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## Health Management Guidebook

We pay attention to your body health

Whether you are ready to join us together for weight management

After you read this guide book, you'll have a clear picture of health secret!

oserio®

Health conscious • Professional • Innovative

# Health Management Guidebook

# \_Contents

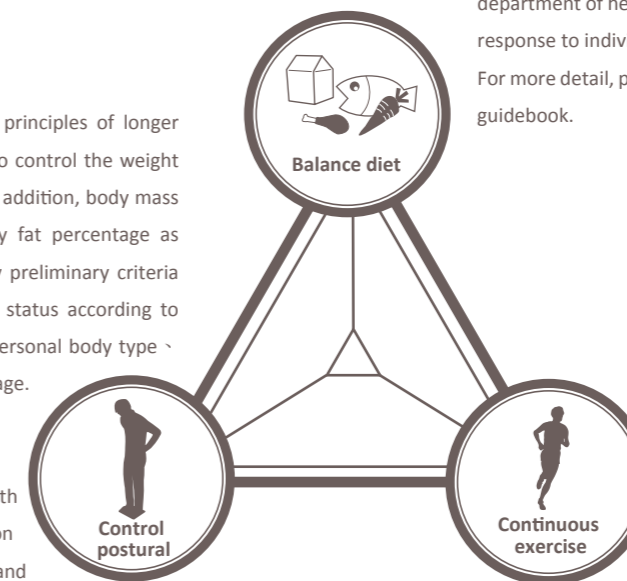
<b>1. Health golden triangle</b>	<b>1</b>	<b>10. Standard posture – ideal body weight</b>	<b>10</b>
<b>2. Weight and body secret BMI</b>	<b>2</b>	<b>11. Obesity health crisis</b>	<b>11</b>
<b>3. Body fat percentage</b>	<b>3</b>	<b>12. Balanced diet, health five steps</b>	<b>12</b>
<b>4. Visceral fat</b>	<b>4</b>	<b>13. Balanced diet recommended</b>	<b>13</b>
<b>5. Basal metabolic rate</b>	<b>5</b>	<b>14. Food nutrients and calorie content table</b>	<b>14</b>
<b>6. Body water</b>	<b>6</b>	<b>15. Harmful effects of rapid weight losing</b>	<b>16</b>
<b>7. Subcutaneous fat</b>	<b>7</b>	<b>16. Most effective weight loss secret</b>	<b>18</b>
<b>8. Bone mass</b>	<b>8</b>		
<b>9. Body age</b>	<b>9</b>		

## 1. Health golden triangle

### 1. Balance diet

Food is an important element to maintain body energy, a balanced intake of different types of nutrients in order to respond to the requirement of the functioning organs, recommended by the department of health Plum daily dietary as a reference diet, and in response to individual physical condition can be freely adjusted.

For more detail, please refer to page 12 of the health management guidebook.



### 3. Control postural

Healthy body is the principles of longer life and health and to control the weight in the ideal range. In addition, body mass index(BMI) and body fat percentage as objective or auxiliary preliminary criteria for individual health status according to the concept of the personal body type \ height \ weight and age.

These preliminary references can be as personal normal health management direction provided by doctors and nutrition experts.

### 2. Continuous exercise

“Exercise 333” is promoted by department of physical education, its content daily exercise for more than 30 minutes, more than 3 times per week, each exercise of the heart rate more than 130 bpm. Which focus on a sustained exercise to maintain the body energy and help to metabolize to achieve the purpose of health body.

## 2. Weight and body secret BMI

“Weight” means the sum of all organs of the body weight. Changes in body weight will directly reflect the state of the body long term calories balance. Weight gain will be change in body tissue due to the different physiological characteristics. For example, during growing period the weight growth as the body cells increases, in adult, weight gain mainly due to the body adipose tissue and body fat increase.

“Healthy weight” is to control the weight in ideal range, not too light, no too heavy. Nutrition ideal weight principle is to keep healthy body and longer life. Body mass index(BMI) is a measurement method in accordance with the concept of each personal body type, height and weight are different. Ideal weight range as a BMI is between 18.5~25, healthy BMI is 22, overweight BMI is <25, over 30 were obese, over 35 were extreme obesity.

Various reports indicate that the risk factors for obesity related diseases increase as BMI over 25. In Taiwan the metabolic syndrome risk significantly increased when BMI over 24. Excessive BMI will increase the risk of cause hypertension, cardiovascular disease, arthritis, diabetes, female infertility.



### Calculate BMI

BMI (body mass index) = weight (kg) / height<sup>2</sup> (m<sup>2</sup>)

*The obesity standard published by WHO*

	DOH obesity standards
Obesity	BMI ≥ 30
Over weight	BMI 25.0-29.9
Ideal	BMI 18.5-24.9



Reference: World Health Organization

## 3. Body fat percentage

Body fat percentage is the percentage of body fat and weight, but not absolute related between body fat and weight, if someone is very light weight and look thin, but high body fat, he/she will have significant health crisis risk.

In general, the normal human body has about 1/4 of body fat, some people may be surprised there is about 15 kg of fat if the body weight is 60kg, body fat not only stored body energy, the right amount of fat also can protect vulnerable organs of human body. So the fat still be necessary in the presence of the human body, too much or too little are harmful to the body. To determine the obesity level, BMI is one of the reference but also need to measure the percentage of body fat, so that the result will be more objective.

✧ *Body fat percentage criteria table*

Gender	Age	Low	Normal	High	V.High
 Male	10~33	5.0%~8.5%	8.6%~19.3%	19.4%~25.0%	25.1%~50.0%
	34~49	5.0%~11.7%	11.8%~22.5%	22.6%~27.6%	27.7%~50.0%
	50~80	5.0%~13.7%	13.8%~24.5%	24.6%~30.2%	30.3%~50.0%
 Female	10~33	5.0%~20.8%	20.9%~32.5%	32.6%~38.2%	38.3%~50.0%
	34~49	5.0%~23.4%	23.5%~35.1%	35.2%~40.8%	40.9%~50.0%
	50~80	5.0%~24.4%	24.5%~36.1%	36.2%~41.8%	41.9%~50.0%

Based on WHO Body Mass Index Classification(1995~2004)

Based on Hoeger WWK & Hoeger SA (1994). Principles & Labs for Physical Fitness and wellness. Morton Publishing Company.

To determine the percentage of body fat that is appropriate for you body, consult your physician.

#### 4. Visceral fat

There is a strong correlation between the percentage of body fat and the amount of visceral fat, the risk of suffering from diabetes, hypertension, hyperlipidemia, coronary atherosclerotic heart disease and other chronic diseases. To accurately measure body fat percentage is difficult, therefore bio-impedance analysis for body composition measurements exists. It's easy, safe, fast, non-invasive, and has been widely used by clinical and institute.

Visceral fat measurement principle for abdominal fat area measured by computer tomography device for human lumbar between L4-L5 section.

**Visceral fat level and criteria**

Level	Criteria
1~3	Normal
4~6	High
7~9	V.High

Visceral fat level and criteria are according to bio impedance measurement of clinical research and analysis for percentage of body fat and abdominal visceral fat study conducted by Oserio Research Centre, applies only to the Oserio body fat monitors.

**Reference:**

- 1.Rukiyoshi Okauchi, etc., Reduction of visceral fat is associated with decrease in the number of metabolic risk factors in Japanese men, Diabetes care, Vol. 30, No. 9, pp.2392-2394, 2007.
- 2.Barbara J. Nicklas, etc., Visceral adipose tissue cutoffs associated with metabolic risk factors for coronary heart disease in women, Diabetes cae, Vol.26, No. 5, pp.1413-1420, 2003.
- 3.Oka R, etc., Reassessment of the cutoff values of waist circumference and visceral fat area for identifying Japanese subjects at risk for the metabolic syndrome, Diabetes research and clinical practice , 2008;79 :474-481.

#### 5. Human basal metabolic rate

There are three major parts of human body energy consumption, first part, basal metabolism is about 65~70% of the total calories consumed. The second part, physical activity is about 15~30% , last part, thermic effect of food(digesting) is about 10% of the total calories consumed. Basal metabolic consumption of calories is to maintain the basic necessities of human organs functioning energy, even in sleep the human metabolism is still 24 hours continuing to consume lots of energy. But human basal metabolisms will gradual downward as age getting older, in general, in infancy age metabolic rate is highest. In child age metabolic rate rapid decline. Until adult age it gradually stabilize. After understand correctly about human basal metabolism, we can accord this value and the daily work to estimate the calories consumed in one day, and according the daily consumption to determine the daily food intake. If our daily food intake is more than consumption of calories, the excess calories will be stored as fat, so we must burn unnecessary calories to achieve the maintenance of posture and weight loss with some exercises.



**Calories calculation:**

Daily calories requirement = existing body weight(kg) x calories requirement(kcal/kg)

Weight losing daily calories requirement = existing body weight (kg) x calories requirement(kcal/kg) – 500 kcal

**Calories requirement according to different work classification**

Class of work	Work content	Calories requirement (kcal/kg)	
		Female	Male
Leisurely work	Housework or desk worker	30 kcal	40 kcal
Moderate work	Frequently move around but not heavy	35 kcal	45 kcal
Severe work	Handling heavy work	40 kcal	50 kcal

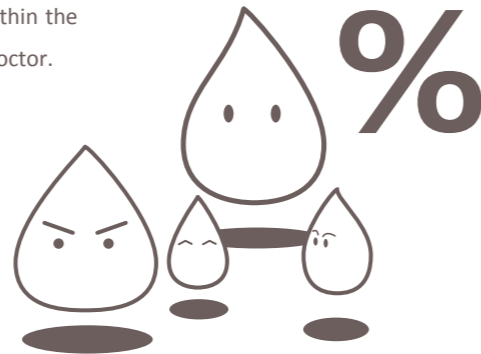
Reference: Department of Health

### 6. Body water

It's the estimation of body intracellular fluid and extracellular fluid under normal conditions, the weight change of the intracellular and extracellular fluid will not be much.

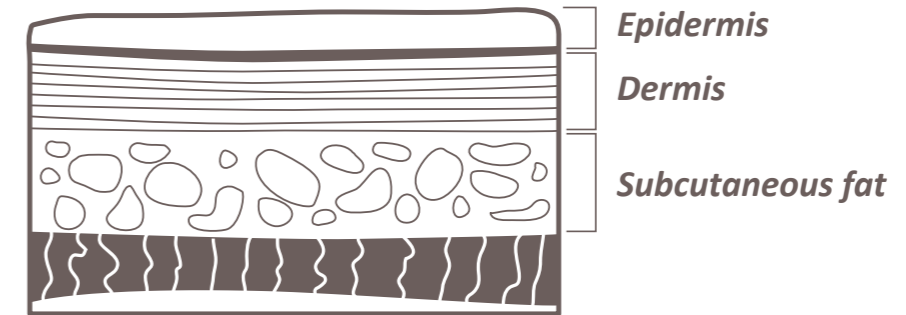
60% to 70% of the human body consists of water, affecting the bodily functions. Almost all chemical effects have to rely on water to complete the digestive secretion of digestive enzymes that break down carbohydrates, protein. Body waste also needs to be excreted with water. Human can survive 10 days without food. But without water, we can hardly survive 3 days. That shows how important water affect to our body.

If the body water result changes too much, it means the body cells within the body may have variability, require special attention, carefully checked by doctor.



### 7. Subcutaneous fat

Subcutaneous fat is the fat beneath the skin. Everyone need subcutaneous fat to store energy to maintain body temperature. It accumulates in the abdomen, buttocks, upper arm, thigh ...etc., too much or uneven subcutaneous fat will cause the body deformation. Subcutaneous fat located below the epidermis and dermis. It can keep warm and reduce injuries and store energy.

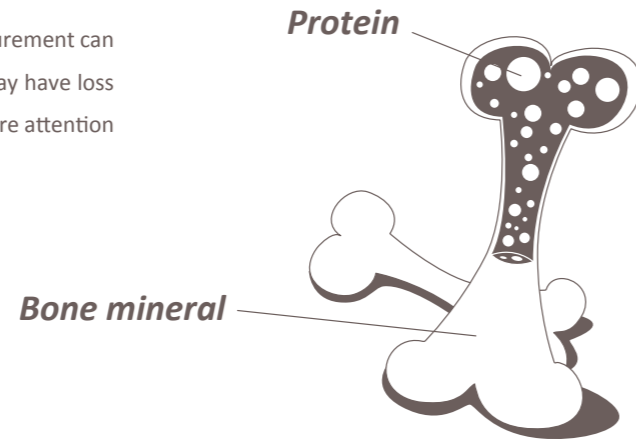


### 8. Bone mass

Bone mass is the amount of bone mineral in the human, and the amount of bone mineral is the basis of human bone density. Normal person bone mineral baseline is about 2~3kg, amount of bone mineral can also estimate the bone density is normal or osteoporosis.

The bone is made by bone mineral attached on the fiber protein. Take the building as an example, protein is like steel, bone mineral is cement. Osteoporosis is like the building steel become thinner and cement with hole spilling.

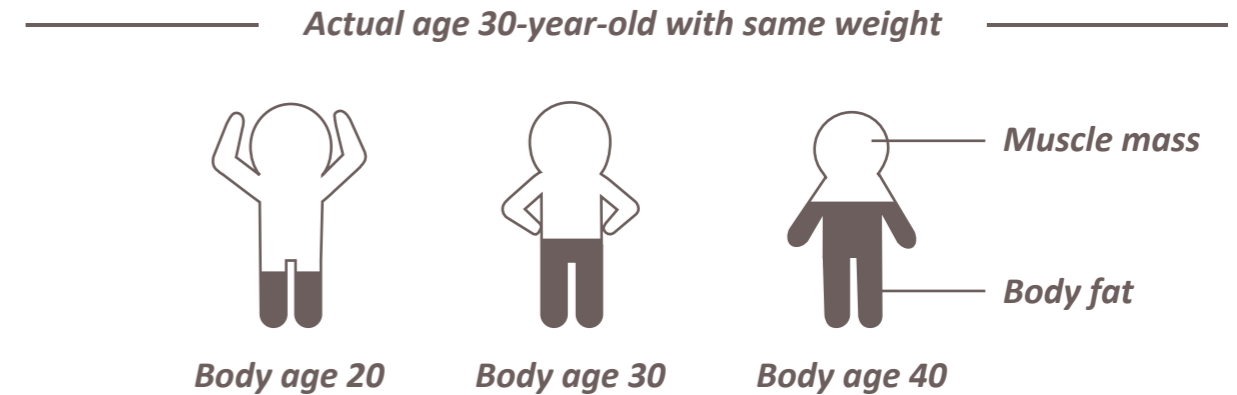
Through the amount of bone mineral measurement can then estimate the bone density. Bone mass may have loss when the weight decrease, we need to pay more attention to prevention steadily losing.



### 9. Body age

Body age is based on the estimation of the basal metabolic rate, and considering the human body composition and levels of obesity standard by WHO(World Health Organization), and used to determine the differences with the actual age of the user.

For example, the higher level of muscle in the human body composition means higher basal metabolism, it renders the body age compared to actual age would be younger; conversely, higher body fat composition, the body age compared to actual age would be older.



### 10. Standard posture – ideal body weight

In order to accurately control the changes in health and maintain the standard posture, in addition to measurement of body weight, we need to refer to the body fat percentage and BMI value.

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## Is your body posture standard?

?

Standard weight:

**Men** (kg) = [height (cm) – 80] x0.7                      **Women** (kg) = [height (cm) – 70] x0.6

Ideal weight = ±10% standard weight

**Overweight:** actual weight is over the ideal weight by 10% ; **obesity:** over the ideal weight by 20%

- 1) The sudden or unexplained weight loss is greater than 10% or more, usually shows a lack of calories or health problems, such as diabetes.
- 2) If the short-term, rapid weight drop indicated the seriousness malnutrition, large amount of body muscles and liquid loss, but less body fat decline.

**Easy to determine obesity table**

	BMI	Waist	Waist-to-hip ratio (WHR = waist / hip)
Male	Thin 18.5 > BMI Normal 18.5 ≤ BMI ≤ 23.9 excess 24.0 ≤ BMI ≤ 26.9	Obese ≥ 90cm	Obese WHR ≥ 0.9
Female	Mildly obese 27.0 ≤ BMI ≤ 29.9 Moderately obese 30.0 ≤ BMI ≤ 34.9 Severely obese 35.0 ≤ BMI	Obese ≥ 80cm	Obese WHR ≥ 0.85

*Reference: Department of Health*

### 11. Obesity health crisis

**Obesity is a serious threat to the health of chronic disease!!**

The definition of obesity is the excessive accumulation of fat in the body, causing health problems. 1996 world health organization (WHO) and US food and drug administration (FDA) indicate that obesity as chronic diseases, and serious threat to global human health than infectious diseases.

- ↙

## Potential risk of obesity
- The ten leading causes of death in Taiwan(2009), respectively as follows:
- First:** Cancer
  - Second:** Heart disease
  - Third:** Cerebrovascular disease
  - Fifth:** Diabetes
  - Eighth:** Chronic liver disease and cirrhosis
  - Tenth:** Nephropathy

**60% of The Leading Ten death disease is caused by OBESITY**

Severely obese	Moderately obese	Mildly obese
<ul style="list-style-type: none"> <li>• Diabetes</li> <li>• Sleep apnea</li> <li>• Hyperlipidemia</li> <li>• Shortness of breath</li> <li>• Excessive sleep disorder</li> </ul>	<ul style="list-style-type: none"> <li>• Premature aging dead</li> <li>• Hypertension</li> <li>• Myocardial infarction</li> <li>• Stroke</li> <li>• Gallstones</li> <li>• Endometrial cancer</li> <li>• Gallbladder</li> <li>• Polycystic ovaries syndrome</li> <li>• Degenerative arthritis</li> <li>• Gout</li> </ul>	<ul style="list-style-type: none"> <li>• Prostate cancer</li> <li>• Breast cancer</li> <li>• Male colorectal cancer</li> <li>• Infertility</li> <li>• Fetal malformations</li> <li>• Asthma</li> <li>• Gastroesophageal reflux disease</li> </ul>

*Reference: Comprehensive Weight Management Center of TMUH*








### 12. Balanced diet, health five steps

Steps	Contents
<b>Step 1</b> Maintain ideal weight	Underweight causes lower immunity, overweight causes many chronic diseases, such as diabetes, hypertension and cardiovascular disease, so maintain ideal weight is the base of a healthy body.
<b>Step 2</b> Don't be a picky eater	Six major food categories balance intake of vegetables, fruits, grains, milk, eggs, beans, fish and fat, eat high fiber content and high water content of food.
<b>Step 3</b> Mainly grain food	Rice, noodle and other grain foods not only provide calories, but contain many essential nutrients.
<b>Step 4</b> Three more three less diet principles	Comply with three more (eat more fruits and vegetables, drink more milk, drink more water) three less( less oil, less salt, less sugar) principles keeps away osteoporosis, cardiovascular disease and other chronic diseases.
<b>Step 5</b> Refrain from drinking	Excessive drinking can affect the nutrients being absorbed, easily lead to malnutrition and liver disease. It will also influence the thinking ability to judge, and cause an accident.

Reference: Department of Health

### 13. Balanced diet recommended

Balanced diet recommended amount for adults

<b>Grains and starchy vegetables</b>		Rice, noodles, potatoes and other main foods are the main supply of carbohydrates and some protein. They are the source to supply physical energy. Eat daily 3-6 bowls in average.
<b>Eggs, beans, fishes</b>		Eggs, beans, fishes, tofu, dried tofu and soymilk are rich in protein, increasing metabolism and endurance. 4 items daily; each item is selectable: 30g of meat or fish or 100g tofu; 240cc soymilk or 1 egg.
<b>Fruits and vegetables</b>		The variety of vegetables supply vitamins, minerals and fiber. Dark colour vegetables, such as spinach, cabbage, carrots and pumpkins are contained more vitamins and minerals than lighter coloured vegetables. The fruits provides vitamins, minerals and fiber. For example oranges, papaya, guava, pineapple and banana increase endurance, and smooth stomach. Eat daily 2-3 fruit, 200-300g vegetables.
<b>Milk</b>		Milk, fermented milk, cheese and other milk products contain rich protein, calcium, phosphorus and vitamin B2; good for maintaining teeth and bones healthy. Eat 1-2 cup daily, 1 cheese per day.
<b>Fat</b>		Cooking oils, peanuts, cashews and other nuts can provide the fat daily need. Eat 2-3 tablespoons daily.



Note

1. Choices of each type of food should always change, no picky eating, no over amount.
2. Teenagers, elders, pregnant women are special physiological conditions, the diet must have some changes:
  - \*Teenagers: increase the intake of the grains, meats, fish, beans, eggs and milk, preferably daily add an egg or a glass of milk.
  - \*Elders: moderate reduction in the intake of grains.
  - \*Pregnant women: five categories of food should be increased to a certain extent; it's better if daily add 1-2 glass of milk.
3. High price of food does not mean high nutritional, make the best choice of locally produced fresh cheap food.

Reference: Department of Health

14. Food nutrients and calorie content table

Calories and nutrients comparison per 100g of food content

Foods	Grain and starchy vegetables	Soft drink	Hind lean	Fish	Egg	Whole milk	Pork liver	Tofu	Dark green, red, yellow vegetables	Light green vegetables	Dark yellow fruits	Citrus fruit	Apple
Calories	Rich	Moderate	Moderate	Moderate	Rich	Moderate	Rich	Moderate	Trace	Trace	Little	Little	Little
Protein	Little	None	Rich	Rich	Rich	Little	Rich	Moderate	Trace	Trace	Trace	Trace	Trace
Fat	Trace	None	Moderate	Rich	Rich	Rich	Moderate	Rich	Trace	Trace	Trace	Trace	Trace
Calcium	Trace	None	Trace	Little	Rich	Rich	Trace	Rich	Rich	Rich	Moderate	Moderate	Little
Iron	Trace	Trace	Little	Trace	Little	Trace	Rich	Moderate	Little	Trace	Trace	Trace	Trace
Vitamin A	None	None	Trace	Trace	Moderate	Little	Rich	Trace	Rich	Little	Rich	Rich	Trace
Vitamin B complex	Little	None	Moderate	Little	Moderate	Little	Rich	Little	Trace	Trace	Moderate	Moderate	Moderate
Vitamin C	Trace	None	Trace	None	None	None	Rich	None	Moderate	Moderate	Rich	Rich	Little

Figure: Very rich Rich Moderate Little Trace None

Reference: Department of Health

The nutritional value of food depending on the types and amount of nutrients contained in the food. Most of food are not only contain one type of nutrient, while there are differences in the amount of nutrients in different foods. The following chart provides a simple nutrient content comparison to let everyone have a clear picture of the nutritional content of food.

## 15. Harmful effects of rapid weight losing

Beauty is the nature of women, in addition to beauty, there are many people lose weight for their health, but it may be cause healthy problems instead if they use improper way to lose weight. The proper rate of weight losing is 0.5~1kg a week, when the weight begins to lose rapidly the body will become unhealthy. We provide six symptoms of rapid weight losing as follows:

### ◎ *Yo-yo syndrome*

Generally rapid weight losing can make people lose 5-10kg in a short time, but very easy to regain the weight even more weight than before. And then people can hardly lose weight to ideal weight. We can see our weight losing in early stage of short period of excessive weight losing, which is losing body water, followed by muscle, then fat. But when the weight regains it'll form as fat and store back to the body. It will be much difficult to lose weight time after time, creating a vicious cycle, and the amount of body fat is also rising.

### ◎ *Metabolic rate decrease*

Rapid weight losing can cause metabolic rate decrease and it's also a factor of weight regain easily. Generally people who lose weight rapidly are not consuming sufficient amount of calories. They slim down the weight in the short period of time by eating diet food instead of regular food. After reaching target weight, they resume eating regular food, even though they still pay attention to caloric intake, they still gain weight dramatically because of metabolic rate has been decreased. The metabolic rate provides the body's physiological functioning, supply life-sustaining phenomenon needs (for example: heartbeat, respiratory, gastrointestinal motility, etc.), when calorie intake is less than basic needs of human body, the human body in order to maintain normal physiological functioning will adjust metabolic rate to reduce the body basic calorie consumption. Then once the body resume normal caloric intake, the body would be taking excessive calories for the lower metabolic rate.

### ◎ *Weakened immunity*

Mostly rapid weight losing people take lower calories than usual and cause nutritional imbalance or inadequate nutrient. At the same time, muscle protein degradation causes physical decline, and lymphocyte reduces production will generate resistance weakened and more easy to catch flus and back pain.

### ◎ *Irregular menstruation*

The rapid decline in body weight within a short time, the most obvious body warning indicator is the menstrual cycle for women. In the case of body weight drops, most common cause is irregular menstrual cycles, and maybe even causes no menstruation. They are all because of improper weight losing. The hormonal metabolic effects induce menopause or menstrual chaotic situation.

### ◎ *Easy to lose hair, skin condition goes bad*

Most rapid weight losing people are taking inadequate nutrient, and that causes body metabolism abnormal. Some serious cases cause hair loss, brown hair, dry hair. And bad skin condition can also occur due to nutrient deficiency or abnormal hormone metabolism, which causes skin deterioration, rough, prone to acne and other circumstances.

### ◎ *Organ dysfunction*

In the case of chronic hunger due to the inadequate calories and nutrient intake, and large amount of body water loss, muscle protein degradation, could easy cause temporary liver and kidney dysfunction. And because of repeating weight losing and regaining, metabolic rate decrease affects gastrointestinal function prone to indigestion or stomach diseases and other adverse consequences.

*Reference: Department of Health*

## 16. Most effective weight loss secret

For overweight and even obese people, weight loss is a way responsible for their own health. But if someone chooses improper way to lose weight, the body would be adverse effected. The best way is to follow suggestions recommended by doctors and nutritionists, using correct methods for weight loss, based on balanced nutritional diet, and to change the eating habits with appropriate exercise. Then to have a slim and healthy body will not be far away.

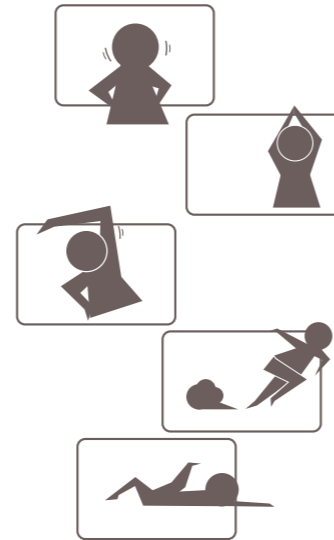
⊙ ***Through aerobic exercise to improve cardiorespiratory endurance, and lose excess fat:***

Aerobic exercises enhance the body on oxygen and fat burning. Brisk walking, jogging, cycling, swimming, dancing, playing ball are all good aerobic exercises. The frequency of doing this kind of exercise is at least 3 times a week, at least 20 minutes each time.

⊙ ***Do some muscular strength enhancing anaerobic exercises:***

Anaerobic exercises are to enhance muscular strength with the tension. When doing exercise, the consumption is muscle glycogen and increases metabolic rate in the body. Sit-ups, push-ups, weight training, gym strength training, etc. are anaerobic exercises, the frequency is at least 2 times a week, at least 1-3 round each time.

⊙ ***Heart rate should reach more than 60% of maximum heart rate when doing exercise, sweat but not breathless.***



Reference: Department of Health