

2014

BioTechnology

An Indian Journal

FULL PAPER

BTAIJ, 10(9), 2014 [3359 - 3364]

Research on the individual nutrition strategy based on Chinese constitutional dietary in competitive sports

Guoqing Su

Xi'an University of Posts & Telecommunications, (CHINA)

ABSTRACT

Chinese traditional medicine is a popular topic in the past years. Chinese Constitutional theories, as one brunch of Chinese traditional medicine, have been used mainly in the improvement of common people's health quality. Besides, the dietary based on Chinese traditional medicine also functions to help Chinese people remain healthy physical qualities. Once these two topics are combined, Chinese Constitutional Dietary has been on the stage. Though it has not been experimented in the competitive sports, its feasibilities can be foreseen. This thesis introduces body constitution system, its practice and its links with Chinese dietary to give an overview of Chinese Constitutional Dietary, then briefly presents how it can be combined into individual nutrition strategies for competitive athletes and finally confirms the feasibility of Chinese Constitutional Dietary on individual nutrition strategies in competitive sports.

KEYWORDS

Chinese constructional dietary; Constitution; Diet; Nutrition strategy; Competitive sports.



INTRODUCTION

Chinese Constitutional Dietary is a combined subject of Chinese Constitutional Theories and Dietary. Both are based on Chinese traditional medicine, but with different focuses. The years' research have proved its function to improve the overall health status of common people. And the nine body constitutions raised by Qi Wang have been widely used to diagnose people's physical conditions. Among the nine constitutions, the balanced constitution is the best and ideal. And the other eight share imbalanced pathogenic factors to have more possibilities to be attacked by diseases. Different constitutions are prescribed to take different treatments or dietary strategies to improve the health, and that calls for the dietary brunch. With the further development and attention, Chinese Constitutional Dietary has now been widely used in the improvement of common people's physical quality.

Regarding the individual nutrition strategies, they are elementary for fostering an athlete. Current strategies of individual training is paying attention to eating the right things by best ratio. And the Chinese Constitutional Dietary strategies are safe, clean, natural, compatible and customized, compared with current strategies, meanwhile, they cost more time, are less experimented and can not be used as a single diagnosis to evaluate the physical body level. In addition, Chinese Constitutional Dietary can be applied and will work effectively as an assistant individual strategy for competitive athletes.

CHINESE CONSTITUTIONAL DIETARY

Modern Chinese Traditional Constitutional Theories have formed on the basis of the document literature and clinical practice, with the absorption of knowledge and methods of modern scientific subjects, for over 30 years. Under the guidance of Ying-Yang literal theories, Five Elements Theories of Chinese Philosophy, Viscera-Meridians Theories, Qi-Blood-Fluid Theories and other basic theories in Chinese traditional medicine, Constitutional Theories of Chinese traditional Medicine, in accordance with Inner Canon and practical constitutional theories, have defined certain principles. Chinese Traditional Medicine researches tend to be patients-oriented, and Chinese constitutional then receive worldwide attention. In addition, Chinese constitutional Dietary, as another directive brunch, has been widely applied in China's daily dietary and practice.

Body constitution classification according to traditional Chinese medicine

The core content of Chinese constitutional study is the constitution classification. Body constitution classification is the rule and regulation extracted from complicated constitutional phenomena. Body constitution can be divided into groups, due to the individual variation, whereas, the constitutional system is diversified but shares homoplasy.

Ever since the ancient times, doctors and scholars devote themselves to discourse upon the constitution classification. Among them, three theories stand out. One is Yumin He's Three Main Constitution Theories of Strong Constitution, Weak Constitution, and Imbalanced Constitution. The other was put forward with by Tiaoyuan Kuang, who put human constitutions into six groups, one Normal and Balanced Constitution Type, and other five pathological types.^[1] Last but not least, Qi Wang's nine constitutions' classification is even accepted more in today's diagnosis (listed in TABLE 1)

TABLE 1 : Qi Wang's Nine Constitutions ^[2]

Constitution Type	Exterior Physical Characteristics
Balanced Constitution	A slim figure.
Qi-Deficient Constitution	No strong muscle.
Yang-Deficient Constitution	A plump figure and no strong muscle.
Yin-Deficient Constitution	A tall and slim figure.
Phlegm-Dampness Constitution	A very plump figure with waist fat.
Damp-heat Constitution	A very plump figure or a thin body.
Stagnant Blood Constitution	A thin figure mainly.
Stagnant Qi Constitution	A thin figure.
Inherited Special Constitution	

In Qi Wang's theories, those nine constitutions are classified by five factors, the exterior physical characteristics, the common behaviors, the psychological features, disease intention and adaptabilities to the exterior. Especially efforts on the exterior physical characteristics are described a lot for each constitution. The TABLE 1 gives more the corresponding physical characteristics of each constitution except Inherited Special Constitution. But literally speaking, balanced constitution should differentiate itself from the other biased constitutions in terms of physical structure, biographic function and other physical features, which have been utilized in the guidance of national sports program to improve the whole physical performance of the nation.

Influential features of body constitutions

Despite the body Constitution type of a person is determined since an embryo, it will further form a stable pattern under the exterior influence. In this way body constitution is decisive by the genes, and have influential factors to gradually form its specific features. Body constitution is then showing a stable characteristic with mutual functions of inherence and acquisition as well as with a dynamic trend.^[3] This makes it possible to change one's own body constitution type gradually.

In terms of the exterior and acquired factors, the living conditions, dietary structure, geographic environment, seasonal change and other social and cultural situations contribute to the body constitution adjustment. Among all the acquired factors, living condition is the elementary one. Living conditions directly represent the development and advancement of the the society, and it consequently brings the times' characteristics to the groups of body constitution. In the distorted war era, citizens were starving and people's spleen and stomach was that hurt. Meanwhile, it turns to the current days, the living conditions are diversified, so are the body conditions, with more biased cases of different types.

To adjust the body constitution to the unbiased one requires proper food and medicine in accordance with each one's current body constitution and do exercise to speed up the adjustment process.

Practice of body constitution theories in sports

Chinese constitutional theories are widely applied in clinical treatment, as many scholars have widened its use to illness, treatment, medicine, prevention and recovery^[4]. When it comes to Sports and wellbeing, we may still find its application, though not a big progress so far.

With the development of society and advocacy of social media, people have conceived higher awareness of health. And they tend to protect themselves from kinds of attacks including illness. They care about sports practice, and do it, but they are still not that healthy. The problem is that doing practice does not refer to a healthy body for sure. Only with scientific practice, health can be obtained. Then, the topic how to do the scientific practice has become a focus both abroad and at home. Research has proved that better fitness brings a closer status to wellness. However, the fitness differs from each other. So the scholars put their emphasis on how to define the fitness of each individual and Chinese constitution is thus considered. The research on the influence of university students' constitution on their sports item choices and habits is one of its application to give insights on reasonable practice program arrangement. However, the current research field does not include experimented cases of its application on competitive sports, and the main emphasis is still on the common people.

Body constitution and chinese dietary

Chinese dietary is the application of food to treat illness, prevent illness or quicken the recovery. It is different from normal diet, medicined diet and medical treatment, with three characteristics, which are syndrome differentiation and treatment, integrated dietary, and a strict control of diet. To provide effective and right dietary, a good mastery of food nature is necessary. For example, a Phlegm-Dampness Constitutional person is suitable for plain food which also reduces phlegm like ginger, but those of Yin-Deficient Constitution are recommended not to have it. However, owing to the dynamic feature of body constitution, the dietary changes all the time.

Body constitution and Chinese dietary are both the brunches of Chinese medicine. But the body constitution seems to be the basis, while Chinese dietary is the directive product. With Body

Constitution Theories, the system of dietary was established and on the contrary it restricts the body constitution formation.

On one hand, diet as one important content of living conditions has a direct impact on the construction of body constitution and leads it development. A chef is intended to own a phlegm-dampness constitution (Tan-Shi), as he obtains too much protein from daily work even if he used to be balanced.

On the other hand, an individual diet could maintain the health of the whole physical body. Modern medicine claims that all the diseases are coming from the enhancement or recession of certain steps during the transition of physical bio signals. And the treatment itself is to heal it and balance the whole process. A individual Chinese diet is formulated only after the recognition of the body constitution, however, it could regulate the wrong things. And it also shows the importance of a healthy Chinese dietary.

AN OVERVIEW OF INDIVIDUAL NUTRITION STRATEGY BASED ON CHINESE DIETARY IN COMPETITIVE SPORTS

Current individual nutrition strategies in competitive sports

Robert Hass, American famous clinical nutritionist and athlete tells the importance of proper diet for athletes along with his excellent diet program for competitive athletes in the field of tennis, field and track, swimming, skating and etc. In his book "Eat to Win", he recommends proper and scientific nutrition provision in according to ages, athletes events, practice volume.

Sports Nutrition, as a specialty course and a brunch of Human Nutrition, came to the stage later than other brunches of Sports Medicine. In the very early stage, it studied athletes' dietary habits to set up the sports nutrition knowledge system. Afterwards, the scientific research helped it to further developed. People then began to use advanced technical skills to study and to explore the Sports Nutrition. And China's study in this sector initiated in 1950s and the available studies have been utilized in improving athletes' individual performance.

Some current researches up to now are listed as below:

1. To further study the relationship between metabolic rate of protein, enzyme, and fat and sports abilities in exercise, for the purpose to control the supplement of these ingredients in diet or from supplementary. Protein is the basis of a living creature, it constitutes enzyme and certain hormone. Besides, fat is the source of power and strength and should be controlled strictly especially for the figure skaters who need flexibilities to complete extremely difficult actions. Figure 1 shows a nutrition strategy of a Marathon athlete who is adjusting his competitiveness status, and it is a result of scientific nutrition strategy.

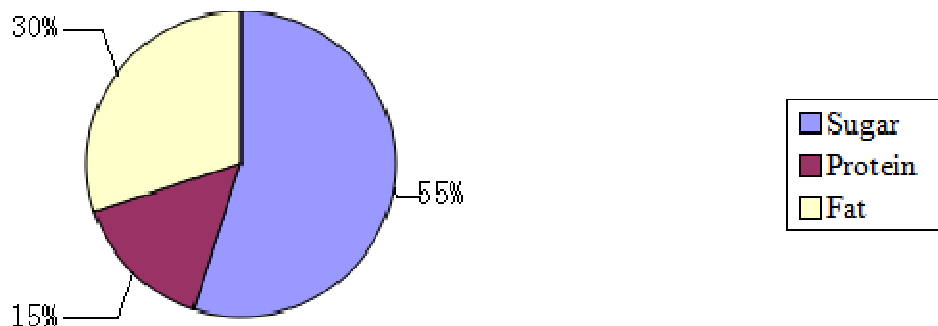


Fig. 2 : A nutrition strategy of a Marathon athlete who is adjusting competitiveness status^[4]

2. To probe the connection between water, mineral salt, trace elements and sports abilities. Water accounts for 60% weight of an adult which transfers nutrition and gives the waste away from our physical body. In sports it plays a tremendous role of balancing body temperature and heat. Mineral salt works to balance the capacities inside and outside the cells, and determines the excitement of nerves and

muscles. Five elementary trace elements, Iron, Zinc, Cuprum, Selenium and Chromium are proved closely related to sports performance and competitiveness.

3. To innovate Sports Nutrition oriented method to improve competitiveness. Sports training is a complicated and scientific systematic project, and of it fatigue and recovery are the two decisive factors.^[5] The recent research has been put on two aspects: one is the basic nutrition offering and the other is the nutritional supplementary, for example, HMB β , creatine and etc. Unlike dope, they are both legal and encouraged to be properly used.

4. To work out balanced diet as one main topic under Sports Nutrition. Different ratio of nutrition outputs metabolic rates in differentiated level, therefore, has a direct impact on athletes performance. A series problems of the ratio are still waiting to be resolved.

From the information above, it is easy to find that the whole Sports Nutrition course follows a scientific trend as Robert suggests. The key point of these research is to achieve the balance by correct and the perfect ratio. However, the definition of “correct and perfect” differs from each athlete. Then, it calls for the individual nutritional supplement strategies and one of its important content is the diet.

ADVANTAGES OF INDIVIDUAL NUTRITION STRATEGY BASED ON CHINESE DIETARY IN COMPETITIVE SPORTS

Chinese medicine is believed to be the safer treatment than that Western medicine offers. If we take an overview of the international nutrition field, most of the athletes apply the Western method and are particular about the ratio of nutrition ingredients. However, in Chinese traditional medicine, the balance refers to another method, Ying and Yang, the balance between the main and collateral channels, and dryness and wetness. And the practice has proved that the power and positive influence on the practice performance. It does not only cure the diseases but also prevents them, which remains athletes' performance stabilities without negative influence of illness.

Chinese dietary focuses on the nature of food and emphasizes its medical function as well as its cooking method. So to treat an illness or to prevent an illness does not involve modern medicine prescription. Moreover, it cares about the relationship between food, and gives the best companion option for the chefs. Indeed, the daily diet presented is still the delicious dish but with more efforts to match added. In this way, individual treatment is the ideal diet for any day in the competitive year without taking the risks of medicine abuse.

Furthermore, as the diet is the treatment, it will not conflict with other necessary Western treatments, the injunction or oral medicine. The Chinese dietary is compatible with any treatments. And the common feature of Chinese dietary is plain which with less salt and sugar but lets the delicacy of nature food stand up. As a result, no need to worry about the normal nutrition supplementary of water, salt and etc.

In addition, since each athlete shares different body constitution, to most extend, the individual diet strategy has to be customized. It means no one can share a dish unless they share the same body constitution. Plus the stabilities of a body constitution, it remains the high quality and good progress of the body constitution adjustment.

Foreseeable difficulties of individual nutrition strategy based on Chinese dietary in competitive sports

Body constitution recognition though can foresee the disease but treats it as a long-term target, which requires more time for the athletes to see a great progress. And if it is an instant decease or hurt, it cannot get it resolved as quickly as a Western surgery can.

Practice of body constitution is now mainly implemented and promoted in common people's health construction, therefore, the experimental data and practice suggestions are both of the normal common people. And its influence on a professional athlete is not yet measurable accurately. So far it could only be taken as an assistant task in competitive sports, before its high-level and more involvement of its practice is available.

The aim of a comprehensive individual nutrition strategy is to closely monitor the athletes' performance, to provide full energy and to give adjustment. A body constitution system provides an overall look of the physical body, and classifies all the whole nation into nine main constitutions, meanwhile, only nine are classified. The body constitution diagnosis gives insights on how to adjust each constitution into a balanced one. Then, the dietary will be set up for that purpose, though the balanced body constitution has been proved better performed in sports. With regard to current widely-applied monitoring system of athletes training, there are three main contents (Figure 2) Physical function diagnosis and Monitor is one important step, however, only Chinese body constitution can not meet all its requirements. Some indexes of Diagnosis of athletes' physical functioning are muscle function, cardiopulmonary function, blood system, endocrine system, immunologic system and etc., which can only be examined by precision instruments.^[6] On the other hand, Chinese body constitution diagnosed the body only by looking, listening, questioning and feeling, therefore, a detailed examination list of the indexes and result cannot be provided. That is the limitation of Chinese dietary in terms of diagnosis and shall be made up for by other diagnosis system, for example, Nutrigenomics.

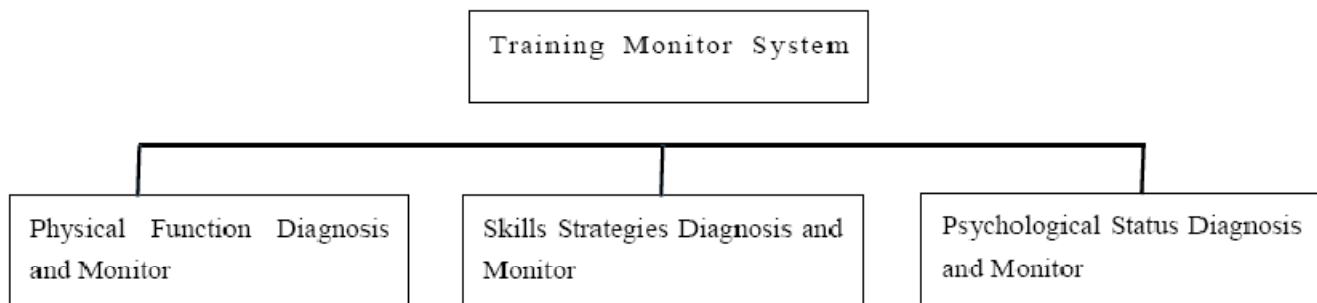


Figure 2 : Training Monitor System Model

CONCLUSION

Competitive athletes are the ones who deserve special care. They are exposed to an open place with more possibilities of illnesses. Therefore, a scientific and effective individual nutrition strategies helps them to maintain a relatively good and stable competitive abilities. Considering the practice of long-term Chinese Constitutional Theories and Chinese dietary on common people, Chinese Constitutional Dietary is believed to work efficiently as one component of each strategy. With an accurate and detailed monitoring of each athlete's competitive indexes and a diagnosis by a certified Chinese traditional medicine doctor, a specialized individual training monitor system can launch. Apart from the normal nutrition supplementary or necessary medical treatment, each athlete will have diet according to his or her exclusive menu, which is safe, compatible to all the treatments and can gradually enhance the personal physical quality. However, Chinese Constitutional Dietary might work less effectively, if only it is implemented.

REFERENCES

- [1] Diaoyuan, Kuang; New Concepts for Diet in the New Century [M]. Constitutional Food-Adjusting. Shanghai: Shanghai Science and Technology Documents Publishing House, 80-121 (2004).
- [2] Qi, Wang; Classification and Diagnosis Basis of Nine Basic Constitutions in Chinese Medicine [J]. Journal of Beijing University of Traditional Chinese Medicine, **28(4)**, (2005).
- [3] Meng, Ding; Constitution Theories in Traditional Chinese Medicine and Physical Education Research [M]. Research on Subjects of Chinese Traditional Medicine, (2006).
- [4] Ye Tian, Qing Wang, Lianshi Feng et al.; Monitoring of Sport Training and Regulation of Competitive State in Elite Athletes [J]. China Sport Science, **28(9)**, 03-11 (2008).
- [5] Rongsen, Wang; Fatigue and Recovery after Practice [J]. Journal of BZNC, **14(4)**, 74-78 (1998).
- [6] W.G.Hopkins; How to Interpret Changes in an Athletic Performance Test. Sports Science, **8**, 1-7 (2004).