

HOW AND WHY F&V PREVENT CVDs ?

- ▶ Cardiovascular diseases (CVDs) are the **major cause of death**, representing 31% of all deaths globally and 45% of all death in Europe¹.
- ▶ Despite recent progress, CVDs remains the **leading cause of illness and disability** as well with 23% of the years lost to death or disability across the region. More than 85 million people across Europe live with CVDs².
- ▶ **Most CVDs can be prevented:** 80% of premature heart disease and stroke is preventable by controlling behavioral risk factors such as unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol¹.
- ▶ **Dietary risks** are a major contributor to CVDs, responsible for 56% of all the years lost to disability or death from CVDs in the European region².
- ▶ There is growing evidence about the **importance of nutrition early in life** – before and during pregnancy, infancy and early childhood – on later health outcomes. Healthy infant and young child nutrition is important for the prevention of CVDs (through protection against risk factors such as overweight, obesity and diabetes) later in life².

CVDs in the world

- > **31 %** all of deaths globally
- > **45 %** all of deaths in Europe
- > **80 %** all of premature heart disease and stroke is preventable by controlling behavioral risk factors
- > **56 %** all of the years lost to disability or death from CVD in the European region

FIGURE 1: CARDIOVASCULAR HEALTH-PROMOTING DIET



Cardiovascular health-promoting diet

A **plant based diet** is evidence established and considered as a cardiovascular health-promoting. Such a diet includes **vegetables, fruit and berries** in abundance. Whole grain products, nuts and seeds, fish, pulses, low-fat dairy products are also important. This everyday dietary pattern also means **limited consumption of red meat, processed meat products** and foods or drinks with low content of vitamins, minerals and dietary fiber and/or a high content of free sugars, saturated/trans fats or salt (Figure 1).

Regarding controversies about dietary recommendations there is still robust evidence for the messages to limit **salt consumption and to decrease saturated fat** (if consumed in excess) and to replace them with unsaturated fats or fiber-rich complex carbohydrates (Table 1)².

▶ Table 1: Dietary recommendations for a cardiovascular health-promoting diet^{2,3}

FOODS AND OTHER RELATED GOALS	
Fruit and vegetables	400-600 g/day
Sugar sweetened- drinks	decrease as much as possible
Body mass index (BMI)	20-25 kg/m ²
NUTRIENTS AND OTHER COMPONENTS	
Proteins	10 to 20% of total calories
Total fat	25-40%
Saturated fat	7-12% of total calories - To partially be replaced by unsaturated fats and fiber-rich complex carbohydrates
Trans fats	< 0.5% of calories, of which 0% from industrially-produced trans-fat
Total carbohydrates	45-65% of calories
Fiber	25-30 g/day
Free sugars	< 10% of calories
Salt	5-6 g/day (=2-2.4 g of sodium)

F&V and CVDs prevention

The evidence that higher intakes of F&V are protective against premature death, and more specifically, against cardiovascular deaths and the risk of stroke has strengthened in recent years².

This **protective effect increases in proportion to higher consumption**, showing that “more is better”⁴.

The risk reduction is already at 100 g intake of F&V and continues as well at highest intake levels up to 800 g (Table 2).

Diets supplemented with 4 tablespoon of extra virgin olive oil per day or 30 g of unsalted nuts per day have ~30% risk reduction of CVDs over 5 years⁶.

► Table 2: F&V intake and risk reduction of CVDs, coronary heart disease and stroke^{4,5}

	100 g/d	200 g/d	500 g/d	800 g/d
CVDs	4 to 10%	8 to 13%	22%	28%
Coronary heart disease	4 to 14%	8 to 16%	16%	24%
Stroke	7 to 14%	13 to 18%	28%	33%

How F&V lower CVDs' risk?

Multiple mechanisms are involved in CVD prevention through F&V consumption.

Because of their **low-energy density** and **satiatogenic** effect, F&V intake helps **controlling body weight**. For each daily serving of F&V, there's 240g and 113g of weight loss, respectively⁷.

Their high content in micronutrients with antioxidant effect (vitamins, polyphenols, and carotenoids) is protective **against oxidative stress** and **lipid peroxidation**⁸.

F&V intake reduces:

- **blood cholesterol** because of their high content in **dietary fiber**^{9,10}. An increase in soluble dietary fibers of 5-10 g/day reduces 5% LDL-cholesterol.
- **blood pressure** because of their high content in potassium which is opposed to the hypertensive effect of sodium. There's a decrease of 3.3 to 2.1 mmHg for a mean increase of 51 mmol/day of potassium¹¹.
- **plasma homocysteine** due to their **folic acid** content (vitamin B9). A daily consumption of 500 g of F&V containing 228.1 µg reduces by 11% plasma homocysteine¹².
- **inflammation** due to their high content in **dietary fiber and micronutrients with antioxidant effect**. A high consumption of F&V is associated with the lowest high sensitivity C-reactive protein (hs-CRP) ≤ 0.15 mg/L, an inflammatory biomarker¹³.



For further information:

→ sheet 12 “F&V: energy, nutrients and claims”