



## Technical University Dresden Medical Faculty

### Eating and drinking for surgical-prosthetic patients

After surgical-prosthetic treatment, many patients cannot eat and drink in their usual way. Among other things they may suffer from chewing and swallowing disorders, which can be accompanied by loss of appetite and taste blindness.

Eating and drinking considerably contribute to well-being and health.

A wholesome diet should therefore be followed. It provides the body with everything it needs: sufficient energy, proteins, essential fatty acids, dietary fibres, essential vitamins and minerals as well as secondary phytochemicals, which have recently been recognised as important. Balanced dietetic behaviour can help to avoid food-dependent health disorders and the disease process can be positively influenced.

### The DGE (German Nutrition Society) food circle – checklist for every day

The DGE food circle offers a simple and fast orientation for a health aware food selection. The food displayed in it represents a variety of foodstuffs in the corresponding group. The size of the segment indicates the ratio of the individual food groups. Your daily menu is balanced if you choose your food from each of the groups daily at the ratio indicated.



## **The 10 guidelines of the German Nutrition Society (DGE)**

A wholesome diet keeps you in good health and improves performance and well-being. The German Nutrition Society has compiled 10 dietary guidelines based on the most recent scientific knowledge to help you to eat with relish and preserve your health.

### **1. Versatile eating habits**

Enjoy the diversity of foods available. Characteristics of a well balanced diet are variable choice, an appropriate combination and adequate quantities of high-nutrient and low-energy food.

### **2. Ample cereal products and potatoes.**

Bread, pasta, rice, grain flakes, preferably whole grain, as well as potatoes contain hardly any fat but plenty of vitamins, minerals, micronutrients as well as dietary fibre and phytochemicals. Consume these foods preferably with low-fat ingredients.

### **3. Fruit and vegetables – take “5” A day**

Enjoy 5 portions of fruit and vegetables daily, as fresh as possible, and cook for a short time only, or take one serving as a juice – ideally with each main meal and also as a snack between the meals. You profit by consuming plenty of vitamins, minerals, dietary fibre and phytochemicals (e.g. carotenoids, flavonoids), which are optimal for your health.

### **4. Milk and dairy products daily; fish once or twice a week; meat, sausage and eggs in moderation**

These foods contain valuable nutrients, e.g. calcium in milk, iodine, selenium and omega-3 fatty acids in saltwater fish. Benefit from meat because of its high contents of bio-available iron and vitamins B1, B6 and B12. However, 300 – 600 grams of meat and sausages per week are sufficient. Favour low-fat products, especially with meat and milk products.

### **5. Fat and fatty foods in moderation**

Fat provides essential fatty acids and foods containing fat also comprise fat-soluble vitamins. Fat is particularly high in energy, therefore too much dietary fat can promote overweight. Too many saturated fatty acids promote, in the long run, the development of cardiovascular diseases. Rather favour vegetable oils and fats (e.g. canola oil, soybean oil and margarines produced from them). Be aware of hidden fat found in several meat and dairy products, pastry, sweets, fast food and convenience products. Overall, 70 – 90 grams of fat daily is sufficient.

### **6. Sugar and salt in moderation**

Only occasionally consume sugar and food or beverages containing various kinds of sugar (e.g. glucose syrup). Be creative in flavouring with herbs and spices, but use little salt. Rather favour iodized table salt.

### **7. Plenty of fluid**

Water is a vital necessity. Drink about 1.5 litres fluid daily, preferably water - slightly carbonated or non-carbonated – and other beverages low in calories. Consume alcoholic drinks only occasionally and in small amounts.

### **8. Prepare tasty, carefully cooked dishes**

Cook food on low heat, if possible for a short time, using small amounts of water and fat – the natural taste is thus preserved, nutrients are conserved and the formation of harmful substances in food is avoided.

### **9. Take your time and enjoy eating**

Eating consciously helps one to eat properly. Prepare and serve dishes pleasing to the eye. Allow plenty of time for eating. It can be fun, as it encourages versatility in the choice of food and promotes the sense of satiation.

## **10. Watch your weight and stay active**

Combine a balanced diet with plenty of physical exercise and sport (30 to 60 minutes a day). An ideal weight will make you feel well and promote your health.

### **Eating with chewing and swallowing disorders**

Temporary or long lasting eating and/or swallowing disorders can occur after surgical-prosthetic treatments. The food consistency has to be adapted for these disorders. The variety of food should by no means be restricted in these cases. It is the components of a typical lunch (potatoes, vegetables, meat or fish) which supply the essential nutrients that cannot be replaced with other foods. If the food cannot be sufficiently insalivated appetizing flavours and scents do not develop sufficiently. Apart from medical-therapeutic reasons, dryness in the mouth can frequently be caused by the fact that the intake of fluid is too low. The recommendation of the DGE of a fluid intake of at least 1.5 litres a day should be followed. You should also drink plenty with each meal.

The adaption of food in the case of chewing disorders can be effected as follows:

- Meat is chopped or pureed
- Raw vegetables are grated
- Potatoes and soft vegetables can be mashed with a fork
- Hard food or parts are removed or omitted. Cut the crusts off bread.
- Porridge can be eaten for breakfast instead of bread
- Always puree the food individually so that the original food remains identifiable (e.g. by its colour: carrots -orange, potatoes- yellow, meat -brown)
- A great variety of food can also be served as soup and stew, pureed or slightly thickened

For swallowing disorders the following is recommended:

- Thickening powders (available in pharmacies) allow for beverages like coffee or juices to be swallowed easily free from worry
- Crumbly, fibrous or sticky food should be avoided
- Fruity sour food should be favoured.
- Puree or pass the food through a sieve.

### **Example of a drink plan for one day:**

1 glass of water after getting up  
2 cups of coffee or tea with breakfast  
2 glasses of diluted fruit juice in the morning  
1 glass of water or diluted apple juice with lunch  
1-2 cups of coffee or tea in the afternoon  
1 glass of water, tea or, if necessary, beer with dinner  
1 glass of water in the evening  
1 glass of water in the night

## Nutrition and weight

The body mass index (BMI) can be used to evaluate the body weight and to identify weight problems:

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{height}^2 \text{ (m}^2\text{)}}$$

*Example:* You weigh 60 kg and you are 1.60 m high:

$$\frac{60}{1,60 \times 1,60} = 23,4 \qquad \text{your BMI is 23,4.}$$

## Categorisation of under, normal and overweight by means of the BMI:

Category	BMI (kg/m <sup>2</sup> )
underweight	< 18,5
normal weight	18,5 – 24,9
overweight	≥ 25
preadiposity	25 – 25,9
obese class I	30 – 34,9
obese class II	35 – 39,9
obese class III	≥ 40

Severe obesity is a burden for the body and the cause of many diseases. To be underweight, which also occurs in patients with surgical-prosthetic treatments, is likewise dangerous. The risk of malnutrition is particularly high in patients who are underweight.

## Eating and drinking for the underweight

If you are underweight you should make sure that you eat plenty of food of high nutrient content and improve the energy content of your food if necessary with suitable fats.

Here are some examples:

- Eat plenty of vegetables e.g. in a stew or as a puree. Cream soups enriched by 2-3 tablespoons of crème fraîche are suitable, too.
- Provide for a share of proteins (meat, fish, eggs, dairy products) with each meal
- Milk-mix drinks enriched with fresh cream are a perfect snack between meals
- Use plenty of canola and olive oil to prepare your food. Refined canola oil is almost neutral in taste and can be used for frying and stewing. Cold pressed canola oil has a taste of nuts and is used for preparing uncooked food.
- Colourfully decorated bite-sized snacks are mouth-watering so that you want to eat more.
- Individual preferences and wishes should be considered.
- Many small attractively arranged meals are better than a few big meals.

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