

Combining Acupuncture with Western and Chinese Nutritional Treatment in Obesity

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ABSTRACT

Background: Overweight and obesity are increasing globally. Poor eating habits contribute to its development and affect its treatment. This is an increased risk for cardiovascular diseases, diabetes, musculoskeletal diseases, pulmonary and gastrointestinal disorders, and some cancers.

Chinese Differential Diagnosis and Disharmonies: The specific diagnosis system in Traditional Chinese Medicine (TCM) distinguishes obesity in terms of emptiness, fullness, and full-heat types. Primary overweight is due to a weakness in the middle burner of Spleen and Stomach.

Acupuncture Treatment: Medical acupuncture enables an individual treatment as part of an integrative concept. Specific acupuncture points influence Spleen Qi Deficiency with Phlegm-Damp-Blockage, Spleen and Kidney Yang Deficiency, Liver Qi Stagnation with Spleen Qi Deficiency, or Phlegm-Fire in the Stomach.

Western Nutritional Assessment and Dietary Recommendations: Obesity is classified according to the WHO. The disease risk depends on body mass index and waist circumference. Nutritional lab parameters should be measured. The main goals are the reduction of abdominal fat and obesity-associated health risks and comorbidities, increased exercise, and behavior therapy. Low-fat and low-carb diets are recommended, as well as some other nutritional therapies.

Principles of Chinese Nutrition: The guidelines are based on the qualitative aspects of food in TCM. The most important effects are due to temperature and flavor. Depending on the different syndrome patterns, practical counseling selects hot, warm, neutral, cool, or cold food with salty, sour, bitter, sweet, or pungent flavors.

Conclusions: The prevalence of obesity means that a new medical treatment strategy is required. Modern Western therapies should include medical acupuncture and Chinese nutrition as an integrative concept for the benefit of patients.

Key Words: Obesity, Chinese Disharmonies, Acupuncture, Western Nutritional Assessment and Dietary Recommendations, Principles of Chinese Nutrition, Recipe for Obese

INTRODUCTION

IN 2005, TWO-THIRDS OF AMERICAN ADULTS were overweight. Thirty percent of adults and 15% of American children were obese. The total number of the population that is overweight or obese has tripled since 1980. Seven percent of the U.S. population eats at McDonald's every day, 20–25% eat in other fast-food restaurants. Twenty-eight percent of U.S.

citizens do not participate in any sport at least once a month. Obesity is considered to be the main reason for 10% of Americans having diabetes and 33% suffering from hypertension. According to the American Obesity Association, the total annual cost of obesity in 2005 was \$100 billion, and obesity led to the deaths of 300,000 people.¹ The medical costs of obesity increased to \$147 billion in 2008.² The National Health and Nutrition Examination Survey (NHANES) from

Private Practice, Kassel, Germany.

2010, a nationally representative sample of the U.S. population, reported a prevalence of obesity of 32.2% among adult men and 35.5% among adult women.³ Approximately 17% (or 12.5 million) of children and adolescents aged 2–19 years are obese.⁴ European countries follow this trend based on their increasingly poor eating habits. According to an OECD (*Organization for Economic Co-operation and Development*) report in 2010, more than half of the adult EU population is overweight or obese. In the UK, for example, the incidence of obesity has tripled in the last 20 years. This brings with it an increased risk for cardiovascular diseases, diabetes mellitus type 2, musculoskeletal diseases, pulmonary complications, gastrointestinal disorders, and some cancers. In Germany, obesity and its related diseases account for 6–8% of the total annual health care costs.^{5,6} In simple terms, obesity can be defined as a body weight higher than that found in a reference population, without negative effects on health. In contrast, the WHO defines morbid obesity as a chronic condition with a significant increase in body fat caused by a higher energy intake than energy consumption, leading to a reduced quality of life and high morbidity and mortality risk.⁷ The classification is based on body mass index (BMI). The calculated value is based on body weight in kilograms divided by height squared: $BMI = \text{body weight (kg)} / \text{height (m}^2\text{)}$. This review shows the relationships and treatment of overweight and obesity from the perspective of Traditional Chinese Medicine (TCM).

CHINESE DIFFERENTIAL DIAGNOSIS AND DISHARMONIES

According to TCM, obesity can be distinguished in terms of emptiness, fullness, and full-heat types. Primary overweight is due to a weakness in the middle burner of Spleen and Stomach. The following patterns of disharmonies can be found.

Spleen Qi Deficiency (Pi Qi Xu) with Phlegm-Damp-Blockage

Cause: Constitutional weakness, chronic illnesses, especially chronic malnutrition and overnutrition, and too much sugar, sweets, white flour products, fast food, sweetened beverages as well as wet, cold, and raw foods. Furthermore, irregular and disordered eating behavior, a mental burden of information overload, thought-processing in the form of persistent worry, and preoccupation with weakening of the transformation function of the spleen and accumulation of dampness and phlegm in the upper, middle, and lower burner.

Symptoms: A soft flabby physique, leaden fatigue, bloating, soft or mushy stools, abdominal bloating, swelling, nodules, edema, impaired appetite, taste disturbance, and lack of thirst perception.⁸ The tongue is pale, swollen, and shows dental impressions. The coating is thick, white, and greasy. The pulse is slow.

Spleen and Kidney Yang Deficiency (Pi Yang Xu, Yang Xu Shen)

Cause: Lacking *Mingmen*-Fire of the Kidney with inadequate heating of the middle burner and the Spleen Yang, lack of transformation of liquids, weakened Spleen Qi or Yang with subsequent Kidney Qi and Yang deficiency.

Symptoms: Limp, flabby fat on the abdomen, buttocks, and legs; fatigue; weakness; apathy; chronic sensitivity to cold in the back, abdomen, and pelvis; cold extremities; sacrum and knee problems; plenty of clear urine; edema; soft to watery stools with undigested food debris; little thirst; and an aversion to cold drinks and meals. The tongue is pale, moist, and has a white lining with tooth marks. The pulse is weak and slow.⁸

Liver Qi Stagnation with Spleen Qi Deficiency (Gan Qi Fan Pi)

Cause: Mental tension, emotional stress, anger, unsteady eating with cold and wet food, and repeated unsuccessful dietary attempts.^{8,9}

Symptoms: Overweight with cravings, irritability, mood swings, abdominal distension, altered stool consistency, postprandial fullness, bloating, sighing, globus sensation, menstrual disorders, and fatigue. The pale tongue has a thin, white coating, and the edges are sometimes red. The pulse is wiry.

Liver Qi Stagnation with Phlegm-Fire in the Stomach (Gan Qi Fan Wei)

Cause: Stress, emotional factors, frustration, and suppressed anger, impaired descending function of the stomach with symptoms of heat in the stomach. Furthermore, excessive hot and greasy foods, fast food, alcohol, and hot cooking methods such as roasting, grilling, braising, and frying can release this pattern.

Symptoms: Overweight with constant hunger, burning stomach pain, food cravings, severe thirst, irritability, heartburn, nausea, dry mouth, bad breath, bleeding gums, and strong physique with thick necks and a large abdomen. The tongue is red with a thick, sticky coating. The pulse is wiry, slippery, and full.^{8,9}

ACUPUNCTURE TREATMENT

The treatment plan for different conditions of obesity outlined in Table 1 is part of the integrative concept, depending on the individual disharmony.

WESTERN NUTRITIONAL ASSESSMENT

In Germany, overweight and obesity is classified by means of tables or discs in males aged 18–65 years,¹⁰ with obesity/pre-obesity being a BMI 25 to 29.9 kg/m² and

TABLE 1. ACUPUNCTURE TREATMENT SCHEME FOR DIFFERENT CONDITIONS OF OBESITY

<i>Spleen Qi Deficiency (Pi Qi Xu)</i>		<i>Phlegm-Damp-Blockage</i>	
SP 3	Tai Bai	SP 9	Yin Ling Quan
SP 6	San Yin Jiao	LU 7	Lie Que
ST 36	Zu San Li	CV 9	Shui Fen
BL 20/21	Pi Shu/Wei Shu	CV 12	Zhong Wan
All points with stimulating needling		ST 40	Feng Long
<i>Spleen/Kidney Yang Deficiency (Pi Yang Xu, Yang Shu Shen)</i>		<i>Liver Qi Stagnation/Spleen Qi Deficiency (Gan Qi Fan Pi)</i>	
KI 3/7	Tai Xi/Fu Liu	LR 3	Tai Chong
CV 4	Guan Yuan	LR 13/14	Zhang Men/Qi Men
CV 6	Qi Hai	GB 34	Yang Ling Quan
BL 23	Shen Shu	LI 4	He Gu
SP 6/BL 20	San Yin Jiao/Pi Shu	PC 6	Nei Guan
GV 20	Bai Hui		
All points with stimulating needling and using moxibustion is obligatory			
<i>Liver Qi Stagnation with Phlegm-Fire in the Stomach (Gan Qi Fan Wei)</i>			
LR 14	Qi Men	ST 36	Zu San Li
LR 3	Tai Chong	GB 34	Yang Ling Quan
LI 4	He Gu	ST 21	Liang Men
PC 6	Nei Guan	ST 40	Feng Long
CV 12	Zhong Wan	ST 44	Nei Ting

In addition, auricular acupuncture can be well used in all cases of emotional distress. The needles should be left in place for 20–30 minutes after the practitioner feels tenseness around the needle (the arrival of Qi). Acupuncture treatments are administered for two sessions per week for the first 2 weeks, and one session per week for the following 6 weeks. After a 6-week break, acupuncture is repeated at the same intervals for at least 6 months and up to 1 year, according to the initial body mass index. The average expected weight loss is initially 2–2.5 kg per month, followed by about 1–1.5 kg per month.

TABLE 2. CLASSIFICATION OF OVERWEIGHT/OBESITY ACCORDING TO WHO (2000) AND DISEASE RISK DEPENDING ON BMI AND WAIST CIRCUMFERENCE, MODIFIED FROM RICHTER⁶ AND REINCKE ET AL.¹³

	BMI (kg/m ²)	Waist circumference	
		Men < 94 cm Women < 80 cm	Men > 94 cm Women > 80 cm
Underweight	< 18.5	Decreased	Decreased
Normal weight	18.5–24.9	Average	Average
Overweight	> 25		
Pre-obesity	25.0–29.9	Slightly elevated	Increased
Obesity	> 30		
Obesity I	30.0–34.9	Increased	Sharply increased
Obesity II	35.0–39.9	Highly increased	Sharply increased
Obesity III	> 40.0	Extremely increased	Extremely increased

obesity being a BMI > 30 kg/m², according to Table 2. Further assessment methods include gynoid and android fat distribution assessed with anthropometric measurements, bioelectrical impedance analysis (BIA method), or infrared spectroscopy; measurement of waist circumference for the assessment of visceral fat depots, whereby a waist circumference > 80 cm for women and > 94 cm for men indicates high intra-abdominal/visceral fat (android) with increased risk for cardiovascular diseases (Table 2). The waist-to-height ratio (WHtR: waist circumference divided by height) and waist-to-hip ratio (WHR) represent the best predictor of cardiovascular risk and mortality.¹¹ The new area mass index (AMI) is an anthropometric method developed by the Giessen University group led by Professor Schlich. It uses 3D body scans (Avatar) to calculate the specific surface of the body. This is deemed much more accurate than BMI.¹²

Basic Diagnostic Assessment

A basic diagnostic assessment will include a standardized diet history, including attempts at dieting, nutrition log, recording the weight curve, movement activities, medication, psychosocial situation, and individual and familial risk factors. Additional parameters will include basal TSH, blood lipids, blood sugar, oral glucose tolerance test, HbA1c, creatinine, uric acid, liver enzymes, sodium, potassium, and regular monitoring of blood pressure values.^{7,10}

WESTERN DIETARY RECOMMENDATIONS

In accordance with evidence-based guidelines, goals for overweight and obesity are to reduce abdominal fat and obesity-associated health risks and comorbidities; improve quality of life; prevent further weight gain, or achieve a permanent weight loss, depending on the initial circumstances, of between 5% and 30% by weight monitoring discussions on health-promoting lifestyle, exercise, and behavior therapy.

Nutritional Therapies

Low-fat diet. The first stage recommends a reduction of fat intake to 60 g/day, with an energy reduction of about 500 kcal/day (level of evidence Ib). The second stage is a hypocaloric (low-calorie) mixed diet with a negative energy balance of 500–800 kcal/day (level of evidence Ib), sufficient quantities of complex carbohydrates and fiber, high food volume, a distinct feeling of fullness and adequate vitamin and mineral intake^{5,10} as a standard therapy of obesity (level of evidence Ia) with long-term efficacy.⁷ Recommended carbohydrate sources are whole grains, legumes, potatoes, raw vegetables, salad, and fruit. Important protein sources are lean meats, poultry, game, low-fat meats, low-fat fish, low-fat milk and cheese products, as well as up to a maximum of 40% dry matter. The fat content should be no more than 30% of the total energy intake (60 g/day). The lipid qualities are divided into <10% saturated fats (animal fats, coconut oil, hydrogenated fats), <10% polyunsaturated fats (diet margarine, safflower oil, corn oil, sunflower oil), and >10% mono-unsaturated fats (olive oil, canola oil, peanut oil, almonds).

The third stage is an extremely hypocaloric (very low-calorie) diet of <800 kcal/day if a rapid and significant weight loss is necessary. Formula diets comprising commercially produced instant products in powdered form with different flavors, minerals, and vitamins are well studied and widely disseminated. According to dietary regulation, they contain 50 g protein, 45 g carbohydrates, and 7 g fat.⁵ They serve as a complete or partial meal replacement for a maximum of 12 weeks.^{11,14} A popular form of low-fat diet in Germany is the *Brigitte Diet*. This is a recipe-based weight management program designed by one of Germany's most popular women's magazines of the same name. It provides recipes and shopping lists for every meal, thus requiring participants to simply follow the provided meal plans.¹⁵ This low-fat mixed diet rich in fruit and vegetables is carried out over 2–4 weeks. Its focus is not on the total amount of calories but the daily amount of fat, which is only about 30 g. The daily schedules are designed for five meals. The food selection is very enjoyable, as are the shopping lists, flavorful recipes, and various lists to exchange recommendations for long-term eating habits and sports activities.¹⁶

*Low-carb diet (Atkins diet).*¹⁷ This low-carb diet includes four phases with different amounts and types of carbohydrate, and is to be carried out for life. It is an extreme protein and fat diet without any specific recommendations, but with significantly increased purine and cholesterol, lack of vitamins and minerals (and a recommendation for dietary supplements!). Studies of weight reduction (6 months) initially show positive effects in the medium term but no benefits compared to a low fat diet. It is a very one-sided diet, as some foods such as bread, cereals, pasta, and potatoes are strictly prohibited.

*Glyx diet.*¹⁷ Food selection is based on glycemic index, preferably slowly absorbable carbohydrates with lower postprandial blood glucose and insulin levels. Regarding the blood-sugar effect, the glycemic load is more appropriate (glycemic load = glycemic index × carbohydrate grams of the food: 100).¹⁸ This diet is developed from the LOGI-Method of Professor Worm.¹⁹ It combines the glycemic load with the advantages of a protein-rich diet.

*Montignac method.*¹⁷ Carbohydrates are “good” or “bad,” according to their glycemic index (GI). By avoiding carbohydrates with a high GI (sugar, white bread, potatoes), carbohydrates with a low GI (whole grains, vegetables, fruit) can be combined with high-fat foods. The protein content of this diet is significantly higher than the official recommendations of the German Society for Nutrition (DGE), making it less suitable as a permanent diet. Individual variations and interactions of food components in composite meals are not considered. Movement as an integral part is missing in this approach.

*Hay and insulin food combining.*¹⁷ Here, the basic principle is the separation of carbohydrate and protein-rich foods within a meal. Plenty of raw food and less processed food is recommended, made up of 75–80% base-building (vegetables, salads, fruits) and 20–25% acid-forming food (meat, fish, eggs, cheese, bread), along with moderate amounts of polyunsaturated butter, cream, cold-pressed vegetable oils, few hot spices, salt, alcohol, and coffee. Hydrogenated fats, additives, and highly processed foods are avoided. The weight-reducing effect is due to the high fiber content, high saturation effect, and the effect on blood sugar and insulin levels in particular. Positive effects on overweight and obesity were found in non-controlled studies. A permanent, adequate supply of all essential nutrients is possible.

*Mediterranean cuisine, known as Mediterranean or Cretan diet.*¹⁷ This diet does not match the everyday diet in these countries. Rather, it is a special selection of foods such as vegetables, salad, fruit, fish, garlic, olive oil, and red wine, which are regularly consumed in the Mediterranean. In principle, it is a balanced diet, but without adequate caloric restriction, it results in no loss of weight. Currently, there is no scientific evidence of a causal relationship between the Mediterranean diet and a lower incidence of certain diseases such as obesity and cardiovascular disease.

TABLE 3. PRACTICAL TIPS FOR PATIENTS PREPARING MEALS IN THE KITCHEN

Recommended:

Steaming, stewing, shallow frying, in foil, using the Roman pot roast, skimming off fat.

Salad dressing: vinegar, herbs, mustard, yogurt, sour cream.

Other sauces: tomatoes, horseradish, curry, mustard, herbs, pureed vegetables, bouillon.

Not recommended:

Deep-frying, breading, inserting food into oil.

Salad dressings: mayonnaise, oil, cream, crème fraiche, ready-made sauces and dressings.

Other essences: oil, cream, crème fraiche, béchamel, roux, sauces, full-fat sour cream, mayonnaise, alcohol.

*Whole food nutrition.*²⁰ This is the concept of Koerber, Männle, and Leitzmann based on scientific research results, taking into account individual preferences and compatibilities as well as environmental, social, and economic aspects. There are no prohibitions or commandments. The principles include: an enjoyable and wholesome preference for plant foods (mainly a lacto vegetable diet); low preference for processed foods; plenty of fresh food, organic food, local, and seasonal products, environmentally friendly packaged products, and Fairtrade food. In the Giessen Wholesome Nutrition Study,²¹ whole food practitioners were compared to the control group with an average mixed diet. The triglyceride levels and BMI values for the whole food practitioners were almost exclusively in the normal range. Whole food offers a high preventive potential, and the recommendations are suitable to implement as a permanent diet. Some practical tips for patients preparing meals in the kitchen can be found in Table 3.

PRINCIPLES OF CHINESE NUTRITION

In *Spleen Qi Deficiency (Pi Qi Xu) with Phlegm-Damp-Blockage*, neutral and warm foods with a sweet and bitter taste preference are used. Cool and cold food and acidic and overly sweetened foods should be avoided. The absorbed fluid intake should also only correspond to the actual feeling of thirst. In case of *Spleen and Kidney Yang Deficiency (Pi Yang Xu, Yang Xu Shen)*, food with a predominantly neutral, warm, and hot temperature should be selected. In terms of flavor, natural sweetness and slight saltiness is recommended. Cold food and drinks should be avoided. A strictly vegetarian or vegan diet impairs this disharmony pattern. The dietary principle in *Liver Qi Stagnation with Spleen Qi Deficiency (Gan Qi Fan Pi)* is based on foods with a neutral and/or cold temperature, and sweet, slightly sour, or sharp flavor. Cold and cool-acid food and drink should be avoided. For obesity due to *Liver Qi Stagnation with Phlegm-Fire in the Stomach (Gan Qi Fan Wei)*, cool

TABLE 4. PRACTICAL TIPS FOR COUNSELING IN CHINESE NUTRITION FOR DIFFERENT SYNDROME PATTERNS

Spleen Qi Deficiency with Phlegm-Dampness Blockage:

Vegetables (peas, beans, lentils) and fish eliminate dampness and phlegm very well.

Dampness-transforming bitter substances: plenty contained in chicory, artichoke, endive, grapefruit, radicchio, sprouts, rucola, rosemary, saffron, sage, marjoram, thyme, juniper berries, cardamom, coriander, and tea of corn hair.²²

Spleen and Kidney Yang Deficiency:

Nuts, seeds, dried fruits, dark meat as well as master and power soups, cereals, and vegetable base with warming spices are perfect.

Liver Qi Stagnation with Spleen Qi Deficiency:

Recommended cooking methods are stewing, steaming, blanching, and cooking. Regular meals in a relaxed, quiet atmosphere are important.

Liver Qi Stagnation with Phlegm-Fire in the Stomach:

Tomatoes (cold, sweet and sour) are cooling and their juice can be used as a salad, drink, and to make soup. Adzuki beans transform dampness and eliminate heat and phlegm as well.²³

and cold foods are needed with a sweet and slightly sour or bitter taste to clarify the digestive fire. Warm to hot food and drinks such as coffee, alcohol, and spices should be avoided.⁸ The main tips for counseling in Chinese nutrition for different syndrome patterns are summarized in Table 4. A special recipe for the obese patient with Spleen Qi/Yang Deficiency and Phlegm-Damp-Blockage is oriental spice rice (see detailed instructions in Table 5).

DISCUSSION

Unfortunately, there are no clinical studies and data on the effectiveness of acupuncture and integrated combined East–West nutritional treatment for overweight or obese. All references relate to experience or case reports. The author himself can perform no scientific studies at his private practice. However, from the many years of practical experience, the following data were noticed and can serve for discussion. A combined treatment of acupuncture and dietary management can reduce body weight by 15–20%. If the treatment plan includes regular physical activity (e.g. 60–90 minutes, two to three times a week, of swimming, cycling, or running), about a further 5–10% weight loss is possible. The average weight loss is initially 2 to 2.5 kg per month, then about 1 to 1.5 kg per month. The treatment period must be based on the initial weight, and is usually between 6 months and 1 year. Acupuncture is performed initially for 6–8 weeks and is repeated after a 6–8-week break. If the initial BMI is >35, the decrease in body weight will be slower and the total treatment period must be extended accordingly. The intervals for individual nutritional consultations are weekly to begin with and are gradually extended

TABLE 5. RECIPE FOR OBESE PATIENT WITH SPLEEN QI/YANG DEFICIENCY AND PHLEGM-DAMP-BLOCKAGE

*Oriental spiced rice**Ingredients:*

200 g long grain rice	(E, M)
1/2 liter hot vegetable stock	(Wa)
50 g butter	(E)
2 star anise	(Wo, F, E, Wa)
1 large cinnamon stick	(Wo, E, M, Wa)
4 tbsp olive oil	(Wo)
1/2 dried chilli pepper (without seeds)	(F, E, M)
2 tsp fennel seeds	(E)
2 tsp coriander	(E, M)
5 cardamom pods	(E, M)

Preparation:

Coarsely pound the coriander, fennel seed, chilli pepper, and cardamom seeds in a pestle and mortar. Heat olive oil in a pan, season with the cinnamon stick and star anise, and fry the crushed seeds briefly over a medium heat. Add the rice, and fry briefly. Pour over the hot vegetable stock, bring it to the boil, and then simmer on a low to medium heat for approximately 20–25 minutes. At the end of the cooking time, melt the butter into the rice. The spiced rice goes well with steamed fish with lamb's lettuce and radicchio.

Effect from the perspective of Chinese nutrition:

The oriental spiced rice strengthens the Qi of the Spleen and Stomach, disperses Cold, eliminates Damp and Phlegm, and stimulates digestion. Its effect is improved by serving it with fish and bitter salads. The spiced rice provides plenty of essential oils that stimulate the appetite and support the digestive and excretory organs.

E, earth; M, metal; Wa, water; Wo, wood; F, fire.

as needed on a 2–3 weekly basis. Additional psychotherapeutic individual sessions should be available on request. These occur as necessary every 4–6 weeks. Blood values will indicate reduced cholesterol and LDL cholesterol by about 10% after at least 3–4 months. The decreased blood lipids reach a maximum of 20% of their initial values. For uric acid concentration, a reduction by about 10% can be observed. However, to secure and extend the author's positive experience, it is necessary and desirable to carry out clinical studies on this combined treatment approach.

CONCLUSIONS

The increasing incidence of obesity and its complications requires a rethink of the current medical treatment strategy. It is proposed that, in the future, proven modern Western therapies should include the experiences and knowledge of TCM. In addition to medical acupuncture, an integrative East–West nutrition concept plays a crucial role. With 20 years' experience, the author has assessed this combined treatment of acupuncture, Western diet, and Chinese nutrition as particularly effective. Integrating an individual nu-

tritional program into the overall concept increases the motivation of the obese person and improves medical success.

DISCLOSURE STATEMENT

No competing financial interests exist.

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