ULTRA-PROCESSED

FOODS

ALETHEIA
IL SEGRETO DEL BUON VIVERE

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Preface

Direct Ready-To-Eat (RTE) foods are increasingly taking up space in our diets, through snacks, carbonated soft drinks and all those products that form part of the ever-expanding galaxy of “junk food”. These products are the result of recipes that sometimes combine dozens of ingredients, all unknown to our kitchens. These synthetic substances mostly serve to giving the product shape, texture and flavour, as well as a very long shelf-life.

According to medical science, these substances are harmful if consumed systematically. Unfortunately, this is what is happening: Ultra-Processed Foods (UPFs) – the most accepted term in the scientific and health field – have become a fundamental part of our diets and in particular in those of children and adolescents. The consequence is a global health emergency, the extent of which has been (especially in recent years) denounced by many scholars and health authorities, calling for the intervention of policies aimed at reducing the consumption of Ultra-Processed Foods (UPFs) and countering their consumption especially in the younger age groups.

Health Risks

The world of research and in particular of medicine widely agrees that the excessive and systematic consumption of UPFs is now a **global health emergency**. Indeed, one consolidated scientific publication highlights the close relationship between the consumption of UPFs and various **chronic diseases**, such as **cardiovascular** problems, **cancer**, **diabetes**, **metabolic syndromes**, **anxiety**, **asthma**, **in addition to obesity**, a **scourge now widespread especially among children and adolescents**.

One of the most recent studies – involving experts from the Sorbonne University, the Johns Hopkins Bloomberg School of Public Health and the University of Sydney – took into account the most relevant surveys of the last three years, which in total involved about 10 million individuals worldwide. The result is **a direct link between the consumption of UPFs and 32 adverse health effects affecting in particular gastrointestinal**, **metabolic**, **respiratory** and **cardiovascular** health (1).

But studies that have verified the high probability of the association between the consumption of UPFs and various types of negative health impacts are numerous. In particular, on the risk of **obesity** (2), **hypertension** (3) and **dyslipidaemia** (4) and consequently on the entire spectrum of **cardio-metabolic diseases** (5). Some of this research focused attention on specific substances commonly used in the "construction" of many UPFs, such as **maltodextrin** (6)**,** emulsifiers (7), artificial **sweeteners** (8) and dozens of other substances.

The Urgency: Children and Adolescents

The risks start from **nutrition during pregnancy**, it being found that a high intake of UPFs can negatively affect the **cognitive development of the child** (9). Several studies have then highlighted the high probability of an association between ultra-processed consumption during gestation and the **weight of the newborn** (10), as well as the close relationship with the development of certain **allergies** (11).

The most urgent problem is the high percentage of UPFs in the diets of **children** and **adolescents**. These are stages of life in which eating habits are highly likely to take root and in which the first health disorders associated with the spread of "bad" eating styles begin to manifest. In particular, the systematic consumption of UPFs, also thanks to their artificially-generated hyper-palatability, is **addictive**. Numerous studies have confirmed the association between excess weight issues and very acute forms of food dependence (12).

Because of this, health institutions around the world are questioning how to curb this "race" to consume UPFs. Recently, the **UK** Government decided to introduce a **ban on advertising** these products before 9:00 pm.

A Global Emergency

Children and young people derive the most calories from UPFs. A group of researchers from the Universities of Cambridge and Bristol observed the eating behaviours of about 3,000 adolescents in the UK and estimated that almost **70% of the energy consumed came from the consumption of UPFs** (13). Other research confirms the propensity for the spread of UPFs in a more pronounced way among children and adolescents. But more generally, there several surveys on samples of consumers, also very numerous, lead to worrying estimates on the contribution of Ultra-Processed Foods in our diets.

In the **United States**, the caloric intake provided by UPFs is estimated to be on average greater than **60%** of the total. One of the most representative surveys in Europe – involving 22 countries, including Italy – estimated the caloric contribution of UPFs at around **40%** of the total for **Sweden and the United Kingdom**, compared to around **33%** in the **Netherlands**. The lowest value belongs to **Italy** with an average contribution of **12%**.

These numbers are prompting many scientists and doctors to ask for investment in campaigns and equipment to limit the consumption of UPFs. Among these, Professor **Monteiro**, a scientist responsible for the most widespread system of classification of foods according to their degree of manipulation, recently called on international health authorities to **adopt initiatives against UPFs similar to those for the fight against smoking** (14).

Identifying Ultra-Processed Foods

It's not always easy to know if we're dealing with UPFs. We know that obviously not all foods are fresh or preserved by traditional methods, but it can be more difficult to identify what is ultra-processed and what is not within the galaxy of packaged products and in particular some product categories.

Like **bread** that can be made with **flour**, **water**, **salt** and **yeast** or, in its ultra-processed version, which we can easily find packaged or even just-baked from bakery counter in the supermarket yet which can also contain **over 15 ingredients**, **including dextrose**, **guar gum**, **barley malt extract**, **carbonated**, **emulsified** and more. The same can be said for **breakfast cereals**, **some of which contain over 50 ingredients**, as can many other foods.

As suggested in a Food and Agriculture Organization paper on UPFs (15), reading labels is essential. When we find unknown substances in the list of ingredients, we can identify a product as ultra-processed. These are **artificial flavours**, **flavour enhancers**, **colourants**, **emulsifiers**, **artificial sweeteners**, **thickeners** and **anti-foaming agents**, as well as **bulking**, **foaming**, **gelling** and **glazing agents** and **more**. On the OpenFoodFacts platform (https://it.openfoodfacts.org/) – a non-profit initiative that has catalogued the ingredients of over 3 million products to date – it is possible to verify whether or not many of the products we purchase daily belong to the ultra-processed category.

Policies to Combat Ultra-Processed Foods

Several countries have taken initiatives to specifically address the expansion of consumption of UPFs.

In particular, **Belgium**, **Canada**, **France**, **New Zealand**, **Qatar**, **Brazil**, **Ecuador**, **Israel**, **Maldives**, **Peru** and **Uruguay** specifically discourage the consumption of UPFs in their **national dietary guidelines**.

Similarly, guidelines adopted by **Canada** recommend limiting ultra-processed foods and beverages. **Colombia** has taken further steps in the fight against UPFs, launching a **food tax on UPFs** in 2023, introducing an additional 10% tax, set to rise to 25% in 2025. **Israel** and **Mexico**, rather, have adopted labels that identify beverages containing sweeteners.

Finally, a few days ago, the United Kingdom's new Labour government announced that, starting from 1st October 2025, it will prohibit the **airing of commercials promoting junk foods** (carbonated drinks, savoury snacks, sweets, etc.).

Classifying Foods – The NOVA Method

The NOVA method was developed by a team of Brazilian scientists and has become one of the most popular tools in the scientific community and among health authorities. The system is aimed at classifying foods on the basis of the intensity of the transformation processes applied, which peaks when substances created “artificially” intervene in the formulation of the product and a series of processes and treatments such as pre-cooking or aimed at subtracting, adding and modifying to render the products more palatable in terms of shape, texture, flavour and associated message.

The latter is the case with many diet, light or zero products. In fact, UPFs do not always correspond to calorie bombs. An increasing number of products are making their way with little or scarce energy value and just as little nutritional value, yet containing a high number of synthetic products.

The NOVA method distinguishes foods according to the degree of processing in 4 categories. The first refers to products that are consumed naturally or with minimal processing, the second to products that are defined as processed culinary ingredients, the third to processed products and the fourth and last to UPFs.

The NOVA Classification 1/4

GROUP 1 –

Unprocessed and minimally-processed foods

- Edible parts of plants (fruits, seeds, leaves, stems, roots, tubers) or animals (muscles, fat, offal, eggs, milk), as well as fungi and algae.
- Unprocessed foods altered by processes such as removing inedible or unwanted parts, drying, pulverising, squeezing, crushing, grinding, fractionating, steaming, boiling, roasting and pasteurising, refrigerating, freezing, placing in containers, vacuum packaging, non-alcoholic fermentation and other methods that do not add salt, sugar, oils or fats or other food substances to the original food.

EXAMPLES

Fresh, squeezed, chilled, frozen or dried fruit or leafy and root vegetables; **grains** such as whole, parboiled or white **rice**, corn cobs or kernels; **legumes** such as beans, lentils and chickpeas; starchy tubers such as **potatoes**; fresh or dried **mushrooms**; **meat**, poultry, **fish** and seafood, whole or in the form of steaks, fillets and other cuts; fresh, powdered, chilled or frozen **eggs**; fresh, powdered or pasteurised **milk**; fresh or pasteurised fruit or vegetable **juices** (**without the addition of sugars**, **sweeteners** or **artificial flavourings**); granules, flakes or flour of corn, wheat or oats; dried and ground fruit and other oil seeds (without the addition of salt or sugar); fresh or pasteurised herbs and **spices**; **yoghurt**; tea, **coffee**, **honey**, **oil**; **pasta**, **couscous** and **polenta** prepared with flours, flakes or granules and water.

The NOVA Classification 1/4

GROUP 2 –

Processed culinary ingredients

- Substances obtained directly from Group 1 foods by industrial processes such as pressing, centrifugation, refining and extraction. They are used to prepare, season and cook Group 1 foods. They may contain additives that prolong the shelf-life of the product, protect the original properties or prevent the proliferation of microorganisms.

EXAMPLES

Vegetable oils obtained from seeds, nuts or fruits (especially olives); **butter**; **sugar** and molasses obtained from cane or beet; **honey**, maple syrup; **starches extracted** from corn and other plants; vegetable oils with added **antioxidants**; salt extracted or from seawater and cooking salt with added drying agents.

The NOVA Classification 3/4

GROUP 3 –

Processed foods

- Products obtained by adding salt, oil, sugar or other ingredients in Group 1 to Group 2 foods, using preservation methods such as canning and bottling and, in the case of bread and cheese, using non-alcoholic fermentation. The processes and ingredients are used to increase the shelf-life of Group 1 foods and make them more pleasant by modifying or improving their sensory qualities. They may contain additives that prolong the shelf-life of the product, protect the original properties or prevent the proliferation of microorganisms.

EXAMPLES

Canned or pickled vegetables and **legumes**; fresh **cured meats**, salted or sweetened nuts and seeds; **salted**, **dried**, **aged** or **smoked meats** and fish; **canned fish** (with or without added preservatives); syrupy fruit (with or without added antioxidants); fresh **bread** and **cheeses**.

The NOVA Classification 4/4

GROUP 4 – Ultra-Processed Foods

- Formulations of ingredients, mostly for exclusive industrial use, made by means of a series of industrial processes that include the fractionation of whole foods into substances, the chemical modifications of these substances and the the assembly of food substances using industrial techniques such as extrusion, moulding and pre-frying; the use of additives (artificial flavours, flavour enhancers, emulsifiers, sweeteners, thickeners, anti-foaming agents, icing agents and much more) at various stages of production, being – unlike Group 3 foods – functional to making the food hyper-palatable.

- The end result is often projects aimed at creating products that are highly-profitable (low-cost ingredients, long shelf-life), ready-for-consumption and hyper-palatable.

EXAMPLES

Snacks, **carbonated soft drinks**; **sweet** or **savoury** packaged snacks; industrial confections; ice-creams; mass packaged **bread** and **focaccia**; **margarine** and **other spreads**; many biscuits, cookies, pastries and cakes, cake doughs; many **breakfast cereals**, **energy bars**; **energy drinks**; many lean yoghurts, many products ready for heating, including cakes and pasta and pizza dishes; croquettes and sticks; **reconstituted meat products**; noodles and desserts in powder and **packaged, as well as instant,** salutary and slimming products, such as **shakes** and **meal replacement powders**.

Proposals to Limit Consumption of Ultra-Processed Foods

- Development of awareness campaigns in schools and through the media, aimed at disseminating knowledge about the dangers associated with the systematic and continuous intake of UPFs;

- Identification of limits on the supply and consumption of UPFs in school and public canteens;

- Prohibition of the sale of UPFs in distributors located in public buildings, in particular in schools of all levels;

- Identification of limits on advertising concerning UPFs, following the example of the United Kingdom, which has banned the time slots of greatest exposure for children and adolescents;

- Definition of forms of labelling aimed at highlighting the possible belonging of a food product to the category of UPFs.

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