

Nutritional Practices of Chess Grandmasters



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High-level competitive chess is considered a demanding sport, not only mentally speaking but also, physically. A tournament chess game can take more than seven hours under stressful conditions for players.

Investigations carried out by the German International Chess Grandmaster Helmut Pfleger, MD, et al. have demonstrated that the elite chess players have comparable physiological parameters in competition as those who practice sports such as shooting, car racing and golf; consequently, chess could be classified as the same category of sport as those according to these criteria.

As a result, it will be necessary not to limit preparation to hours of study on the board, but to extend it to a more complete program involving physical training and an adequate nutritional plan for the demands, among others.

In order to analyze the sports habits of active International Grandmasters, a world survey was conducted in 2006, with particular emphasis on dietary habits.

We haven't found previous studies referred to nutritional practices of elite chess players, and we expect that the results of this research can be interesting and useful for chess players, including Grandmasters, as well as medical doctors, nutritionists, and physical trainers.

The present study involved seventy-two active International Grandmasters (17 women and 55 men, 18-55 years old) from thirty-five countries who answered an e-mail questionnaire including fifteen topics.

The average ELO rating of the surveyed players (according to the FIDE list, October 2006) was 2402 for women and 2551 for men.

Nutritional Habits

66.7 % of the surveyed Grandmasters ate at least three meals a day and 36.1 % often skipped breakfast.

Breakfast is one of the most important meals of the day because of its direct impact on the mental (and physical) performance in the morning. It has a direct effect on the glucose concentration in the brain and liver, and supplies a number of nutrients which are essentials to produce neurotransmitters, chemical messengers which act over neuronal cells communications.

Many investigations have shown that mental concentration can be affected when doing intellectual activities in the morning without having had breakfast previously, and that a proper breakfast helps to keep the mental performance in that moment of the day, according to tests on memory and attention. Even if specific investigations are still necessary for chess on this matter, it can be inferred that the performance of chess players who train or compete during the morning hours could be affected in the same way.

Among the reasons why breakfast is skipped, the most common one is that some players study chess until late in the evening and then get up after breakfast time.

Regarding the specific nutrition scheme for tournaments, the main results were the following.

The majority of Grandmasters (66.7 %) avoided overeating or having food of difficult digestion before the games, while the rest preferred a regular or habitual intake.

It is known that after eating, the bloodstream of the organs involved in the digestion process rises and, consequently, the blood and oxygen supply to other organs, as the brain, decreases. If the quantity of

food is voluminous or of difficult digestion, consequences will be even more severe or last longer, and people may feel sleepy and tired, less alert and focused, and prone to make more mistakes in relation to attention and search tasks.

During games, a great number of chess players (95.8 %) ate some sort of solid food or fluid, while the rest did not. The most preferred solid food by Grandmasters included chocolate (80.5 %), fruits (14.6 %) and cereal bars (9.8 %). Regarding types of fluid, main preferences were water (72.1 %), coffee (42.6 %), tea (29.5 %) and fruit juice (23.6 %).

From a qualitative point of view, these liquid and solid foods choices can be considered as satisfactory, for their supply of glucose, water and other nutrients, and their adequate digestion times.

Half of the surveyed players (thirty-six) took some sort of fluid even without feeling thirsty.

Feeling thirsty is a sign of needing a drink but it is a late symptom and, as a result, it is not the right indicator to determine the state of hydration. A percentage of the quantity of water in the body may be lost before feeling thirsty, enough to affect and decrease the mental performance in attention, efficient arithmetic and short-term memory, in comparison with a proper hydration condition, as shown by a research. Also, thirst is an uncomfortable sensation for a player.

During competitive chess games, it is common to lose water by sweating and, many times, the environment is hot and/or humid. Furthermore, sweat losses can vary a lot among athletes because of a multitude of factors like skin surface area, gender and maturation, work intensity, cloth, fitness, heat acclimatization, diet, etc., and therefore individual recommendations to effective fluid replacement are difficult to make.

A very important finding of the present study was that a minority of Grandmasters (two players) reported to follow a diet supervised by nutritional specialists, designed to reach their mental and physical demands of energy and nutrients.

Approximately one third of the chess players (twenty-three) reported dietary supplements use. The most frequent ones were vitamins, minerals, amino-acids and proteins.

Even if all the dietary supplements taken by the surveyed Grandmasters are permitted by the World Anti-Doping Agency (WADA) for their use out and in-competition, we must take into account that a wrong use of this kind of products can damage the health condition and that there is scientific proof that an important number of these supplements may contain prohibited substances, not specified on their labels. Despite the controversy about the implementation of anti-dope controls over chess, these are being carried out in some of the top-level competitions (World Championships, Olympiad) and, therefore, a player can be penalized due to the consumption of a prohibited substance, voluntarily or involuntarily.

Other related habits

Regarding to physical training, 87.5 % said to do some kind of physical activity besides chess training. 51.4 % reported to do it on a regular basis (three or more times a week) as part of their general training, while 36.1 % claimed to do it less times a week or on even a more sporadic basis. The rest 12.5 % referred not to do any kind of physical activity at all.

Grandmasters within the group of those who did some kind of physical activity on a regular basis chose among swimming (nineteen players), jogging (fifteen players) and gym (fourteen players), followed by football, tennis, long-distance walks and cycling.

The physical activity done on a regular basis, specially aerobic, may help the chess player in many ways: it makes body posture better, improves resistance and endorphins production (substances produced by the body that have a positive effect on the emotional state, causing a sense of comfort) and can reduce anxiety, depression, tension and stress, and can slightly improve the cognitive performance (memory, intelligence, creativity), vigor, and keep mental clearness. It also contributes to manage and keep an ideal weight and reduce body fat, it reduces the concentration of lipids in the blood, raises the HDL cholesterol level ("good cholesterol"), it is one of the basis for the treatment of mellitus diabetes, and strengthens bone mass, among others.

It is a fact that, from decades until now, many ex-world champions and other top-level chess players have been undertaking programs that included physical training.

One question about tobacco consumption was included in the survey, for the well-known negative effect of this habit on health condition. Smoking is an important cardiovascular risk illness factor, it predisposes to cancer of the lung, larynx, pharynx and mouth cavity; may cause emphysema; etc. And also this habit affects nutrients negatively. Tobacco nicotine reduces the possibility for the body to make use of calcium leading to osteoporosis, and smokers suffer from vitamins (and precursors) deficiency, like B1, B12, C and β -carotene, among others.

In this research, we found that 15.3 % of the surveyed chess players claimed to be smokers.

Conclusions and recommendations

The results of this research provide information about sport and nutritional habits of the active International Grandmasters, but it is necessary to take into account that more investigations on these topics are needed.

Regarding these results, author carries out some practical recommendations about healthy habits to athletes, which could help to improve a sport performance too.

- Chess players should try to have breakfast daily.
- Avoiding “heavy foods” or foods of difficult digestion before games must be adopted as a regular habit for chess players. The last “main” meal before a game has to be had at least three hours in advance. If a player wishes to have something to eat nearer the time of the beginning of a competition (one or two hours before, e.g.) he/she should choose among fruits (whole ones, fruit salad or juices, raisins), cereal bars, pretzels, cookies, low fat yogurt with fruit or cereals, sports drinks.
- During the games, it is recommended fluid ingestion, and, if the chess player wants it (or when the game becomes long), solid foods. Mineral water, fruit juices, tea, coffee, sports drinks, cereal bars, fruits, raisins, dry fruits (almonds, e.g.), chocolate, cereal cookies, can be chosen. In all cases, moderate quantities should be taken.
- The best strategy to hydration is to drink small quantities at regular intervals, instead of greater quantities at a few intervals, and avoid being thirsty. The same indication should be followed during board training and physical activity. It is also important to begin the activity properly hydrated.
- It would be good for chess players “to train” the quantity of fluid to be drunk while playing training games in situations similar to the tournament’s; in order to determine if the options and quantities are well tolerated (and to become familiarized with them) and then, avoid drinking quantities during an important game which may result in concentration loss. The same routine should be taken into account for solid foods.
- Some characteristics of the urine can show the state of hydration, which gives players a very good reference. If at any moment of the day the color of the urine is dark yellow, it is small in volume and has a strong smell, then all these signs could be showing that the chess player might not be properly hydrated and, consequently, should drink plenty of water or fluids containing water in considerable proportion.
- It would be advisable for the elite chess players to count on scientific nutritional consultancy in order to cope with all the requirements that top-level chess entails, because nutrition plays a significant role in the sport performance.
- The improper use of dietary supplements, mainly under self-supervision or non-professional supervision, can cause health problems and may result in a positive anti-doping control. It is

advisable that chess players take dietary supplements only if these are prescribed by a medical doctor after a complete general check, and, in the case of top players, only those ones which are not on the list of the banned substances and methods for chess. The players must be informed about the current World Anti-Doping Code.

- Physical activities should be considered as an important component of the chess player training. It is necessary to attend clinical- cardiologic tests before starting doing this type of activity and this program must be designed by a doctor or a physical trainer.

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