Principles of diet therapy in ancient Chinese medicine: ‘Huang Di Nei Jing’

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Huang Di Nei Jing, the first systematic Chinese medical book, was compiled from the observations of imperial herbal doctors in the Qin and Han periods (221 BC – 220 AD). From this classic traditional source may be derived the concept of a balanced and complete diet and probably the world’s first dietary guidelines. Basic to the tradition are hun, xu, wen and bu foods, respectively ‘cold’, ‘hot’, ‘neutral’, ‘strengthening’. Basic to Chinese cuisine are jan and tai – ‘cereal’ (the rice staple and main meal) and ‘dishes’ to accompany the rice. Chinese traditional medicine, as in Huang Di Nei Jing, considers the nourishment of body and mind. It also emphasises that herbal medicine and food have the same origin. Diet was essential to the prevention of disease which a glossary of Chinese terms is given at the end of the paper in the Chinese tradition, was superior to treatment.

Introduction

The written history of Chinese medicine can be traced back 2000 years. Huang Di Nei Jing (1), which literally means ‘The Yellow Emperor’s book of medicine’, one of the first classical Chinese medical books, was written during the Qin (221 BC – 207 BC) and Han (206 BC – 220 AD) periods. Traditional Chinese medicine contributed enormously to the health of the Chinese and its main theories were exchanged with many countries around Asia(2,3).

Huang Di Nei Jing(4) was the first systematic medical book to be published in Chinese. It stemmed from the accumulation over centuries of clinical experience and epidemiological observations by the imperial herbal doctors. The theory of Chinese medicine was influenced by ancient Chinese philosophy, especially that of cosmology and movement of the universe. It had been hypothesised that things were composed of five elements – gold (2), wood (3), water (4), fire (5) and earth (6) – and that all material was in a process of change between the universe and the human body. Doctors believed that each individual is both a part of the universe and a complete unit, so that a cosmic view of health was required.

Within this philosophy, phenomena were understood in terms of contradictory relations, for example, the sun versus the moon, the sky versus the earth, the day versus the night, the male versus the female and the positive versus the negative. Ancient doctors analysed the physical signs and symptoms of a case by differentiating the appearances into two opposite categories, for example, into yin (7) (dark) and yang (8) (bright), hun (9) (cold) and re (10) (hot), xu (11) (weak) and shi (12) (strong), superficial (13) (exterior) and internal (14) (interior). It was thought that these extremes existed at the same time and were interchangeable, moving to the opposite extreme when conditions changed; for example, water became air when temperature rose. This was expressed as ‘things at one extreme must go to the opposite extreme’ (15).

A healer needed to understand the mind (heart) and the functions of organs before a particular treatment could be given – a Chinese psychosocial and biomedical view of health and disorder. The importance of preventive medicine was also stressed. ‘The saint can cure not only those who are sick but has the ability to cure those who are not sick’ (16) it was said. The prevention of disease was considered superior to the curing of disease.

Although the theory of traditional Chinese medicine survives to this day, it has evolved and developed into several schools over the last 2000 years. The present paper reviews the basic principles of the Huang Di Nei Jing.

The concept of a ‘balanced diet’ and a ‘complete diet’

The imperial herbal doctors, concuring with Confucian schools, paid a lot of attention to the ‘attainment of nourishment’ (17) by selecting appropriate food in a way which was somewhat philosophical. By ‘appropriate’ (18) amounts of food was meant not too much or too little, otherwise it was thought that one health extreme or the other could result. Because there was no knowledge of energy or nutrients, the word ‘appropriate’ probably referred to having various food sources in the diet (ie a wide variety of foods).

In Huang Di Nei Jing, Chapter 81, section 22, there were these following recommendations for food intake:

1. Poisons (presumably substances like antibiotics to rid or destroy unwanted principles in the body) and medicines provide cure.
2. Five cereals (rice, sesame seeds, soya beans, wheat, millet) provide nourishment.
Five fruits (dates, plum, chestnut, apricot, peach) produce complementarity. Four animals (beef, dog meat, pork, mutton, chicken) give advantage. Five vegetable ingredients (cabbage, sprouts, chilis, onion) are for suppleness. In addition, if the food tastes and smells good, eat it to replenish the body's needs. These were probably the first dietary guidelines in the world, and in both the 'nutritional' and the 'organic needs' of the body was sought.

The first part of the quote means that medicines should be considered food. The following four parts of the statement describe basic food groups and reflect principles, like having a variety of cereal like foods in order to nourish the body. The number 'five' (as in holding out a hand with five digits) does not mean a number per se, but signifies the varieties of cereal, fruit, animal and vegetable derived foods. Cereals were considered basic food for nourishment in daily life, and fruits were placed second because they compensated for shortages in whatever cereals provided. Animal-derived foods, like meats and meat products were then to be important to the human body, with its resemblance to the animal. Vegetables were perceived in the ancient Chinese diet to provide an extended range of substances. The end of the quote, 'if it tastes and smells good then eat it', indicates the importance of freshness, preparation and hygiene of foods.

With modernization and time, people and their circumstances of change and cultural exchanges between countries include those of food and technology. Sometimes cultures integrate. Thus the food produced in the Chinese restaurants of today will not be representative of the traditional diet because it will have been modified to suit the taste of people in various locations and countries. However, it has been shown in the 1988 National Nutrition Survey of China that most people living in the countryside and cities still follow traditional food patterns. The occurrence of certain degenerative diseases in China is lower than that in industrialized countries, which may in part be attributable to diet, which in turn is related to the conceptual framework for eating.

The concept of 'han' (cold) (19) and 're' (hot) (20)

'Han' and 'Re' were often translated to mean 'cold' and 'hot' (see above). However, both han and re mean more than these literal translations suggest. They refer, not only to the body's status, but also to its function, reaction and symptoms. For example, when a person has ingested cold food or eaten with related characteristic foods, their blood vessels will become constricted. Thus, han food can cause diarrhea and re food may cause constipation; han foods may cause nausea while re foods can cause heartburn. On the other hand, han food could combat constipation and re food diarrhea. These symptoms do not relate to food temperatures, but to the relationship between food and the human body.

Whilst food was believed to provide our bodies with nourishment, the body reacted or responded to food in different ways. For example, if a person eats too much meat, its metabolic effects through 'acid' production may be 'uncomfortable'. This is what is described as re. However, not all meats are characterised as re and not all re are meat. Modern nutritional science concentrates on the nutrient components of foods and on the metabolism of nutrients. It rarely acknowledges that there are both nutrient and non-nutrient substances in food which might affect the body. Unripened guava may cause constipation, but this may be caused by a tannin, which is a type of food chemistry in terms of tannic acid; this phenomenon is traditionally described as re. Ripened guava does not have the same effect and therefore is not considered as re. Efforts are now underway to link contemporary science with traditional Chinese food and health concepts. It has been argued that food which contains more or less calcium than anion can create a situation of either han or re, although such a generalisation is still difficult to accept at a point in nutrition science where the effects of fonts on one organ or metabolism are complex. The fruit and vegetables are considered as han which means that food high in dietary fibre belongs to the han category. That both han food and foods containing dietary fibre can cause 'emptying of the bowels' is a proximation of the two streams of thought.

Water
Chinese medicine also characterized the source or location of water like spring water, well water, or water from a stream, pond or river as han or re because the water's mineral composition is different, causing different biological consequences. Water which contain a lot of magnesium has been considered as han.

Table. Han, re, wen and bu foods of traditional Chinese medicine.

<table>
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<tr>
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<th>Re</th>
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</tr>
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<tbody>
<tr>
<td>Chick</td>
<td>Ginger</td>
<td>Pepper</td>
<td>Rice</td>
</tr>
<tr>
<td>Pork</td>
<td>Mutton</td>
<td>Peppers</td>
<td>Beans</td>
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<tr>
<td>Guava</td>
<td>Guava</td>
<td>Guava</td>
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<tr>
<td>Dates</td>
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</tbody>
</table>

'Wen', 'Wang', and 'Bu'
Food that is in-between han and re was considered 'neutral' (21), see Table. Rice is an example of a 'neutral' food. 'Neutral' and slightly re foods are considered as wen (22), which has the characteristic of a 'tonic' (warming). Wen food (usually comprised by bu (23) food to avoid nutrient insufficiency. According to Chinese medicine, wheat is slightly han, rice is neutral, and mutton is slightly re. Usually han food is cooked with some re food to neutralize it. For example, vegetables (a han food) are usually cooked with meat or pepper (re foods) to neutralise them. In the old days, the Chinese noticed that a food or food substance behaved differently when it was eaten with more recently, similar observations have been made by Wahlenstein et al. and Jenkins and Wolever to show that a given amount of carbohydrate or carbohydrate-containing food can cause very different glycaemic responses. Such contemporary nutrition science concepts may be regarded as analogous of traditional Chinese food concepts.

The 'han' and 'tsai' principle – the concept of 'cereal' (24) and 'dishes' (25)
The traditional Chinese meal contains two parts – the staple food, in 'cereal', for and the rest of the meal, referred to as 'dishes', in re. Cereal is the staple food in the Chinese diet and this may include rice, wheat, corn, sorghum and millet. The word 'dishes' (26) in Chinese is nowadays the same as that for vegetables, because Chinese dishes mostly contain vegetables, with other kinds of food added as ingredients. Therefore, the word has come to include meat, fish, egg, vegetables, beans and more. It also means 'accompanying food' (27) which indicates that 'dishes' is only a side dish to accompany the main course – rice. The traditional Chinese diet is, by weight, more than 50% carbohydrate from cereal, and dishes are comprised of more than 50% vegetable with the remainder coming from animal sources. Thence the notion, 'cereals are for nourishment'.

The concept of 'nourishing the body' (28) and 'nourishing the mind' (29)
The first chapter of Huang Di Nei Jing points out that diet and life should have a physical and psychological balance. It says 'Control your diet, regulate your life, do not carry out unnecessary tasks, and then you will have a healthy body and a good spirit. If you carry this out all the time, you will live for a hundred years old (30).

A lesser ambition for those unable to carry out this admonition would be to 'Eat delicious food, do the same things as friends, entertain like others, but without aspirations. One can only be satisfied with what one has at present and be happy: one should enjoy one’s meals, improve and work as hard as one can, and take care of the family’s physical and psychological needs. This is what is meant by the phrase ‘one’s mind’. If food is only used to nourish the body, the mind may not be satisfied.

Herbal medicine and food come from the same origin (31)
Chinese herbal medicines are part of the normal diet. Chinese scholars believed that what we eat and drink should provide nutrients and other substances that the body needs. Some medicines may be used as part of a normal diet to maintain a healthy life. There are some interesting examples of this concept which merit identification location.

1. Certain foods have preventive effects in a normal diet. For example, linzi (32), a kind of mushroom, is believed to contain substances which may prolong life expectancy, and therefore ought to be included in a normal diet.
2. Even in ancient times, it was believed that liver could cure night blindness, scrawny foods could cure gout, and that black beans could cure anaemia and therefore that these should be added to a normal diet. No knowledge of vitamin A, iodine or iron was available for these assertions.
3. Those herbal medicines used in a normal diet were considered as foods. Those which were used for treatment of disease were referred to as medicine. Chinese yam, rice, ginger, and green onions are examples of items which may be ingested as food or medicine.
4. Herbal medicines which were used as medicine were sometimes also cooked as food in a combined dish. They were used as bu, for example ginseng (33) and dates (34). These foods or medicines were used according to the needs of the patient or healthy person. However, some have become so popular that they are part of a regular diet.

In traditional Chinese medicine, 'nourishing the body with nutrition' is very important. The classical medical book Huang Di Nei Jing, and other medical books, regarded nutrition as the essence of a Chinese person's life. The principles of the Chinese medical were realtely based on clinical experience and epidemiological observation. Reviewing the thinking behind Chinese medicine helps us understand its principles. The use of preventive medicine in diet is an important part of the early Chinese concept. Chinese have traditionally regarded food as containing both nutrient and equally valuable non-nutritive substances which link food and health in an inextricable way.

Acknowledgements – The author would like to thank Ms Susan Lui for her help in the development of this paper.

References
Five fruits (dates, plum, chestnut, apricot, peach) produce complementarity. Four animals (beef, dog meat, pork, mutton, chicken) give advantage. Five vegetables (cabbage sprouts, shallot, onion) are for supplementarity. In addition, if the food tastes and smells good, eat it to replenish the body's needs. These were probably the first dietary guidelines in the world, and they are in both 'the nutritional' and the 'organic needs' of the body was sought.

The first part of the statement means that medicines should not be omitted. The following four parts of the statement describe basic food groups and reflect principles, like having a variety of cereal like foods in order to nourish the body. The number 'five' (as in holding out a hand with five digits) does not mean a number per se, but signifies the varieties of cereal, fruit, animal and vegetable derived foods. Cereals were considered basic foods for nourishment in daily life, and fruits were placed second because they compensated for shortages in whatever cereals provided. Animal-derived foods, like meats and meat products were seen to be important to the human body, with its resemblance to the animal. Vegetables were perceived in the ancient Chinese diet to provide an extended range of substances. The end of the quotation, 'if it tastes and smells good then eat it', indicates the importance of freshness, preparation and hygiene of foods.

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References
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Glossary of Chinese terms:

1: (黃) 2: (金) 3: (木)
4: (水) 5: (火) 6: (土)
7: (陽) 8: (陰) 9: (寒)
10: (熱) 11: (寒) 12: (寶)
13: (熱) 14: (寒) 15: (補精氣)
16: (溫) 17: (寒) 18: (寒)
19: (實) 20: (虛) 21: (實)
22: (熱) 23: (寒) 24: (虛)
25: (寒) 26: (熱) 27: (熱)
28: (寒) 29: (熱)
30: (補) 31: (熱) 32: (寒) 33: (虛)
34: (陰) 35: (陽)

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中國古代醫學飲食治療精義

何志譚

本文概述以“黃帝內經”為主的古代飲食治療思想，以“養生為旨，五谷為養，五果為助，五畜為益，五菜為充，合五味以調之，以補精益氣”等，分析黃帝年代的膳食指導原則，和當年實際此後已經在均衡膳食思想，這種思想是辨證的。

中國古代不僅注意食物具有的滋養作用，也注意食物中“五穀”以外物質對人體的作用及人體對這些物質的反應。因而有“補氣則生殖，古代還提出養生與養志的均衡，提出養食平衡的基礎；主食與副食，即飯與餺飥的關係等，這些變化在今天仍有研究的價值。”
PRINCIPLES OF DIET THERAPY IN ANCIENT CHINESE MEDICINE

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13. (热) 14. (热) 15. (热热)
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中國古代醫學飲食治療精義
何志諦

本文概述《黃帝內經》所載的古代飲食治療思想，以『有毒者邪』、『五谷為養，五果為助，五畜為益，五菜為充，合氣味以調之，以養陰益氣』分析二千年前的膳食指導原則，和當年實行已存在均衡膳食的思想，這種思想是橋樑的。

中國古代不僅注重食物對人的滋養作用，也注重食物中藥物以外物質對人體的作用及人對這些物質的反應。因而自古至今，古代中醫提出養生與養治的均衡，提出了醫食同源的基礎；主食與副食，即飯與菜的關係等。這些提出在今天研究的價値。
Coronary risk in West Sumatran men

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Lifestyle, food habits and blood lipid profiles were studied in two areas—one urban and one rural—of West Sumatra, Indonesia, where coconut oil is commonly consumed. Subjects were 102 randomly selected healthy adult men aged 25 to 39 years. Variables considered were socioeconomic level, smoking habits, alcohol and coffee consumption, food intake, indices for obesity, and blood lipid profiles. Urban incomes were higher than in rural areas. The prevalence of cigarette-smoking was 75% in urban and 80% in rural areas. Alcohol consumption was higher in urban (31%) than rural areas (4%). Coffee was used by 52% of urban and 36% of rural men. However, quantities of alcohol and coffee consumed were small. Average energy intakes were 1915 kcal (456 kJ) in the urban and 1843 kcal (449kJ) in the rural areas. Protein intake was 55.8 g (11.3% of total energy) in the urban and 46 g (9.8%) in the rural areas. Fat intake was 45.8 g (20.4%) in the urban and 33.5 g (16%) in the rural areas. Dietary fat intake was significantly higher in the urban compared to the rural areas ($P<0.005$). The average BMI ($\text{kg/m}^2$) was 21.2 in the urban and 20.4 in the rural areas. Mean total body fat from 4 skinfolds was 13.4 kg in the urban and 9.1 kg in the rural areas (Durnin's equation). The waist-hip ratio was 0.90 in the urban and 0.88 in the rural areas. Concentrations of total serum cholesterol and of LDL, the LDL-HDL cholesterol ratio and the atherogenic index were significantly higher in the urban compared to the rural areas ($P<0.001$). Serum HDL tended to increase in the urban areas. Overall, higher economic status married men generally had the higher prevalence of coronary heart disease risk factors.

Introduction

Food habits in urban areas of Indonesia appear to be changing away from basic food commodities and towards products which encourage a greater fat consumption. From the present study it is possible to assess coronary risk factors amongst both urban and rural dwellers in areas where coconut milk or coconut oil is used for cooking and also to consider some socioeconomic and lifestyle variables.

In West Sumatra, especially in urban areas where coconut oil (minyak kelapa) is commonly used, because it is cheap and readily available, considerable change is taking place in lifestyle and food habits. Moreover, there is a traditional preference for fatty dishes in Padang, the capital of West Sumatra, as evidenced by such a favoured soup dish as Soto Padang, containing plentiful quantities of minced kelapa, chicken, rice and vegetables. As well as coconut and use of other plant fats there has been a tendency to increase fat consumption by using beef and dairy fat. Changing cooking and smoking practices are also likely to have had an impact on fat consumption.

West Sumatra is now regarded as having the highest coronary mortality in Indonesia where it ranks after respiratory infection and diarrhoea. Its prevention is of increasing importance. The accepted view in the Western cardiovascular disease literature is that the intake of saturated fatty acids and cholesterol cause coronary heart disease through atherosclerosis and that decreasing dietary fat intake will reduce the incidence of heart disease. This has been extrapolated to the use of local fats, such as coconut oil, in Asia and the Pacific irrespective of whether their use has been traditional or modernized (eg oil rather than meat or milk). Doubts have been raised about these extrapolations because of the short chain length and greater splanchnic metabolism of these fatty acids compared with their shorter chain counterparts. In West Sumatra, there are correlations between coronary risk factors and social class which also need to be explored.

As far as body fatness is concerned, the waist-to-hip ratio is now regarded as the best way of considering its contribution to cardiovascular disease, stroke and total mortality. Thus its appraisal in West Sumatra's urban and rural communities should be of value.

Subjects and methods

Subjects were healthy adult males aged 25 to 39 years living in an urban or a rural area of West Sumatra. Fifty subjects were selected by a random sampling technique from all people of the age group in Kelurahan Sungai Lanch, subdistrict of Koto Tengah which is a rural area and 52 from Kelurahan Padang Pasir Selatan, Padang Barat subdistrict, Padang, an urban area. The criteria used to classify the village as a rural or urban area were:

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