
- Beersma, D.G., 1998, Models of human sleep regulation. *Sleep Medicine Reviews*, 2, 31-43.
- Bompa, O.T., 2002, *Training Theory and Methodology*. Bucharest: Ex Ponto, 78-79.
- Brătîlă, F., 2002, Recovery after psychological and physical stress. Bucharest: S.C. Transport by Road Publishing House, 50-55.
- Cole, R.J., 2005, Nonpharmacological techniques for promoting sleep. *Clinics in Sport Medicine*, 24, 343-53, xi.
- Current perspectives and futures directions. *Reviews in the Neurosciences*, 2006, 17, 375-392.
- Haack, M., Mullington, J.M., 2005, Sustained sleep restriction reduces emotional and physical well-being. *Pain*, 119, 56-64.
- Halson, S., 2008, Nutrition, sleep and recovery. *European Journal of Sport Science*, 2008, March, 8 (2), 119-126.
- Ionescu, A., Anton, B., 2006, Medical Management Effort., *Centrul de Formare și Perfecționare a antrenorilor*. National School of Coaching. Bucharest, 66-68.
- Mindell, J.A., Meltzer, L.J., Carskadon M.A., Chervin R.D., 2009, Developmental aspects of sleep hygiene: Findings from the 2004 National Sleep Foundation Sleep in America Poll. *Sleep Medicine*. Volume 10, Issue 7, August, 771-779.
- Reid, K.J., Baron, K.G., Lu B. Et al., 2010, Aerobic exercise improves self-reported sleep and quality of life in older adults with insomnia. *Sleep Medicine*, Volume 11, Issue 9, October, 934-940.
- Reilly, T., Edwards, B., 2007, Altered sleep-wake cycles and physical performance in athletes. *Physiology and Behavior*, 90, 274-284.
- Stepanski, E.J., Wyatt, J.K., 2003, Use of sleep hygiene in the treatment of insomnia. *Sleep Medicine Reviews*, 7, 215-225.