

HOW AND WHY F&V PREVENT OVERWEIGHT AND OBESITY IN ADULTS

- ▶ Obesity is a complex, multifactorial, and largely preventable disease¹.
- ▶ Worldwide, **overweight and obesity have reached epidemic proportions**. The prevalence has nearly tripled since 1975. In 2016, more than **39 % of adults** aged 18 years and over were overweight, and **13 % were obese**². In Europe, **overweight affects 30-70 %** while **obesity affects 10-30 %** of adults³. In France, **17 % of adults** are concerned by obesity⁴.
- ▶ The main cause of overweight and obesity is a **long-term imbalance between energy intake and energy expenditure** leading to weight gain¹. In some cases, obesity can be a genetic disorder. However, in most cases, it arises from living in an obesogenic environment that encourages low levels of physical activity, extended sedentary behavior and plentiful consumption of food, especially those rich in energy⁵.
- ▶ Increased Body Mass Index (BMI)* is a **major risk factor for non-communicable diseases** such as cardiovascular diseases, diabetes, musculoskeletal disorders and some cancers including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney and colon^{1,2}.

1. Healthy diet and regular physical activity for overweight and obesity prevention

- Overweight and obesity, as well as their related non-communicable diseases, are **largely preventable** by:

- **limiting the consumption of high-energy-dense products** high in fat and sugar (e.g., sugar-sweetened beverages, processed foods);
- **increasing the consumption of fruit, vegetables, legumes, whole grains and nuts**;
- **engaging in regular physical activity** (150 minutes per week for adults)^{1,2}.

- Box 1 (see page 2) provides health professionals practical advices that can be given to the patient to prevent overweight and obesity.

2. Fruit and vegetable consumption for overweight and obesity prevention

- F&V consumption is recommended as part of a healthy diet⁸.

- **The WHO recommends to consume more than 5 servings or 400 g of fruit and vegetables per day** for the prevention of chronic diseases, including obesity⁹.

- **Increased intake of F&V are associated with weight change over 4 years**, with greater benefits for fruits (regardless of the fiber and glycemic load (GL) content) compared to vegetables, and strongest for apples/pears, berries, cruciferous (broccoli, cabbage, etc.) and green leafy vegetables¹⁰ (**Table 1**).

- Regarding vegetables, those with higher fiber and lower glycemic load (GL) such as Brussels sprouts, broccoli and string beans, were more strongly inversely associated with weight change compared to lower-fiber and higher-GL vegetables such as carrots and cabbages¹⁰.

3. How fruit and vegetables prevent undesirable weight gain, overweight and obesity?

- Because of their **low-energy density** and **satiogenic effect**, F&V intake helps controlling body weight¹¹.

▶ **Tableau 1 : Weight reduction over 4 years for each increased daily serving of fruit and vegetables¹¹**

| FOR EACH INCREASED DAILY SERVING OF | WEIGHT REDUCTION (G) OVER 4 YEARS |
|-------------------------------------|-----------------------------------|
| Fruits | |
| Apple/pears | 562 |
| Baies | 502 |
| Citrus fruits | 122 |
| Total fruits | 240 |
| Vegetables | |
| Cruciferous vegetables | 308 |
| Green leafy vegetables | 235 |
| Total vegetables | 113 |

- Their satietogenic effect is mainly due to **their high content in dietary fiber which increases satiety and reduces the feeling of hunger**. As a result, this may reduce total energy intake and prevent weight gain¹².

- As F&V have **low GL**, they produce fewer and smaller post-prandial glucose spikes that may decrease subsequent hunger and reduce total energy intake¹³. In addition, diets with low GL or low glycemic index may increase resting energy expenditure¹⁴, promoting weight maintenance.

- Fruit and vegetables also contain **meaningful concentrations of polyphenols**. These may influence insulin sensitivity¹⁵, the gut microbiome¹⁶, or the anabolic state of adipose tissue, which over a long period of time could promote relative weight stability.

*BMI = Weight (kg)/ Height (m²). For adults, BMI is commonly used to classify overweight (BMI ≥ 25 kg/m²) and obesity (BMI ≥ 30 kg/m²). It provides the most useful population-level measure of overweight and obesity as it is similar for both sexes and for all ages of adults. However, it should be considered an approximate indication¹.

BOX 1: PRACTICAL ADVICES FOR HEALTH PROFESSIONALS TO PREVENT UNDESIRABLE WEIGHT GAIN, OVERWEIGHT AND OBESITY ^{6,7}

1. Inform the patient about the **importance of not skipping meals**, and especially the **importance of the breakfast**.

2. Give the patient the key advice to **choose small portions by decreasing the size of the serving spoons, plates, bowls, and glasses especially for calorie-dense foods and beverages**.

3. Explain to the patients how to eat **mindfully** by:

- Taking a moment to relax;
- **Sitting down at a table** (no standing or walking) to eat and limiting distraction (television, smartphone, tablet, radio, reading, etc.);
- **Eating slowly and enjoying it, paying attention to the tastes**, flavors and textures of the food. Putting down the knife and fork between bites. Slowing down can help avoid overeating by giving the brain time to tell the stomach when it's had enough food. A sensation of satiety will appear after about 20 min after the beginning of the meal.
- **Stopping to eat when feeling full** and when the pleasure of eating decreases.

4. Encourage the patient to try as often as possible to **eat at home**: Fast food, restaurant meals, and other foods prepared away from home tend to have larger portions and be less nutritious than the foods we cook for ourselves.

5. When making the **grocery shopping**, it could be helpful to:

- **prepare a shopping list and to follow it**;
- **plan the menus according to the number of guests present; this will help prevent too much food on the table**;
- do your shopping **without being hungry**;
- **read the nutrition fact labels** on each product to check, among other things, the sugar and fat content.

6. Recommend the patient to **manipulate the home environment** to help them make healthier choices by:

- **buying fewer of the foods that are associated with the development of obesity** (e.g. sweetened beverages, high-caloric-density snacks, or sweets) or to reserve them for events. It is preferable to buy them **immediately before the event and to remove them immediately afterward** to decrease the temptation to snack on these items.
- **Making healthy alternatives, such as water pitchers, fruits, vegetables**, and other low-calorie snacks **readily available at all times and placed in plain sight** (e.g. in front of the refrigerator or in large bowls on the kitchen counter or table).

7. Simple advices to **promote physical activity and limit sedentary behaviors in daily life** could be to:

- **Reduce screen time**;
- **walk as often as possible** to go to work for example or to stores or get off at a stop before the destination when taking the bus;
- **use the stairs** instead of the elevator;
- spend more time working in the garden (if there is one) and/or walk the dog (if there is one) more often and longer.



For further information:

→ sheet 8 "How and why F&V prevent childhood obesity"

→ sheet 9 "How to deal with the obesogenic food environment?"