



NUTRIWELLB

Ebook on
**Nutrition and
Well-Being
Fact-Checking**
for Higher Education

Editors:

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Ainhoa Ezquiaga-Bravo
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I. Introduction

This e-book is part of a project on Nutrition and Well-being Fact-checking for Higher Education (**NUTRIWELLB**), funded by the Erasmus + programme of the European Commission, from December 2022 to November 2024 (funding number 2022-I-ES01-KA220-HED-000089546). With the Complutense University of Madrid acting as coordinator, the other partners in the project are the University of Alcalá de Henares (Spain), NOVA University Lisbon (Portugal), Accreditation Council for Entrepreneurial and Engaged Universities (ACEEU, Germany), the Center for Knowledge Management (North Macedonia) and Fondazione Comunitaria di Agrigento e Trapani (FCAT, Italy).

The aim of NUTRIWELLB is to promote fact-checking related to nutrition and well-being, to respond to the alarming increase of fake news and misinformation in these fields. Since there is no clear consensus in scientific literature or among the public about the precise definition of fake news, this e-book adopts a wide approach and attempts to address the problems deriving from a variety of factors: the overwhelming availability of information online that hinders cross-checking and assessment of the reliability of sources, misrepresentation of nutritional information, the promotion of nutritional choices for economic profit by lifestyle influencers or assumptions about nutrition and health that are present in everyday culture but rely more on faulty cause-attribution rather than on scientific findings.

In an era like the one we live in, dominated by clicks, likes and alarmist headlines, it is essential to choose reliable sources from which to obtain correct information on scientific issues. The choice of our sources of information is especially important in a field as changing as nutrition, so we must contrast the sources of everything we read: it is the only way to be able to form critical opinion. In this context, the promotion of accurate nutritional information and statements is a priority in the elaboration of the present document.

Acknowledging the importance of evidence-based nutritional practice from health providers is essential to improve the well-being of the general population: this is the core aim of the NUTRIWELLB project. We consider that nutritional recommendations and clinical practice must be based on sound evidence available through reliable scientific publications. However, we must also consider that the science of nutrition follows the

standards of experimental methodology and, like any other science, its assertions are subject to refutation or further development in the future.

Moreover, the growing interest of the population in health has had a positive impact on the number of studies and on the availability of funds for the scientific community. This abundance, nevertheless, has to deal with a phenomenon called “infoxication”, in which the quantity of information severely hampers discernment between up-to-date and sufficiently proven information and obsolete or biased statements. For this reason, research for this project has prioritised applying international consensus from official sources, such as the World Health Organization or national health ministries (sections 2 and 3), together with academic publications (sections 5 and 6).

In the following pages, this handbook will offer specialised information and tools for higher education students, professors and other interested stakeholders to debunk fake news about food habits, both in the mass media (the press, advertising and magazines) and the Internet. A specific aim is to debunk fake news about diets that reinforce stereotypes, especially about the female figure. Stereotypes about the male figure will also be considered to adopt a comparative perspective on how both genders are affected by fake news on nutrition and well-being.

Following the introduction of this e-book, international regulations on nutrition and fake news will be introduced, with references to the sustainable development goals of the United Nations, recommendations from the World Health Organization (WHO) and regulations from the European Union. The next two sections will be devoted to national legislations on nutrition and fake news, and good practices on nutrition, well-being and fact-checking related to online content. Both topics will be analysed more specifically for selected countries, namely: Germany, Italy, North Macedonia, Portugal and Spain. They offer references for stakeholders interested in the topic regarding which aspects of the national contexts are important, in order to develop strategies against fake news on nutrition and well-being from a legal and a social perspective.

References to national legislations and good practices are followed by specific recommendations for fact-checking of online content in respect of nutrition and well-being. This section will include information on: nutritional literacy and food labelling; identification of fake news and media labelling; mass media and dietary behaviour; idealised representations and gender stereotypes in the social media; the social media and eating disorders.

The last section of the e-book is a toolkit for nutrition and well-being fact-checking for higher education, including some preliminary findings based on a questionnaire that interested stakeholders or professors can implement to measure nutrition and well-

being fact-checking among targeted audiences. This section also examines fake news in comparison with real information on food and nutrition identified through reliable scientific and public sources.

The sources of information for the first two sections are regulations, recommendations, global strategies and national legislation related to nutrition, health and fact-checking. In the third section, good practices refer to initiatives by public and private stakeholders. On the other hand, the sources of information for the last two sections are academic contributions from nutritionists and experts in fake news and misinformation.

This e-book has benefited from the contributions of all the international teams involved in the NUTRIWELLB Erasmus + Project. After the preliminary version was completed, it was submitted for evaluation to five experts in the fields of nutrition, psychology, health communication and journalism.

2. International framework on nutrition and fake news

In an era of worldwide access to information, the dissemination of accurate and reliable knowledge is however increasingly overshadowed by the rise of fake news and misinformation. In the realm of public health and nutrition, this poses a significant challenge. To address these issues, various international organisations, including the United Nations (UN), the World Health Organization (WHO), and the European Union (EU), each in their corresponding capacity, have developed regulations, recommendations and global strategies aimed at promoting accurate nutritional information and combating the spread of fake news.

a. Sustainable Development Goals (SDG) of the United Nations



The scope of this e-book is related to 3 of the United Nations Sustainable Development Goals.

First, it is related to **SDG 3. Good health and well-being**, regarding which the UN indicates that “Multisectoral, rights-based and gender-sensitive approaches are essential to address inequalities and to build good health for all.”

Second, it is related to **SDG 4. Quality Education**, regarding which the UN indicates: “It also aims to provide equal access to affordable vocational training, to eliminate gender and wealth disparities, and achieve universal access to a quality higher

education.” Moreover, this current project connects with 2 target goals defined by the UN for SGD 4, namely:

- By 2030, to ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and the contribution of culture to sustainable development.
- To build and upgrade education facilities that are child-, disability- and gender-sensitive and provide safe, nonviolent, inclusive and effective learning environments for all.

Third, NUTRIWELLB connects with SDG 5. **Gender Equality**, regarding which the UN indicates: “Ending all discrimination against women and girls is not only a basic human right, it’s crucial for a sustainable future; it’s proven that empowering women and girls helps economic growth and development.” Moreover, this current project connects with 2 target goals defined by the UN for SDG 5, namely:

- To enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
- To adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

Reference: [Sustainable Development Goals | United Nations Development Programme \(undp.org\)](https://www.undp.org/sustainable-development-goals)

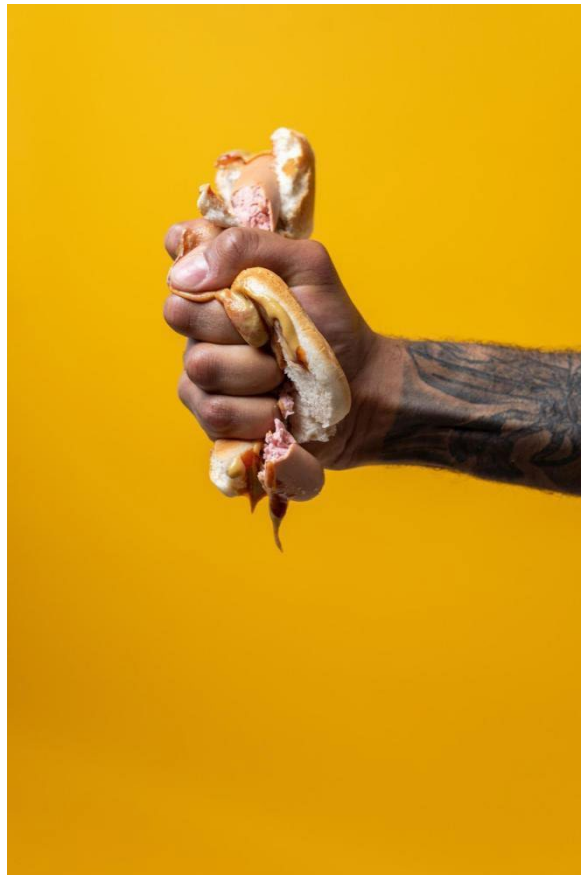
b. Recommendations from the World Health Organization

Recommendations on **nutrition, a healthy diet, digital health, gender and health**, from the World Health Organization (WHO), are key references as international standards for this e-book on Nutrition and Well-being Fact-Checking for Higher Education (NUTRIWELLB).

According to the Constitution of the WHO, adopted in 1946: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Since then, the WHO has implemented specific programmes on issues related to NUTRIWELLB.

In the field of **nutrition**, the WHO considers:

- **“Nutrition is a critical part of health and development.** Better nutrition is related to improved infant, child and maternal health, stronger immune systems, safer pregnancy and childbirth, lower risk of non-communicable diseases (such as diabetes and cardiovascular disease), and longevity. **Healthy children learn better.** People with adequate nutrition are more productive and can create opportunities to gradually break the cycles of poverty and hunger.”



- According to the 2016–2025 nutrition strategy, the WHO uses its convening power to help set, align and advocate for priorities and policies that move nutrition forward globally; develops **evidence-informed guidance based on robust scientific and ethical frameworks**; supports the adoption of guidance and implementation of effective nutrition actions; and monitors and evaluates policy and programme implementation and nutrition outcomes.

- This work is framed by the **Comprehensive implementation plan on maternal, infant, and young child nutrition**, adopted by Member States through a World Health Assembly resolution in 2012. Actions to promote good nutrition are also vital for achieving the diet-related targets of the Global action plan for the prevention and control of non-communicable diseases 2013–2020, the Global strategy for women’s, children’s, and adolescent’s health 2016–2030, the report of the Commission on Ending Childhood Obesity (2016), and the 2030 Agenda for sustainable development.
- In May 2018, the Health Assembly approved the 13th General Programme of Work (GPW13), which guides the work of the WHO in 2019–2023. **Reduction of salt/sodium intake and elimination of industrially produced trans-fats from the food supply** are identified in GPW13 as part of the WHO’s priority actions to achieve the aims of ensuring healthy lives and to promote well-being for all at all ages.”

Reference: [Nutrition \(who.int\)](https://www.who.int/nutrition)

In the field of what constitutes a **healthy diet**, the WHO considers:

- “A healthy diet is a **foundation for health, well-being, optimal growth and development**. It protects against all forms of malnutrition. Unhealthy diet is one of the leading risks for the global burden of disease, mainly for non-communicable diseases such as cardiovascular diseases, diabetes, and cancer.
- A healthy diet is also **more environmentally sustainable**, as it is associated to lower greenhouse gas emissions, lower use of fresh water and land mass.
- However, healthy diets can be inaccessible, particularly in low- and middle-income countries, and also in places and situations with high rates of food insecurity. Around the world, an estimated 3 billion people cannot access safe, nutritious and sufficient food. In addition, **the proliferation of highly processed food, supported by aggressive marketing, rapid unplanned urbanization and changing lifestyles have contributed to more people eating unhealthy diets high in energy, free sugars, salt, saturated fats and trans fats**”.

Reference: [Healthy diet \(who.int\)](https://www.who.int/healthy-diet)

More specific recommendations from the WHO for a healthy diet are included in the toolkit, located at the end of this e-book.

With regards to **gender and health**, the WHO considers:

- “Gender refers to the characteristics of women, men, girls and boys that are socially constructed. This includes norms, behaviours and roles associated with being a woman, man, girl or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time.
- **Gender is hierarchical and produces inequalities** that intersect with other social and economic inequalities. Gender-based discrimination intersects with other factors of discrimination, such as ethnicity, socioeconomic status, disability, age, geographic location, gender identity and sexual orientation, among others. This is referred to as intersectionality.
- **Gender inequality and discrimination faced by women and girls puts their health and well-being at risk.** Women and girls often face greater barriers than men and boys to accessing health information and services.
- Harmful gender norms – especially those related to **rigid notions of masculinity – can also affect boys and men’s health and well-being negatively.** They can also have grave implications for their mental health.”

Reference: [Gender \(who.int\)](https://www.who.int)

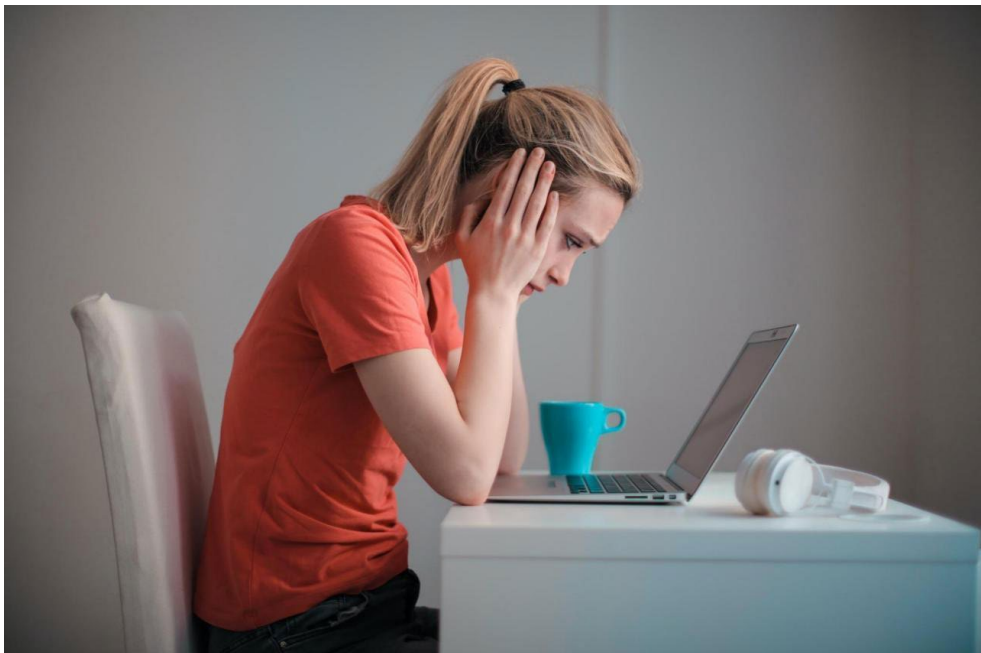
In the field of **digital health**, the WHO considers:

- “Digital technologies are now integral to daily life, and the world’s population has never been more interconnected. Innovation, particularly in the digital sphere, is happening on an unprecedented scale. Even so, its application to improve the health of populations remains largely untapped, and there is immense scope for the use of digital health solutions. The WHO is harnessing the power of digital technologies and health innovation to accelerate the global attainment of health and well-being.
- The WHO Global Strategy on Digital Health, adopted in 2020 by the World Health Assembly, presents a roadmap to link the latest developments in innovation and digital health, and to put these tools into action in order to improve health outcomes.”

Although the WHO Global Strategy on Digital Health does not refer to fake news, it does mention **infodemic**, and defines it as “an acute outpouring of information, including potentially misleading or inaccurate information that, in a digital, hyper-connected society such as the present one, is likely bound to accompany every epidemic or acute health crisis.”

For this e-book, it is relevant to note that the WHO calls for the need for **caution about “potentially misleading or inaccurate information”, especially “in a digital, hyper-connected society such as the present one.”**

Reference: [Digital health \(who.int\)](https://www.who.int/digital-health)



c. **European Union**

To unify basic requisites on nutrition and food in member states, the European Union has adopted several regulations, such as the following ones.

The **EU Food Information Regulation (FIR) No. 1169/2011** regulates how food must be labelled in the EU. It sets out the minimum information that must be included on food packaging, such as the name of the food, list of ingredients, allergen labelling, net quantity, best-before date, company address, and instructions for use. This mandatory information must be located in a conspicuous place, clearly legible, and easily visible. The

FIR also requires origin marking wherever the consumer needs this information to make a well-informed choice. The regulation also requires alcoholic beverages to indicate their actual alcohol content if it exceeds 1.2% vol. and mandates a nutritional declaration for most pre-packaged foods since December 13, 2016.

The European Parliament adopted the compromise package for the Food Information Regulation negotiated with the Council and the Commission on July 6, 2011. The regulation ensures that manufacturers use uniform and clear labelling requirements throughout Europe and that consumers are fully informed when buying food. It replaces the previous European labelling directive as well as the European nutrient labelling directive. **Nutritional labelling became mandatory** and nutritional information, which was previously largely voluntary, must now be provided in all countries of the European Union. The regulation also includes additional requirements for highlighting allergenic ingredients in the ingredient list, a new origin labelling for fresh meat, and clearer labelling of food substitutes. The font size for mandatory information is also specified. The so-called food traffic light system, which assigns stop signals to individual foods, was rejected.

Reference: [Regulation No. 1169/2011 of the European Parliament and of the Council](#)

The **(EC) Regulation on nutrition and health claims made on foods No. 1924/2006** harmonises EU member states' regulations on nutrition and health claims for food labelling and advertising. **It aims to protect consumers and ensure that any voluntary statement on food is clear, precise, and scientifically substantiated.** The regulation also aims to promote fair competition and protect innovation in the food sector. The regulation defines terms such as "claim," "health claim," and "reduction of disease risk claim". Health claims are generally prohibited unless they meet the general and specific requirements of the regulation. In such cases, they are authorised. The regulation provides different procedures for the authorization of claims related to reducing risks. Food businesses can apply for an exemption for traditional product names that indicate a category of food or beverage with effects on human health. They can apply for the exemption through the competent national authority.

Reference: [Regulation \(EC\) No. 1924/2006 of the European Parliament and of the Council](#)

Other specific EU regulations on food and nutrition are:

- Commission Regulation (EU) 2019/649 regulating **the content of trans-fat**, other than trans-fat occurring naturally in fat of animal origin, in food intended for the final consumer and food intended for supply to retail.

- Commission Directive 2006/141/EC on the compositional and labelling requirements for **infant formula**.

Additionally, in 2018, the European Commission issued a “**Communication on tackling online disinformation: a European perspective**”, under the auspices of the EU’s Digital Strategy. The Communication provides useful information to identify fake news, which are defined as information whose aim is to mislead in order to create financial gain. The EU Communication focuses more on politically oriented fake news which puts democracy and public health at risk. These have become particularly relevant with the increase of fake news regarding politics and vaccines during the COVID-19 pandemic.

As indicated in the Communication: “Disinformation is understood as verifiably false or misleading information that is created, presented and disseminated for economic gain or to intentionally deceive the public, and may cause public harm. Public harm includes threats to democratic processes as well as to public goods such as Union citizens’ health, environment or security.” Although there is no reference to nutrition or food, the Communication contributes to the framing of the European context for fact-checking.

Moreover, the Communication crystalized in an **Action Plan against Disinformation** founded on the four following cornerstones:

- To improve the capabilities of EU institutions to detect, analyse and expose disinformation



In 2018, the EC also developed a “**Code of practice on disinformation**”, to provide tools for users to protect themselves against disinformation. In 2022, the EC published a “**Strengthened Code of Practice on Disinformation**”, joining forces with various platforms specialising in transparent advertising. For the first time, this code took into account the new digital challenges posed by fake news, including **fake profiles, bots and phishing**. The code proposed measures such as designing applications to ensure safe practices in the user experience. It also refers to the **need for digital pedagogy**.

According to the EC, the measures and commitments contained within the Code of Practice on Disinformation are strengthened through the following headings:

1. Open for all
2. Covers new manipulative behaviour
3. More and better tools for users
4. Hand in hand with the DSA (Digital Services Act)
5. EU- wide fact-checking
6. Transparent political advertising
7. No financial gains from disinformation
8. Task force for a future-proof code
9. Ensure access to data researchers”

In relation to point 5, the EC considered that “Fact-checkers are essential and will be rewarded with fair financial contributions for their work.”

Reference: [2022 Strengthened Code of Practice on Disinformation - Factsheet | Shaping Europe’s digital future \(europa.eu\)](#)

In the field of health, the Digital Strategy develops policies to ensure access to quality health services and care through secure digital platforms. In 2018, the EC released its “**Communication on the digital transformation of health and care**”.

The EC aims to **inform users on how to increase their autonomy in the use of digital platforms**. The **digital gap should be reduced through pedagogical strategies**. In this way, citizens would be able to reinforce their competences in having access to private information on their health from any EU country.

Reference: [eHealth | Shaping Europe's digital future \(europa.eu\)](https://europa.eu/european-council/en/ehealth-shaping-europes-digital-future)

d. Recommendations for a global strategy based on international standards

Although the United Nations, the WHO and the EC have not launched a global strategy for nutrition and well-being fact-checking, the international initiatives previously mentioned give some orientation about which steps should be taken for such a strategy to be implemented. Based on the regulations and recommendations from the United Nations, the World Health Organization and the EU, the main aspects of such a strategy are the following:

- Nutrition is a key issue in respect of well-being, health, a sustainable lifestyle and a sustainable environment, with implications at both individual and society levels. A healthy diet is fundamental to limit cardiovascular diseases, diabetes and cancer, obesity and malnutrition. It is essential to protect and ensure the quality of maternal, infant and young children's nutrition.
- Nutrition and well-being fact-checking should be based on accurate information, provided by reliable sources, such as public institutions, professional organisations and scientific experts. Fact-checking should keep in mind ethical standards.
- As citizens have direct access to different kinds of information, especially through online content, education and pedagogical tools are fundamental for them to distinguish between accurate information and fake news. Since new digital challenges are emerging (such as bots, phishing, fake profiles, clickbaits, etc.), citizens should learn to use tools to protect themselves against disinformation.
- Misinformation is identified as a threat to democracy, environment and health. According to the EU, fake news aims at misleading audiences and making economic profit. According to the WHO, citizens should be aware that aggressive marketing supports the proliferation of highly processed food, which is negatively affecting nutrition. Advertising should be transparent and private companies should be involved in the battle against fake news.
- Misinformation in the field of nutrition and well-being can have negative consequences for women and girls, who suffer discrimination and inequalities. Gender stereotypes can also affect boys and men, especially in terms of mental health.

In the section dedicated to good practices, reference to specific EU initiatives with regard to fact-checking on nutrition and well-being will be included. In the toolkit section, specific WHO recommendations for a healthy diet will be referred to.

3. National legislation on nutrition and fake news (selected countries)

After an analysis of selected international standards, this section will be devoted to the national legislation on nutrition and fake news in selected countries, namely: Germany, Italy, North Macedonia, Portugal and Spain. To understand the implications of national standards for nutrition and well-being fact-checking, this section attempts to answer the following questions:

- Which are the public institutions in charge of legislation in the field of nutrition, health and fact-checking?
- What legislation has been adopted on nutrition and food? When?
- Are there any specific public initiatives against fake news on nutrition, well-being and health? If specific initiatives are lacking, are there any transversal and generic public initiatives against fake news?
- Which social groups are identified as the most vulnerable? Are there specific initiatives for pregnant women, infants, young children and teenagers? Are there any specific initiatives designed to fight against gender inequalities?



a. Germany

The **Federal Ministry of Food and Agriculture**, known in Germany as *Bundesministerium für Ernährung und Landwirtschaft* (BMEL), is the cabinet-level ministry of Germany. Among others, BMEL's main aims are to **promote a well-balanced and healthy diet with safe food and at the same time provide clear consumer information with regard to food purchases**. Considerable legislation relevant to nutrition in Germany has been adopted from the European Union regulations which are included in the previous section.

BMEL is currently developing a **Food and Nutrition Strategy for the German Federal Government in consultation with various stakeholders**, including representatives from science, the food industry, environmental conservation, consumer protection, the federal states, municipalities, and civil society. The goal is to provide **food and nutrition policy targets and guidelines, define spheres of action and include specific and measurable actions** that promote healthier, more resource-conserving, and more plant-based dietary choices, as well as increased physical exercise, while taking into account current issues such as rising food prices. The main objective is to make it as easy as possible for all people to have a balanced diet, by promoting and establishing beneficial food environments and dietary habits.

Furthermore, the Federal Government adopted the concept paper coordinated within the government and entitled “**Pathway to the Federal Government’s Food and Nutrition Strategy**” (available in German only) on December 21st, 2022. The strategy is expected to be finalised and adopted by the end of 2023.

Reference: [Food and nutrition strategy](#)

In respect of **fake news in the field of nutrition**, the German government has not implemented any specific legislation. However, the Federal Ministry of Food and Agriculture frequently releases statements and publications addressing **common misconceptions and myths** surrounding nutrition, such as the effectiveness of diets which are in fashion or the safety of food additives.

The German **Competition Law** (Gesetz gegen den unlauteren Wettbewerb) contains provisions that prohibit false or misleading advertising. This includes false or exaggerated claims about the nutritional benefits of a particular food product.

Reference: [Act against Unfair Competition](#)

The Federal Minister of Agriculture and Food, Cem Özdemir, has announced plans to increase **child protection in food advertising** by proposing a **ban on advertising food high in sugar, salt, or fat aimed at children**. The proposed legislation defines children as those **under 14 years of age** and prohibits advertisements directed at children in all media, including influencer marketing and outdoor advertising. The law will also **prohibit sponsorship of high-sugar, high-fat, or high-salt foods aimed at children**. The World Health Organization's nutrient profiling model will be used to determine which foods exceed acceptable levels of sugar, fat, or salt. The legislation aims to **promote healthier eating habits and reduce the risk of obesity and diet-related diseases among children**.

Reference: [Özdemir presents bill for more child protection in advertising \(German\)](#)

Moreover, the German government has taken steps to **combat the spread of fake news** related to health, including information related to nutrition. The Federal Centre for Nutrition (BZfE) provides information on **how to identify and avoid false information related to health**. The BZfE offers resources to help individuals **identify credible sources of information** related to health and nutrition, including tips on how to evaluate the credibility of websites and social media posts. The BZfE also provides information on **how to report false information related to health**.

Reference: [BZfE article against fake news and nutritional myths](#)

Lastly, besides legislation and public policies, a number of **private organisations promote** other **nutritional guidelines**. The German Nutrition Society (DGE) offers nutritional guidance and a recommended daily calorie intake. The DGE frequently updates its **recommendations on a balanced and healthy diet** to ensure individuals receive the necessary information on what and how much to consume. The **DGE's 10 dietary guidelines for a wholesome diet** summarise the latest scientific findings and suggest how to maintain a nutritious diet. The guidelines encourage a diverse range of food

choices, with emphasis on plant-based options, at least five servings of fruit and vegetables daily, selecting whole grains, moderating animal product consumption, prioritising healthy fats, reducing sugar and salt intake, drinking primarily water, and using gentle cooking methods.

Reference: [DGE's 10 dietary guidelines for a wholesome diet](#)

The German Federal Government has a **line of action against fake news**, uniting efforts across administrations. Its aims are:

1. **Uncover and analyse disinformation.** Various ministries and authorities in Germany are continuously analysing the news situation within the scope of their responsibilities.
2. **React in a coordinated and decisive manner.** To effectively stop disinformation, quick and decisive action is necessary.
3. **Combat the spread of disinformation.** Fake news and conspiracy myths are primarily shared in social media platforms; therefore platform operators are responsible for taking action against the spread of disinformation. The Network Enforcement Act obliges them to process user complaints quickly, and the Federal Ministry of Justice is responsible for legislation throughout Germany.
4. **Research phenomena.** To combat disinformation, it is important to understand the developments and mechanisms behind its increase. Research is being carried out on how disinformation spreads and the techniques used, including deep fakes, which, for example, falsify videos with politicians by adding a false voice. The Federal Ministry of Education and Research supports such research projects.
5. **Educate and sensitise citizens.** To combat disinformation, the Federal Government is focusing on strengthening media and news skills for individuals.

Although this line of action is mainly oriented towards fake news which are seen as a threat to the German political system, especially if they come from a foreign country, these 5 key points could be used to design a global strategy for nutrition and well-being fact-checking. Reference: [Dangerous Fake News: What the Federal Government is doing and what you can do](#)



The **German Federal Centre for Health Education (BZgA)** was founded in 1967, with the aim of preventing health risks and supporting health-promoting lifestyles. The Federal Centre for Health Education in Germany is responsible for executing policy at the federal level as an expert agency within the jurisdiction of the Federal Ministry of Health (BMG). The BZgA is specifically tasked, according to its decree of establishment issued on July 20, 1967, with the following responsibilities:

1. The development of principles and guidelines for content and methods of practical health education,
2. The education and training of people working in the field of health education and information,
3. The coordination and strengthening of health education in Germany, including cooperation with other countries.

The BZgA offers many **scientifically based campaigns** with advisory services, videos, audios and information materials that aim to promote a healthy lifestyle. The website includes information on healthy eating, physical activity, and stress management. It has reached a wide audience and has contributed to increased awareness of the importance of a healthy lifestyle.

Reference: [Tasks and Goals of the BZgA](#)

b. Italy

In Italy, the “**Guidelines for a healthy diet**” together with the “**Levels of Reference Intake of Nutrients**” (LARN) are the country’s main food policy guidance tools. LARNs are **nutritional advice**, i.e. they suggest the amount of nutrients and energy necessary to meet relative needs. The Guidelines, on the other hand, indicate through which **food choices** the LARN can be met, depending on **tradition and local habits**. These are the two main tools to define a healthy diet.

The public body responsible for promoting healthy nutrition is the **National Research Institute for Food and Nutrition** (*Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione*, INRAN), which was established in 1963. Today it is called the Council for Agricultural Research and Agricultural Economics Analysis (*Consiglio per la Ricerca in agricoltura e l’analisi dell’Economia Agraria*, CREA). CREA is a **food and nutrition research centre** supervised by the Ministry of Agriculture, Food Sovereignty and Forestry.

INRAN (now CREA) is the editor of the “Guidelines for a healthy diet” (*Linee guida per una sana alimentazione italiana*), which was first published in 1986 and is subject to continuous revisions. Since 1986, four editions have been published, the latest update being published in 2020. **The text is drafted by a group of experts**. More than 100 members form the committee, including: representatives of all the Ministries involved in the topics of the text, chairs of the Italian Academy of Nutrition, representatives of scientific societies in the nutritional and medical fields, and associations of doctors, dietitians, biologists and consumers, as well as a broad representation of the CREA scientific community.

The main objective of the Guidelines is to **promote a healthy diet** in order to reach different goals, such as: protection against chronic and degenerative diseases, promotion of health and longevity, social and environmental sustainability. The “Guidelines for a healthy diet” have been defined on the basis of the **Mediterranean dietary model**, which is well known as a model for combining well-being, health and sensory satisfaction.

The latest edition of the Guidelines (published in 2020) opens with a series of **tips on balancing nutrients and maintaining weight**:

- “Weigh yourself at least once a month, paying attention to any variations.
- Consult your doctor if you are overweight or underweight to assess your condition and carry out diagnostic tests.

- Keep your weight within the indicated limits or gradually bring it back to normal, with the help of specialists with adequate training in nutrition.
- Reduce energy 'intakes' in the case of overweight, by eating less or preferring low-calorie foods that produce a greater sense of satiety such as fruit and vegetables; increase energy 'outtakes' by engaging in more physical activity.
- Carry out regular physical activity: climb and descend stairs, go for a walk or do small household chores.
- Avoid drastic 'do-it-yourself' diets, which are always unbalanced in terms of nutrient intake (e.g. mono-food diets, or diets totally based on protein) which, if followed for long periods, can pose a health risk.
- Slim down by concentrating more on losing fat mass, rather than obsessing over the weight on the scale.
- Pay close attention, especially in adolescence, to extreme eating behaviours that often have as their goal the attainment of excessively low weights in relation to physical structure.
- Excessive attention to weight can be an alarm bell that should not be overlooked.
- Follow the indications of a specialist in the case of eating disorders, even when one has returned to one's ideal weight, because the latter is not always synonymous with actual recovery."

Reference: [INRAN](#), 2020

The "Guidelines for a Healthy Diet" also provide precise information on **body weight and body composition**.

According to the Guidelines, in men, the average adult body is made up of 80-85% lean mass (body fluids, muscles, skeleton, viscera, etc.) and 15-20% fat mass (adipose tissue). In women these percentages vary slightly, in fact fat mass varies between 20-30% of total weight. In children, on the other hand, the body is composed more of water and the percentage of fat is lower. Lean mass is an element that establishes the basic metabolism because it is the metabolically active mass. Increased energy consumption helps maintain correct body weight, which is why lean mass must be maintained and preserved through daily physical activity.



In the guidelines implemented by the government, guidance is also given on indices of body mass change, which is calculated from weight expressed in kg divided by height expressed in metres and squared (Kg/m²):

$$BMI = \text{Weight (Kg)} / \text{height (m}^2\text{)}$$

BMI is a very simple index to calculate, but unfortunately it is not a complete index, as it cannot provide exact information on the amount of fat mass or lean mass and cannot correctly classify certain categories of people. For example, a very muscular athlete may have the same BMI as an overweight person, because they have a highly developed muscle mass. In the case of pregnant or breastfeeding women, **BMI calculation should be considered with caution.**

The guidelines emphasise the importance of measuring body mass by **assessing other parameters, such as waist circumference**, an indispensable index for understanding the distribution of visceral fat. Waist circumference values above 102 in males and 88 in women are strongly associated with a risk of serious health problems, such as type 2 diabetes, metabolic syndrome and all other metabolic complications of obesity.

Another index is determined by the **ratio between waist and hip circumference**, which should be less than 0.90 in men and 0.85 in women. In fact, higher values can determine the risk of cardiovascular disease, diabetes and cancer.

The Italian government's guidelines on nutrition also provide **guidance on weight loss and eating disorders**. Various degrees of thinness are distinguished, the least extreme being classified as underweight, followed by moderate thinness and severe thinness. Extreme thinness can be the outcome of an eating disorder. These disorders constitute a wide range of psychiatric pathologies characterised by a problematic relationship with food. Anorexia, bulimia and uncontrolled eating disorders in general, although they are treated in the field of psychology, have a strong effect on the patient's nutritional status.

In respect of fake news, Government guidelines warn Italians about the **false beliefs regarding weight and nutrition from which to distance themselves**, including: water, food, cereals and legumes, sugars, salt, alcohol, diet, food in pregnancy, feeding and lactation, food and physical activity. More detailed information about fake news in relation to these issues is included in the toolkit section of this e-book.

c. North Macedonia

The most important **national legislation covering nutrition** in North Macedonia is the Law on Food Safety (Assembly of R. Macedonia, 2015) and the Law on Health (Assembly of R. Macedonia, 2012).

The **Law on Food Safety** outlines the **general principles and requirements for food safety** in Macedonia, including the safety and quality of food products, as well as the responsibilities of food businesses and government agencies to ensure food safety. In addition, the **Law on Health** sets out the legal framework for public health in North Macedonia, including regulations related to **food safety, food labelling, and nutrition**. The Law on Health also establishes the legal basis for the implementation of various public health programs, including those related to nutrition and healthy eating.

References:

[Law on Food Safety. Official Journal of Republic of Macedonia](#) (2015)

[Law on Health. Official Journal of Republic of Macedonia 37 \(16\)](#) (2012)

In addition, a number of **specific regulations and guidelines** relate to nutrition and healthy eating in North Macedonia, including those related to the fortification of food products with vitamins and minerals, food labelling requirements, and the promotion of healthy eating habits in schools and other public institutions. These regulations and guidelines are implemented by the **Ministry of Health and other relevant government agencies**.

In North Macedonia, several institutions are involved in regulating food and nutrition. The **Ministry of Health** is the primary institution responsible for public health, which includes regulating food and nutrition.

Other institutions involved in regulating food and nutrition in North Macedonia include:

- **Food and Veterinary Agency**, which is responsible for food safety and animal health and responsible for ensuring that food products are safe for consumption and meet the necessary regulatory requirements.
- **State Market Inspectorate**, a government agency responsible for inspecting and enforcing regulations related to food safety, including food labelling and the use of food additives.
- **National Institute of Public Health**, responsible for monitoring and evaluating the health status of the population, including nutrition-related issues.
- **Ministry of Agriculture, Forestry, and Water Economy**, which is responsible for regulating agriculture and food production in North Macedonia, including the implementation of programmes related to food fortification and food labelling.

A variety of **strategies related to nutrition** in North Macedonia aim at promoting healthy eating habits and at reducing the incidence of diet-related diseases. The most important strategic document is the National Nutrition Action Plan (2016-2025) developed by The Ministry of Health, and published on the World Health Organization database.



The **National Nutrition Action Plan (2016-2025)** outlines a range of strategies and interventions aimed at improving the nutritional status of the population. The plan includes measures to promote healthy eating habits, increase access to nutritious foods, and reduce the consumption of unhealthy foods. **Its main strategic goals are to reduce the cases of premature death and to significantly reduce the burden on health care deriving from nutrition, increased body weight and obesity, as well as all other forms of nutritional disorders among the population.** The plan bears in mind that **such phenomena are strongly influenced by social determinants of health and have a negative impact on well-being and quality of life.** This goal will be achieved by taking integrated, comprehensive action across a number of societal areas through a 'whole of Government' and 'health in all policies' approach.

Specifically, the National Nutrition Action Plan (2016-2025) seeks to address and offer **solutions in the following areas:**

- Unequal **access to adequate nutrition** throughout life and inequitable population distribution in respect of overweight, obesity and non-communicable nutrition-related diseases;
- **Provision of easy-to-understand information about food products** so that healthy choices can be made easily, while combating inadequate **knowledge, skills and competence about food and healthy eating**, which limits the population's ability to act on this information;
- The presence of unhealthy food in **key environments, such as schools, public institutions, catering facilities and retail trade;**

- The **pervasive marketing** of foods and beverages high in energy, saturated fat, trans fat, sugar or salt directed at children and the **inappropriate marketing of infant and young child nutritional foods**;
- The continued demand for **resources for the health and social care systems** to prioritise health promotion and disease prevention, in order to address nutrition challenges and nutrition-related diseases;
- The existence of a **mismatch between health goals and global, regional and local food trade policies**, which affects the **nutritional quality of the food** that is available and, ultimately, the provision of food to the population.

Aligned with the National Nutrition Action Plan (2016-2025),

- The Ministry of Health, in collaboration with other government agencies and NGOs, has implemented **various nutrition education programmes** aimed at promoting healthy eating habits among the population. These programmes are targeted at **different age groups** and include initiatives such as nutrition education in schools, community-based nutrition programs, and media campaigns promoting healthy eating.
- The government of North Macedonia has implemented mandatory **food fortification programmes for certain foods, such as wheat flour and salt**, with the aim of increasing the intake of essential vitamins and minerals. This is particularly important in areas where there is a high prevalence of **nutrient deficiencies**.
- The government of North Macedonia has introduced **mandatory food labelling** requirements to provide consumers with information about the nutritional content of food products. This includes information on the **energy, fat, sugar, and salt content** of food products, as well as information on **allergens**.
- The government has established a **nutrition surveillance system to monitor the nutritional status** of the population and to identify trends and changes in dietary habits over time. This system helps to **inform policy and programme development** related to nutrition.

References:

[Ministry of Health of North Macedonia](#)

[Guide for the protection of the population in the Republic of Macedonia](#)

[Food and Nutrition Action Plan in the Republic of Macedonia 2016-2025](#)

Given that the National Nutrition Action Plan (2016-2025), was adopted in 2016, it does not contain specific measures and programmes aimed at combating fake news regarding nutrition, as **“fake news” is a relatively recent phenomenon**. However, the plan contains a reference and several specific objectives which deal with promoting healthy food and habits. It also aims at working towards **promoting gender equality** and thus improving the effectiveness of the programmes, **by taking into account social, cultural and biological factors affecting the nutrition and health status of the population**.

However, North Macedonia is not immune to the “fake news” phenomenon. Due to an increased surge of fake news involving prominent doctors and public persons endorsing different food supplements in the social media, **in 2022 the Medical Chamber, as a professional association of all doctors of medicine, took action against products, preparations and methods that are marketed on the Internet**. In the advertisements and texts of such products, fictional statements or interviews with real doctors often appeared along with their photos. All of this was completely illegal.

It is expected that these issues will be addressed with the **new ICT strategy** which is still in the process of preparation.

d. Portugal

In Portugal, the General Directorate of Health (DGS) is responsible for the **“National Program for the Promotion of Healthy Eating, Food Wheel”** (Programa Nacional para a Promoção da Alimentação Saudável. Roda dos Alimentos, PNPAS). PNPAS is part of the eleven priority health programmes of the National Health Plan (Despacho no.6401/2016) of risk factors related to non-contagious diseases, in particular childhood obesity. The PNPAS articulates its strategies with different sectoral partners, from food producers to consumers, and takes into account different international guidelines at this level, namely those from the **European Commission, the World Health Organization and the European Agency for Food Safety**.

Reference: [Programa Nacional de Promoção da Alimentação Saudável](#)

The website includes, for instance, a “food wheel” indicating the ideal proportions of each food group. The wheel is adapted from the guide **“The new Food Wheel, a guide to everyday food choices”** (A nova Roda dos Alimentos, um guia para uma escolha alimentar diária) published in 2003 by the Consumer’s Institute of the Faculty of Nutrition and Food Science at the University of Porto.

Reference for PNPAS: [Roda dos Alimentos • PNPAS \(dgs.pt\)](#)

The PNPAS website also has a library section with **reports, news and manuals, within which a sub-section focuses on the Mediterranean diet.** This section provides access to various resources related to this dietary pattern. Examples include a comprehensive manual outlining the ten principles of the Mediterranean diet, a study examining adherence to this dietary pattern, and several informative guides on the subject. Notably, a manual published in 2016 describes and advocates the Mediterranean diet as a health-promoting eating pattern.

Reference: [Dieta Mediterrânica: Padrão alimentar promotor de saúde](#)

The PNPAS website also provides a **label decoder intended to assist the Portuguese population in interpreting nutrition labels while grocery shopping.** The process involves categorising the levels of fat, saturated fat, sugar, and salt, using a 3 colour-code system of red, yellow, and green. The recommendation is to prioritise the selection of foods and beverages primarily classified in the green category, consume with moderation those with one or more nutrients in the yellow category, and abstain from consuming those with one or more nutrients in the red category.

Reference: [Descodificador de Rótulos](#)

Related to PNPAS is the **Integrated Strategy for the Promotion of Healthy Eating** (Estratégia Integrada para a Promoção da Alimentação Saudável, EIPAS). The aim of EIPAS is the implementation of PNPAS measures by public Administrations in the provision of services (schools, hospitals, etc.) either directly or through private third parties. Follow-up and monitoring are carried out by the inter-ministerial Working Group, led by the DGS.

Reference: [EIPAS](#)

Lastly, with regard to nutrition and food, the Ministry of Health works in conjunction with other Ministries and entities, namely:

- **Direção Geral da Alimentação e Veterinária/Directorate-General for Food and Veterinary Affairs (DGAV)** defines, executes and evaluates food safety, animal protection and animal health, plant protection and phytosanitary policies. It is the National Veterinary and Phytosanitary Sanitary Authority, the National Authority for Veterinary Medicines and the Authority responsible for managing the Food Safety System (in Decreto Lei/ Decree Law No. 18/2014 of February 4, Art. 9, No. 1).

Reference: [Quem Somos – DGAV](#)

- INFARMED - **National Authority for Medicines and Health Products** is responsible for the certification of medication and food supplementation that requires a medical prescription.

Reference: [INFARMED – Autoridade Nacional do Medicamento e Produtos de Saúde, I.P – SNS](#)

Although the rules exist, campaigns on healthy food or healthy habits are not commonly visible in the streets or in the traditional media. And the projects that intend to contribute to fact-checking on nutrition end when the funding ends or the agenda changes. One example of a project that is constantly updated is Fact-checking in Think Nutrition.

Reference: [Fact-checking • Pensar Nutrição \(pensarnutricao.pt\)](#).

In Portugal, **Law n° 30/2019, of April 23**, introduces **restrictions on food advertising aimed at children under 16 years of age**, and prohibits the advertising of foods with a high energy value, salt content, sugar, saturated and trans fatty acids in pre-school, basic and secondary education establishments, as well as within a 100-metre radius of such schools.

Since 2007/2008, Portugal has implemented the **Childhood Obesity Surveillance Initiative (COSI) Portugal**, a surveillance system for the nutritional status of the school population between 6 and 8 years of age. COSI Portugal is part of a European system of child nutritional surveillance, coordinated by the World Health Organization in Europe, which produces comparable data from different European countries and allows for the monitoring of childhood obesity every 2-3 years. The collection of data from this surveillance system takes place in schools of the 1st cycle of basic education and is run by health professionals from the Regional Health Administrations.

The “Despacho n.º 8127/2021, de 17 de agosto” (Order No.8127/2021, of August 17 of 2021) establishes the rules to be taken into account in the preparation of menus and the sale of foodstuffs in buffets and vending machines in schools and continues decades of work on improving school meals in Portugal. This change in **food habits in schools** was not peacefully accepted by parents and students who claimed the right of freedom of choice and the right to have cakes and sugar candies available.



In 2018, the General Directorate of Health (DGS) published Circular n° 3097/DGE/2018, accompanied by the innovative “**Guidelines on Menus and School Cafeterias**”, which presents 40 proposals for vegetarian menus with respective technical descriptions, 15 proposals for Mediterranean menus with respective technical data sheets and more detailed guidelines on authorised foods, including foods intended mainly for vegetarian menus, and a very interesting proposal for an environmental approach, with guidelines on the most sustainable fish species.

In Portugal, information on nutrition and healthy eating is mainly provided by the **General Directorate of Health** (Direção Geral de Saúde, DGS), part of the Ministry of Health. In the last 3 years, the DGS has made an extra effort to regulate the food available in public administration spaces, such as **educational establishments, hospitals or nursing homes**. The strategy for healthy habits is published in different e-books with a strategy for each area, especially education. These publications alert to the **need to increase literacy regarding food and healthy habits and diets**.

Reference to a strategic vision on food in Portuguese schools: [a_alimentacao_escolar_em_portugal_-_uma_visao_estrategica.pdf \(mec.pt\)](#)

In the fight against fake news in Portugal, the most significant legislative initiative was the [Carta Portuguesa de Direitos Humanos na Era Digital](#), which came into force in May 2021. Although considered reductive and insufficient in its means and objectives, this Law 27/2021 has been a first step in strengthening the contract of trust between citizens and institutions in the digital public sphere.

e. Spain

In Spain, two Ministries have competences related to Nutrition: the **Ministry of Consumer Affairs**, responsible for government policies related to the protection and defence of consumer rights, and the **Ministry of Agriculture, Fisheries and Food**, responsible for food legislation and security regulations. These Ministries have developed several laws and regulations that aim to protect the public from false or misleading information related to nutrition.

References:

- Ministry of Consumer Affairs: [Ministerio de Consumo](#)
- Ministry of Agriculture: [Ministerio de Agricultura, Pesca y Alimentación \(mapa.gob.es\)](#)

Additionally, the **Spanish Agency for Food Safety and Nutrition (AESAN)** is responsible for ensuring food safety and promoting healthy nutrition habits. The agency provides guidelines and recommendations on nutrition and health, monitors and controls the advertising and labelling of food products and develops and implements strategic national plans.

Reference: [Aesan - Agencia Española de Seguridad Alimentaria y Nutrición](#)

- **Law 17/2011, of 5 July, on food safety and nutrition – the NAOS Strategy**

The NAOS Strategy (Nutrition, Physical Activity and Obesity Prevention) is a health strategy which, in line with the policies set out by international health organisations (such as the World Health Organisation and the European Union), aims to reverse the trend toward the prevalence of obesity by promoting healthy eating and physical activity. Since its launch in 2005, the NAOS Strategy has developed **actions or interventions, based on scientific evidence, in all those areas of society (family, education, business, health, work, community)** that promote and facilitate options for a varied and balanced diet and the practice of physical activity.

Although the initiatives developed through the NAOS Strategy target the entire population, **priority is given to those aimed at children, young people and the most disadvantaged population groups, with a focus on gender and the avoidance of inequalities:** an example is the PAOS Code of Self-Regulation of the Advertising of Food Products Directed at Minors. The NAOS Strategy was consolidated and promoted by Law 17/2011, of 5 July, on food safety and nutrition. The General Law

of Public Health, passed in 2011, establishes the principles of protection and promotion of, and prevention in health, including nutrition. **The law prohibits the dissemination of false or misleading information related to health, including nutrition, and establishes sanctions for violators.** One of the results of the strategy is that the sugar content of soft drinks decreased by 43% between 2005 and 2020 and that low and zero-calorie varieties account for about 60% of soft drinks marketed in Spain.

References:

- Strategy: [Estrategia NAOS](#)
- Legislation: [BOE-A-2011-11604 Ley 17/2011, de 5 de julio, de seguridad alimentaria y nutrición.](#)
- PAOS code: [Code of Self-Regulation of the Advertising of Food Products Directed at Minors](#)
- **National Strategy for Food Security and Nutrition in Spain**

The most recent National Strategy for Food Security and Nutrition in Spain was approved in 2020. This new strategy builds on the previous 2017 version and aims to promote healthy and sustainable food habits for the Spanish population, **with particular focus on vulnerable groups such as children, the elderly and low-income households.**

The 2020 strategy has **five main objectives**:

1. **To promote healthy and sustainable diets:** the strategy aims to promote healthy and sustainable diets, with an emphasis on reducing the consumption of unhealthy foods and increasing the consumption of **fruit, vegetables, and whole grains**. The government has launched campaigns to promote healthy eating habits and has implemented measures to improve the **quality of school meals**.
2. **To improve food safety:** the strategy aims to ensure the safety of the food supply chain, from production to consumption. The government has implemented measures to improve food safety standards, including the **control of food additives, contaminants, and allergens**.
3. **To promote sustainable food systems:** the strategy aims to promote sustainable food systems that respect the environment and contribute to mitigating climate change. The government has implemented measures to promote sustain-

nable agriculture, reduce food waste, and encourage the consumption of local and seasonal foods.

4. **To ensure food security and reduce food waste:** the strategy aims to ensure the availability and accessibility of sufficient, safe, and nutritious food for all. The government has implemented measures to **reduce food waste and redistribute surplus food to those in need.**
5. **To strengthen cooperation and coordination:** the strategy recognizes the importance of collaboration and coordination among different sectors and actors involved in the food system, including **government, civil society, academia, and the private sector.** The government has established partnerships with these actors to promote the implementation of the strategy and achieve its objectives.

Overall, the 2020 National Strategy for Food Security and Nutrition in Spain is a **comprehensive plan that seeks to promote healthy and sustainable food habits, reduce food insecurity, and ensure the safety and sustainability of the food supply chain.**

As announced in October 2021, the government is working on a new strategy, the National Strategy for Food Security and Nutrition. This new strategy will take into account new knowledge and developments on the subject at national and international level, current environmental and climate change policy objectives, and the digitization process, among others.

Reference (press release): [Garzón anuncia la puesta en marcha de la Estrategia Nacional de Seguridad Alimentaria y Nutrición | Ministerio de Consumo](#)

The interpretation of ingredients and nutritional information available on products may be difficult, biased and influenced by marketing campaigns. To avoid this, **the Spanish government, in line with other European countries, has promoted a simple and visible nutrition labelling system on foods** to provide users with clearer nutritional information and help consumers make the healthiest choice. **This system is called Nutri-Score.** More information will be provided in the section covering good practices or recommendations.



In line with these strategies and to **avoid the influence of large marketing campaigns on the younger population**, the government is working on a new Royal Decree to prohibit the advertising of sweets, ice cream and other products rich in sugars and fats considered harmful by the World Health Organisation (WHO) to children (under 16 years of age), especially on **television and the social media**.

The Royal Decree intends to regulate the advertising and commercial communication of food and beverages aimed at children in Spain. The Decree establishes the criteria that define the advertising of food and beverages aimed at children, as well as the prohibitions and limitations that companies carrying out this type of advertising must comply with. In addition, the Decree promotes co-regulation agreements and codes of conduct with self-regulatory bodies, economic operators, audio-visual communication service providers, organisations for the defence of children's rights and the Council of Consumers and Users.

This legislation is currently under development but a draft version has already been published. This document aims to protect children and young people from advertising that may harm their health or morals by **regulating advertising of foods and beverages that exceed the limits established in the nutrient profiles recommended by the WHO**. Even though the draft does not specify which types of food and beverages will be regulated, it will establish criteria to define **advertising aimed at children**.

Whereas in Spain children are defined as minors under 16 years of age, at the European level the age up to which the industry has committed not to target its marketing and advertising actions is 12 years, extendable to 13 in 2025.

Reference (draft version of the law): [Borrador del Real Decreto sobre regulación de la publicidad de alimentos y bebidas dirigida al público infantil](#)

f. Recommendations for a global strategy based on national legislation

Although there are regulations and strategies to promote health and nutrition among the overall population in different countries, the process of documentation for the NutriwellB project has revealed there are very few specific references from public administrations on how fake news is affecting nutrition of the whole population or youngsters. Nevertheless, the existing legislation frames the context for a global strategy on nutrition and well-being fact-checking. Based on the national legislation in Germany, Italy, Macedonia, Portugal and Spain, the main aspects of such a strategy are the following:

- Centralised initiatives are necessary: at least one Ministry should be involved in the design of a global strategy to promote fact-checking for nutrition, well-being and a healthy diet.
- Coordination and collaboration with several stakeholders is a key asset if the strategy is to be effective. Representatives of scientific societies in the nutritional and medical fields, associations of doctors, dieticians, biologists, producers and consumers should all be involved.
- The fight against fake news and misinformation should be included in the strategy to promote nutrition and well-being. To achieve this, journalists, communication agencies and social media influencers should be involved.
- Although this global strategy should concern the whole population, specific initiatives seem crucial concerning children, at least those under 16 years old.

In the selected countries, there is a gap in legislation between initiatives to promote nutrition and a healthy diet, on the one hand, and the fight against fake news, on the other. Nevertheless, the lack of knowledge in this area is covered by campaigns and initiatives (private and public), as explained in the following section.

4. Good practices in fact-checking of online content on nutrition and wellbeing

This section includes specific campaigns or initiatives launched by professional organisations and public administrations detected through research by the different partners of the NutriwellB project. After an analysis of several good practices at the EU level, initiatives in Germany, Italy, Macedonia, Portugal and Spain are presented. The promoters of these initiatives include public administrations at the central and the regional levels, nutrition societies, private foundations, communication agencies, universities and research centres. The text includes several good practices for each selected country.

For each good practice, the following information is introduced: the name of the promoter, the name of the project/event, the goal of the project, the main results and a link to the project. These practices launched by the various organisations contribute to fact-checking in nutrition and well-being. They are significant in raising awareness among citizens about the risks of fake news regarding food and nutrition.

a. European funding

Best-ReMaP Joint Action on implementation of validated best practices in nutrition

The Best-ReMaP Joint Action is an ongoing project funded by the European Commission that started in 2020 and will finish in September-2023 (a total of 36 months). It encourages public support for healthy foods, defined as those with reduced salt, sugars and processed fats. Through the detection and replication of experiences that are deemed to be best practices in areas such as “food reformulation, framing of food marketing and public procurement of healthy food in public settings”, the project aims at widening the offer of healthy foods in supermarkets and reducing online commercialization of ultra-processed foods. To this end, the project implements a monitoring system that can help reformulate information on ultra-processed foods while seeking to establish a catalogue of healthy foods to provide national policy recommendations. The main priority of this

project, which has a 6 million Euro budget, is to promote health, prevent disease and foster environments supporting a healthy lifestyle.

Reference: [Health Programme Database - European Commission \(europa.eu\)](#)

From Farm to Fork Project, by the European Commission

From Farm to Fork is a Project led by the EU Commission which aims to transform our dietary systems in terms of competitive sustainability and the protection of human and planetary health. The main proposal is to provide universal access to a healthy diet from a healthy planet. Some of the issues that will be challenged are, for instance, the use of pesticides in agriculture, aiming at a reduction of the presence of hazardous pesticides, and of nutrient losses by at least 50%, promoting organic farming or fighting against antimicrobial resistance by 2030. During the transition some actions will be taken regarding a healthy food environment, such as food labelling, to empower consumers to choose healthy and sustainable diets. 10 billion Euros will be invested under Horizon Europe in research and innovation on issues related to food, bio economy, natural resources, agriculture, fisheries, aquaculture and the environment.

Reference: [European Commission: From farm to fork](#)

AU-EU Combatting all forms of malnutrition

This programme, included in the From Farm to Fork Project, is linked to Horizon 2020, and calls for new research on innovations in the field of nutrition improvement through understanding nutritional needs, aspirations, behaviours and preferences by consumers who face dietary restrictions in terms of quality due to low socioeconomic status. Furthermore, this strategy calls for the EU to “partner with Africa to maximise the benefits of the green transition and minimise threats to the environment”. An important concern is the number of rapidly increasing overweight and obese people in Europe and Africa, which shows no signs of slowing.

In relation to good practices, the main aspects of this project are, for instance, mapping and monitoring dietary patterns, the contribution to standardised metrics and tools to measure the food environment (food accessibility, media coverage, etc.), or the provision of a scientific basis for sharing food knowledge and developing dietary advice. The total budget of this programme is 11 million Euros.

Reference: [European Commission: Combatting all forms of malnutrition](#)

EU platform for diet, physical activity and health: Database

In the area of health and the digital environment, the EU has established a database on food, physical activity and health. This platform collects information on activities carried out since 2004, involving various stakeholders such as manufacturers, caterers, consumer organisations, public health NGOs and scientific associations. The platform is aligned with the European plan to promote healthy lifestyles in addressing key areas such as:

- Reducing the intake of salt, saturated fats, trans fats and added sugars
- Increasing the consumption of fruit and vegetables
- Reducing the exposure to and impact on children of food marketing
- Increasing regular physical activity and reducing sedentary behaviour
- Increasing rates of exclusive and continued breastfeeding
- Reducing inequalities related to diet and physical activity

Reference: [EU platform for diet, physical activity and health: Database \(europa.eu\)](https://europa.eu/eu-portal/db/eu-platform-for-diet-physical-activity-and-health-database)

NUDGE-IT (European Commission-funded FP7)

NUDGE-IT was a project funded by the European Commission-FP7 with the aim of reducing obesity by providing information on healthy food choices and exploring related aspects such as emotions, stress and economics. Dozens of scientists from 16 institutions across six European countries, the US and New Zealand developed innovative tools such as mobile applications for a better understanding of decision-making in food choice and the building of predictive models to improve public health policy. This project lasted for four years (2014-2018) and had an overall budget of almost 13 million EUR.

Reference: [Nudge-it](#)

Photovoice study of the food environment, HHH Project (ERC Funding)

This project is one of the various initiatives of the Heart Health Hoods (HHH), led by University of Alcalá de Henares (UAH), in Spain. It consists of a participatory-action research strategy to improve the understanding and knowledge of the role of the local food environment in relation to diet and obesity in two of the neighbourhoods with the most vulnerable socioeconomic and health indicators in Madrid. A group of women and another of men were asked to take photographs of the food environment in their own neighbourhoods and to discuss and analyse in groups the results. As a result, six main topics and issues were considered as outstanding among the pictures (cultural diversity, ageing, poverty and crisis, food trade, social relationships and eating in moderation). This

project is funded as part of the HHH initiative, whose budget is 1,5 million euros, provided by the European Research Council (ERC).

Reference: [Heart Healthy Hoods Project](#)

b. Germany

Tips for healthy food choices: IN FORM, by the German federal Government

In 2008, the German federal Government initiated IN FORM, a national action plan aimed at promoting healthy eating and increased physical activity. The IN FORM initiative aims to promote a healthy and balanced diet for the German population, so that children grow up healthier, adults live healthier lives and everyone benefits from a better quality of life. The initiative includes information on healthy eating, cooking, and shopping, as well as advice on how to make healthy food choices.

The initiative has contributed to increased awareness of the importance of a healthy diet and has provided consumers with practical tools and advice on how to make healthy food choices. As a federal initiative, it provides the “We are IN FORM” award to projects involved in the area of healthy nutrition.

Reference: [IN FORM – Germany’s national initiative to promote healthy diets and physical activity](#)

ESSEN KNOWLEDGE Cooking & Training Centre

The “ESSEN KNOWLEDGE Cooking & Training Centre” is a private foundation, whose work is among the projects that have received the “We are IN FORM” logo. Based in Berlin, the centre offers a diverse range of programmes focused on nutrition education, which is accessible to people throughout Germany via its digital offerings.

One such offering includes interactive cooking courses that can be conducted both in-person and online through a live stream. These courses are open to children, families, local residents, project partners, ESSEN WISSEN ambassadors, and other interested individuals. Digital courses can also supplement in-person classrooms or be used to encourage young people to cook at home with their families.

The centre also conducts seminars, training courses, and workshops on various topics related to nutritional education. These sessions can be tailored to meet specific needs and are based on collaborative discussions. Additionally, the centre produces training and presentation videos, recipe videos, and food photos that delve deeper into crucial nutritional topics.

The centre's work, primarily focused on nutritional education, aligns with the foundation's core objective. As the focus of the centre is on nutritional education, it addresses misinformation and myths related to food and nutrition in the training sessions, seminars, and workshops. The centre emphasises the importance of relying on credible sources for nutritional information and encourages critical thinking when evaluating nutrition-related claims. By promoting accurate information and evidence-based nutrition education, the centre indirectly combats the spread of fake news on food and nutrition.

Reference: [IN FORM::ESSEN WISSEN Koch- & Schulungszentrum](#)

Tested IN FORM Recipes, by the German Nutrition Society

The German Nutrition Society (DGE) was founded in 1953 and is actively involved in various projects in the field of nutrition. It has certified several health information providers who meet quality standards. This helps consumers to identify trustworthy sources of health information.

One of the projects the DGE is involved in is the "Geprüfte IN FORM-Rezepte" or in English "Tested IN FORM Recipes". The project tests recipes according to a catalogue of criteria developed by the DGE. Suitable recipes and dishes are marked with the logo "recommended by IN FORM in cooperation with the DGE" and provide consumers with guidance. In addition to the logo, accompanying nutrition tips show why the recipes and dishes are recommended. The accompanying texts also give tips on how dishes can be made more nutritionally beneficial by changing the ingredients or the preparation.

"Tested IN FORM Recipes" is a valuable initiative that can help promote fact-checking and raise awareness about the risks of fake news on food and nutrition. By following the "recommended by IN FORM in cooperation with the DGE" logo and accompanying nutrition tips, consumers can easily identify which recipes and dishes are healthy and suitable for their dietary needs. This can help them make informed choices and avoid falling prey to false or misleading information about nutrition.

Furthermore, the project's accompanying texts offer practical tips on how to make dishes more nutritionally beneficial by changing ingredients or preparation methods. This not only helps consumers make healthier choices but also encourages them to experiment with new ingredients and cooking techniques.

Overall, the "Tested IN FORM Recipes" project can raise awareness about the risks of fake news on food and nutrition by providing reliable information and guidance to consumers, which can help them make healthier and more informed choices.

References:

- [IN FORM Project / DGE:Tested IN FORM Recipes](#)
- [DGE Nutritional recommendations](#)
- [DGE Quality Standards for Meals in Schools \(schuleplusessen.de\)](#)

Super(?)foods and Supplements – Risky or Healthy?, by the Federal Institute for Risk Assessment

The Federal Institute for Risk Assessment hosts various event formats on consumer health protection topics to facilitate an interactive exchange among participants from science, politics, business, associations, NGOs, and the general public. These events can be public, specialist public, or non-public depending on the topic under discussion.

One of the events that greatly raised public awareness about food and nutrition was the two-day event “Super(?)foods and Supplements – Risky or Healthy?” The event took place in a hybrid format on 30 June 2022 and 1 July 2022 at the BfR premises in Berlin-Marienfelde as well as online.

The purpose of the event was to discuss and present scientific assessments and regulatory measures regarding foods marketed as “superfoods” in the context of consumer health protection. The label “superfood” typically implies positive health effects for consumers, and it is often used to promote plant-based foods such as fruits, berries, seeds, and vegetables that are naturally abundant in vitamins, minerals, and secondary plant compounds. However, certain foods marketed under this label, especially those in concentrated form, may also pose health risks.

Reference: [30.06.2022: Super\(?\)foods and Supplements – Risky or Healthy? - 2022 - Archive \(bfr-akademie.de\)](#)

Online information and resources on health and eating disorders, by the Federal Centre for Health Education

Among other tasks, the Federal Centre for Health Education (BZgA) is working on how to deal with eating disorders, such as bulimia. This eating disorder occurs predominantly in later adolescence and young adulthood and the majority of those affected are female. However, it is likely that more boys and men suffer from the disease than is known. The number of unreported cases is estimated to be high because males with mental disorders seek medical help less often than women. In order to raise public awareness about eating disorders and help more young people be more active in their everyday lives, the BZgA offers two internet portals.

- **Tips for a sustainable lifestyle**

This first portal offers scientifically sound information and tips for everyday life on the topics of exercise, nutrition, relaxation, sleep, and media use. It also provides teaching materials for schools and professional information on the quality assurance of measures and programmes to prevent obesity.

Reference: [Willkommen auf Übergewicht vorbeugen - BZgA: Übergewicht vorbeugen \(uebergewicht-vorbeugen.de\)](http://www.willkommen-auf-uebergewicht-vorbeugen.de)

- **Tips to prevent eating disorders**

This second portal provides information on eating disorders. The aim is that people with eating disorders seek professional help as early as possible. Affected individuals can contact BZgA's anonymous telephone advice service directly and receive specific help in finding suitable professional support.

Reference: [Esstörungen Startseite: BzGA Esstörungen \(bzga-essstoerungen.de\)](http://www.esstoerungen.de)

c. **Italy**

Educazione alla corretta alimentazione (Education for a correct diet), by the Italian Ministry of Health

The Italian Ministry of Health promotes education in nutrition and healthy food. Through its webpage, the Ministry disseminates good practices for a healthy lifestyle and proper nutrition. Education regarding a healthy and correct diet contributes to maintaining good health and preventing disease. The main goals are:

- Reformulating a teaching methodology based on an experimental, systemic and constructivist approach.
- Gaining knowledge about nutrition and the composition and origin of food.
- Turning learning into a process in which students get involved.
- Conciliation between school and family.
- Promoting interactivity and the easy dissemination of teaching material through multimedia tools.

Reference: [Educazione alla corretta alimentazione.](http://www.educazioneallaalimentazione.it)

Good practice in nutrition, by the Council for Agricultural Research and Analysis of Agricultural Economics (CREA)

The CREA Food and Nutrition Research Centre promotes research, training and dissemination activities on dieting and the prevention of the risks related to malnutrition habits.

Research in this field aims to study the relationships between lifestyle, physical activity, dieting and health in order to clarify the links between dietary habits and diseases. It is focused particularly on the physiological aspects and molecular mechanisms of a state of well-being resulting from good nutrition.

The population studies carried out principally consist of surveys assessing dietary adequacy regarding energy and nutrients, as well as environmental impact and exposure to harmful chemicals. The aim of these studies is to catch policy makers' attention and constitute tools to produce consensus documents such as the Guidelines for Healthy Eating.

Reference: [Notizie - Alimenti e Nutrizione - CREA](#)

Fake News on Nutrition, by Yakult Italia and Osservatorio Senior

Yakult Italia, together with Osservatorio Senior, proposes a "Fake News on Nutrition" column whose aim is to educate the over-55s in a critical attitude towards all the news circulating on the web regarding nutrition and health. Yakult Italia has offered information about nutrition and health for more than ten years, and it now proposes a new column: #FakeNewsOnNutrition, which provides an additional source of criticism for the over-55s, who, in spite of having their own cultural background and experiences, have to deal with a daily barrage of misinformation regarding, for instance, miracle diets.

Reference: [#Fake News sull'Alimentazione - Osservatorio Senior](#)

Nutripedia - InformaTI per crescere (Inform yourself to grow), by the Italian Institute and Edelman

Among other initiatives, the Italian Institute developed the project "Nutripedia - InformaTI per crescere" in collaboration with a large communication firm, Edelman, and a panel of experts in paediatrics, gynaecology, and nutrition from RIMMI (Inter-company Milan Infant Motherhood Network). The main objective of Nutripedia is to provide a platform where evidence-based data can help users to combat fake news in pregnancy and perinatal nutrition. The website's content is enriched by mothers' and fathers' blogs to provide a more personal view, as well as a Facebook page. Recently, Nutripedia has developed an app with the first chatbot dedicated to child nutrition.

One of the advantages of this approach includes the complementarity between providing general evidence-based information and the answering of more individual concerns through the chatbot. In addition, the coexistence of information from scientists and parents provides a holistic and multidisciplinary view of nutrition and provides a wider means to debunk the myths and fake news associated with nutrition. Finally, both the blogs and social media promote the creation of a virtual community where parents can support each other at a time when doubts and insecurities often undermine their experience.

The initiative has been a great success in terms of dissemination, reaching 220.000 total views of the online articles on fake news, 135.000 views of the blog posts, over 7.3 M users on Facebook, 1 million on Instagram and 716.000 on Twitter by 2021 (Verduci et al., 2021). It has been recognized as a good practice by the Italian Ministry of Health, as well as by the Italian Association of Paediatrics, and, in 2019, it received the Assessoriel Non-profit Communication Award for the P.R. Campaign carried out in Italy.

Reference: [NutriPedia](#)

Fake News Salute (*Fake News on Health*, in English), by Educazione Nutrizionale Grana Padano (ENGP)

The national education programme promoted by GRANA PADANO aims to inform people on nutrition and a healthy lifestyle, and to combat fake news and hoaxes which transmit incorrect information. This project is coordinated by a scientific committee which includes medical specialists, dieticians and communication experts who create daily content for educational purposes. Its aim is to offer information regarding a balanced nutrition and lifestyle, for professionals and citizens.

Reference: [Informazione e Disinformazione - Fake News Salute | Educazione Nutrizionale Grana Padano](#)

d. North Macedonia

In North Macedonia there have not been many initiatives which provide tools or resources for fact-checking online content on nutrition and well-being. However, there are initiatives from public organisations which promote free and reliable access to information online. A number of private organisations, such as associations of journalists and think-tanks, provide tools for fact-checking online content of a general nature, but mainly related to politics. In addition, there are several initiatives in North Macedonia aimed at promoting fact-checking and ensuring the accuracy of online content.

The National Campaign for Healthy Eating, by the Ministry of Health

The National Campaign for Healthy Eating in North Macedonia is a public health initiative aimed at promoting healthy eating habits and reducing the prevalence of diet-related diseases. The campaign is led by the Ministry of Health and it is implemented in collaboration with other government agencies, as well as non-governmental organisations and private sector partners.

The campaign seeks to raise awareness of the importance of healthy eating and to provide information and resources to help individuals make healthier food choices. It emphasises the consumption of fruit, vegetables, whole grains, lean proteins, and low-fat dairy products, while limiting the intake of saturated and trans fats, added sugars, and sodium.

The National Campaign for Healthy Eating uses a variety of communication channels to reach its target audience, including television and radio advertisements, billboards, posters, brochures, the social media, and community events. It also partners with schools, workplaces, and healthcare facilities to promote healthy eating habits in these environments.

The campaign has been ongoing since 2017 and has achieved some success in increasing public awareness and knowledge about healthy eating habits. However, there is still much work to be done to improve the dietary habits of the population and reduce the burden of diet-related diseases in North Macedonia.

Reference: [Министерство за Здравство](#)

National Guidelines for Healthy Eating, by the Ministry of Health

The guidelines for the nutrition of the population present recommendations for the components of a diet that would contribute to the health benefits of the population. Recommendations are evidence-based. The purpose of the Guidelines is to improve the health of the general population in the country, as well as the health of future generations, through the promotion of healthy eating and physical activity habits, with the aim that such habits become rules and norms for all people. The recommendations are intended for healthy people, aged over 2 years.

Reference: [Водич за исхрана на населението во Република Македонија – Министерство за Здравство](#)

Vistinometar, by the Metamorphosis Foundation

The Metamorphosis Foundation is a non-governmental organisation in North Macedonia that promotes media literacy and fact-checking. They offer workshops and training on fact-checking and also develop digital tools to help verify the credibility of online content.

The Metamorphosis Foundation together with Facebook started a campaign called Vistinometar in North Macedonia. As part of its fight against misinformation, Facebook is collaborating with independent third-party fact-checkers around the world who review and rate the accuracy of content. One of them is the Metamorphosis Foundation.

Reference: [Вистиномер](#)

e. Portugal

Programa Nacional para a Promoção de alimentação saudável. Blog O Nutrimento, by the Health National Service of the Portuguese Government

This Blog publishes news about healthy food, regulation for food marketing for children, taxes on basic food, along with recommendations of the WHO. The aim is to promote the exchange of information, ideas, and the debate on current issues related to food, the dissemination of good practices and research on this topic. The blog was created before 2020 and posts twice a month.

Reference: [Nutrimento](#)

Q&A on a healthy diet, by the National Health Service of the Portuguese Government

The Website of the National Health Service dedicated to a healthy diet includes about 30 questions and answers about healthy food habits such as: What does healthy eating mean? How many calories do I need per day? What should the children's diet be? What should I do to lose weight? What is the Mediterranean diet? What are the benefits of the simple Mediterranean diet? An example of the information is the following:

Q: How many calories do I need per day?

A: The average energy values advised for healthy adults vary between 1800 and 2500 calories, depending on each person's lifestyle, especially the caloric expenditure in physical activity. In women the average values vary between 1500 and 1800 calories and in men these values can vary between 2000 and 2500 calories.

Reference: [Alimentação Saudável](#)

Desmistificar Com Ciência (Demystifying with science), by the Faculty of Medicine of Lisbon University - Laboratory of Nutrition

Demystifying with science is an e-book published in 2020 in Portuguese, which includes questions and answers about healthy eating and dismantles myths about food. It also includes a list of bibliographic references used in the answers.

Reference: [Desmistificar com Ciência](#)

Pensar nutrição (Think nutrition), by the Faculty of Nutrition and Food Sciences of the University of Oporto (FCNAUP)

The site is a space for critical reflection on the major topics of nutrition by faculty, researchers, alumni and guests of FCNAUP. According to the Website: “This is also a space to combat misinformation. Nutritional misinformation is now a major public health problem worldwide, leading to wrong food choices by millions of people, threatening human health and the health of the planet. Nothing is more important than the fact that each country has a network of secure health information sites. Pensar Nutrição intends to be one of those spaces for information based on transparent and impartial scientific evidence in the area of food and nutrition”.

Reference: [Pensar Nutrição • Pensar Nutrição \(pensarnutricao.pt\)](#)

The site includes a fact-checking project. Through FCNAUP professors, researchers and alumni, the project proposes a critical analysis of some selected facts in the field of nutrition. The nutritional “fact-checking” texts of “Pensar Nutrição” are structured as follows:

- Brief framework and central issue to be addressed as a result of recent news.
- Analysis of the fact(s) based on scientific evidence.
- Final verdict (brief description of conclusion) based on a ranking system.

The final verdict is based on a classification system with three different categories: “True”, “Inaccurate” and “False”. In the Website, for instance, we can find the final verdict on the relationship between vegetarianism and coronary heart disease.

Reference: [fact-checking • Pensar Nutrição \(pensarnutricao.pt\)](#)

Online resources (e-book, factsheets, guidelines), by the Portuguese Nutrition Association

The Association offers a variety of digital materials to provide accurate information to the Portuguese population, such as two e-books on Nutrition, fact sheets and guides about specific food. It also contributes to developing community programmes (including one on sustainable food), giving access to posters, food recipes, pedagogical games and flyers.

Reference: [Associação Portuguesa de Nutrição](#)

Campaign “1 Portion of vegetables per day”, by the Portuguese Nutrition Association

The Portuguese Association of Nutrition (APN) has prepared a campaign to promote the consumption of vegetables, called “1 Portion of vegetables per day”, as part of the celebrations of the International Year of Pulses, promoted by the FAO in 2016. With the aim of promoting the consumption of 1 portion of vegetables per day, the APN developed a number of materials to support this initiative, such as: the e-book “Leguminosa a leguminosa, encha o seu prato de saúde” (“Vegetable to vegetable fill your plate with health”), or the poster “1 vegetable + 1 (famous) Chef + 1 Nutritionist + 1 recipe = + health”.

The results of the first five months of the campaign are presented in the following video: [Campanha “Uma porção de leguminosas por dia”](#)

Reference: [LEGUMINOSA A LEGUMINOSA, ENCHAO SEU PRATO DE SAÚDE](#)

f. Spain

No seas presa de la talla (Don’t fall prey to size) (2020), by the Ministry of Health, Consumption and Social Welfare

The Young Women’s Federation (Federación Mujeres Jóvenes) has undertaken a significant project since 2000, focusing on actions and awareness-raising in the realm of food-related issues. With funding from the Ministry of Health, Consumption and Social Welfare, they have consistently worked towards creating a positive impact in this field.

The campaign aims to raise awareness about the risks of pursuing unrealistic beauty standards and to encourage young people (especially females) to appreciate their bodies regardless of their size or shape. It emphasises the importance of maintaining a healthy and balanced diet, engaging in regular physical activity, and avoiding harmful practices such as restrictive diets or excessive exercise. They believe that it is necessary to work with young people to develop a critical spirit in view of the amount of information about ideal beauty standards and to prevent related health and mental issues.

As part of the campaign, they run a free counselling service on healthy eating on their website, with experts on nutrition and psychology focused on young women.

In 2020, they organised the I Meeting of Experts in Eating Behaviour, a round-table with 5 female experts on nutrition and eating disorders. The following topics were discussed: the current situation regarding the prevention of eating disorders among young women; assessment of the impact of the social networks, the imposition of beauty and social norms on the development of eating disorders; and finally, the sharing of proposals on how to work and apply recommendations with a gender perspective in the treatment of eating disorders.

Reference: [No seas presa de la talla - Federación Mujeres Jóvenes](#)

Initiatives from regional governments

- **Online resources on myths, falsehoods & realities about food & nutrition, Regional Madrid Government**

The Region of Madrid, through the health section of its communication portal, publishes accurate information and articles with advice and recommendations on how to follow healthy lifestyle habits both at home and at work.

They claim that information reaching the public from inappropriate and sometimes malicious sources can lead to serious health problems. This is why it is important for verified information to be centralised in a single official portal.

Some of the articles about nutritional hoaxes and well-being habits are the following:

- Food and nutrition myths, falsehoods and realities: [Mitos, falsedades y realidades en alimentación y nutrición | Comunidad de Madrid](#)

- Myths and truths about nutrition in sport: [Mitos y verdades relacionados con la alimentación en el deporte | Comunidad de Madrid](#)

- Healthy habits at work: [Hábitos saludables en el trabajo | Comunidad de Madrid](#)

- Enquiry service about nutrition and postural hygiene: [El Servicio de Prevención del SUMMA I I2 ofrece consultas de Nutrición e higiene postural | Comunidad de Madrid](#)

Reference: [Salud | Comunidad de Madrid](#)

- **Petits canvis per menjar millor (Small changes to eat better), Catalanian Regional Government**

This project offers a food guide with advice in terms of eating and healthy diets. The initiative was promoted by the Catalan Public Health Agency and provides a full 84 page guide relating to healthy eating and information regarding the quality of different products such as fresh vegetables or ultra-processed food. In the PDF where information is provided, mention is also made to some institutions offering extra information, such as the Catalan Association of Food Sciences or the group of Health Education and health promotion (PAPPS) in the Spanish Society of Family and Community Medicine (SemFYC).

Reference: [Petits canvis per menjar millor](#)

#EynZeroBulos (Zero Hoaxes), by the Spanish Society of Endocrinology and Nutrition

The Spanish Society of Endocrinology and Nutrition (SEEN) is regarded as an esteemed scientific community, composed of a diverse group of experts specialising in the fields of endocrinology, nutrition and metabolism. With a steadfast commitment to progress, SEEN's primary mission revolves around nurturing the advancement of knowledge and cultivating widespread awareness in these specialised domains.

In order to bring their knowledge closer to society, in 2021 they launched the campaign #EynZeroBulos, spearheaded through various social media channels. The main objective was to debunk hoaxes in these areas and provide general and easily applicable advice to identify those hoaxes. Recognizing the significance of accurate information in making informed decisions regarding health and well-being, SEEN has endeavoured to provide the general public with practical and accessible tools to identify and counteract the spread of hoaxes. By offering easy-to-implement tips and reliable resources, they aim to empower individuals to discern fact from fiction and navigate the vast landscape of available information with confidence and clarity.

Reference: [SEEN](#)

Maldita alimentación (Damn Food), by the Maldita.Es Foundation

Created by journalists in 2018, the Maldita.es foundation aims to provide clear, data-driven information so that citizens can make informed decisions. Their most popular initiative is "Maldito Buló" (Damn Hoax), which aims to improve people's digital formation by debunking popular hoaxes on social media. It has a very broad scope, focusing on political, social or scientific issues, and also has a section dedicated to the misconceptions surrounding food and nutrition.

One of their initiatives is called "Maldita Alimentación", which has the ultimate goal of allowing everyone, on the basis of sound information, to make the choices that they

consider to be most appropriate for their diet and, ultimately, for their health. To achieve this, they provide verified information on various topics, from unnecessary weight-loss diets to the safest way to preserve food, debunking hoaxes and myths and answering all the questions users ask them about food.

Maldita Alimentación offers a website where one can find articles and videos about food safety and conservation, myths and hoaxes, healthy eating, nutritional components and properties, and diets and slimming. It also has a Q&A service, with an online consultation area where visitors can see other users' questions and ask their own. In addition, they offer a verification service through Whatsapp, making it really accessible and usable for young people.

Reference: [Maldita Alimentación - Periodismo para que no te la cuelen](#)

Asociación “5 al Día” (“5 a day” Association)

The Association for the Promotion of Fruit and Vegetable Consumption ‘5 a day’, founded in 2000, is a non-profit nationwide association promoting the consumption of fresh fruits and vegetables, as well as the practice of physical activity and a healthy lifestyle. Its board of directors includes representatives of companies from the fruit and vegetable sector. Its members are democratically elected at the general assembly, which is composed of more than 600 associates. Its main objectives are to:

1. Increase the consumption of fruit and vegetables among the Spanish population
2. Promote healthy eating habits
3. Inform about the benefits of daily consumption of fruit and vegetables, with special attention to children and young people as future consumers
4. Provide education on healthy lifestyles and food environments in order to reduce the risk of obesity, particularly in children and young people

The main goal of the association is to promote the consumption of at least 5 servings of fresh, whole fruit and vegetables daily, preferably locally sourced and in season, as part of a healthy diet and active lifestyle.

Reference: [Saldia](#)

#SaludsinBulos (#HealthWithnoHoaxes)

#SaludsinBulos aims to combat health hoaxes on the internet and social networks and contribute to the existence of truthful and reliable information online. It relies on

the collaboration of communication professionals, healthcare providers, and agreements with more than fifty scientific societies.

- **The Guide on Food Misinformation, by #SaludsinBulos**

The Guide on Food Misinformation is a free manual that compiles the most widespread myths and false beliefs about nutrition, supported by scientific evidence from various food experts.

Reference: [I Guía de los Bulos en Alimentación](#)

- **Miracle Diets: Promises and Risks, by the General Council of Official Colleges of Dietitians-Nutritionists and #SaludsinBulos**

In May 2023, the General Council of Official Colleges of Dietitians-Nutritionists (CGCODN) and #SaludsinBulos published the report “Miracle Diets: Promises and Risks”. This work warns about the danger to health of miracle diets which promote nutritional imbalances and which are also unsustainable. The report also recommends how to lose weight safely.

Reference: [Presentación sobre alimentación y salud \(saludsinbulos.com\)](#)

g. Recommendations for a global strategy based on good practices

While there is little connection in international initiatives and national legislations between fact-checking and the promotion of nutrition and well-being, several good practices work together on both issues. Those good practices give orientation on how to build a global strategy on nutrition and well-being fact-checking. Based on good practices in the EU, Germany, Italy, North Macedonia, Portugal and Spain, the main aspects of such a strategy are as follows:

- Stable budgetary and funding schemes are necessary to support initiatives and achieve long term results. International programmes can work alongside national schemes.
- The coordination and involvement of stakeholders with different profiles are fundamental for the design and the implementation of good practices. This coordination should include central, regional and municipal governments, nutritionist associations, research centres, university departments, influencers, journalists, school teachers and families.

- Even though some good practices are supported by the private sector, much effort is still needed from private companies. Their role can be important, as long as they waive any commercial interest. The priority should be given to the social and personal benefits of nutrition and well-being, in terms of health.
- Access to information through online content should be complemented by access to information through printed content, in different formats and languages, to reach all social groups, including international migrants and the elderly, who might be more affected by the digital gap. Promoters of good practices might consider developing accessible information for vulnerable groups who are unable to read, for medical or other reasons. To reach a wider audience, good practices can be promoted through radio programmes, podcasts, etc.

The first three sections of this e-book have described international standards, national legislations and selected good practices. The following section will identify new challenges based on academic literature especially dedicated to fact-checking on nutrition and well-being.

5. Fact-checking of media and social media content

In this section of the e-book, we will present several strategies aimed at empowering individuals to evaluate fake news on nutrition and well-being, in relation to the following issues: nutritional literacy and food labelling; identification of fake news and media labelling; mass media (press, magazines and advertising) and dietary behaviour; idealized representations and gender stereotypes in social media; social media and eating disorders.

a. Nutritional literacy and food labelling

To some extent, dietary habits are influenced by available health and nutrition information. This information is now ubiquitous, but sometimes misleading. It requires an examination of the way news are framed and the identification of fake news, fact-checking of statements and advice, and **a general increase in the nutritional literacy of the population so that they can access online content safely.**

Keeping this issue in mind, some measures can be taken. On the one hand, consumers should be aware that **some information about food is fake.** A good way of systematising fact-checking regarding food is using systems that confront generally known conceptions that turn out to be fake news with the **evidence found through reliable and verified sources.** This is a simple yet thorough way of improving general knowledge about nutrition among non-specialized audiences. A sample table with information from various reliable sources has been included in the last section of this document, as part of the toolkit.



When looking for reliable sources of information, one of the most globally trusted are **scientific publications** (Funk et al., 2020), but other types of publications can also prove to be very trustworthy. For instance, the paper by Lucas-Muñoz et al. (2021) used in the elaboration of the above-mentioned table was published in the Spanish Journal of Health Communication (*Revista Española de Comunicación en Salud*), at the Carlos III University of Madrid. The authors work at the Department of Nutrition and Food Science of the Complutense University of Madrid and at the Spanish Institute of Food Science, Technology and Nutrition (ICTAN-CSIC). Another source of information was the Guide for a healthy diet developed by CREA, a public institution dependent of the Italian Ministry of Agriculture, Food Sovereignty and Forestry. **Official dissemination of information from public sources and governmental instances** is a good indicator of its veracity. Nonetheless, while these are traditional sources of reliable information, others have been considered: such is the case of Soriano del Castillo (2023), who contributed a news item to the Spanish version of The Conversation, self-defined as “a non-profit, independent news organisation dedicated to unlocking the knowledge of experts for the public good”. Finally, we include Sophie Egan’s work in debunking 10 commonly held myths about nutrition (often based on broad and general concepts that mislead individuals) for The New York Times (2023), a source that is considered rigorous and highly relevant in the news world.

Furthermore, when consumers want to buy products, **they can have access to nutrition facts via the labelling**, which can provide details such as the amount of salt, sugar and trans-fat in a food product. They should also consider the recommendation about daily quotas for each category to guide decision making (Spradling et al., 2021).

For instance, for a healthy diet, the **World Health Organization** recommends:

- meeting the needs of energy, protein, vitamins and minerals through a varied, largely plant based diet, and balancing energy intake with expenditure;
- obtaining the largest amount of energy from carbohydrates, mainly through legumes and whole grain cereals;
- reducing total fats to less than 30% of total energy intake, shifting fat intake from saturated and trans-fat to unsaturated fats, and eliminating industrial trans fats from the diet;
- reducing free sugars to less than 10% (ideally 5%) of total energy intake;
- limiting sodium intake to less than 2 grams per day (equivalent to 5 grams of salt); and
- consuming at least 400 grams of vegetables and fruit per day in adults and children above 10, and 250–350 grams per day in younger children.

Reference: [Healthy diet \(who.int\)](https://www.who.int/healthy-diet)

One of the most common strategies to ensure the correct interpretation of the nutritional value of food for the general population is **qualitative nutritional labelling**. **One of the most popular is Nutri-Score**, “a front-of-pack nutrition label (FoPNL) (...) to be affixed on food packaging. It is intended to allow users to easily compare the nutritional quality of foods and help consumers to orient their choices towards better nutritional quality alternatives. It is a science-based public health tool” (Hercberg et al., 2022).



Nutri-Score is a food labelling system that provides **a quick and easy way for consumers to determine the nutritional quality of packaged foods. Using a traffic light-like model**, Nutri-Score categorises foods according to nutritional parameters. It assigns a letter and a colour to a food product based on its nutritional value. The letters range from A (healthiest) to E (least healthy), and the colours range from green (healthiest) to red (least healthy). The score is determined by evaluating **the nutritional content of a food product based on a set of parameters including energy value, saturated fat, sugar, salt, protein, fibre, and the percentage of fruits, vegetables, nuts, and legumes**. It is easy to understand through the use of the colour code.

The aim of the Nutri-Score system is **to help consumers make more informed choices about the foods they eat, and to encourage food manufacturers to improve the nutritional quality of their products**. By using this system, consumers can quickly and easily compare the nutritional value of different foods and make healthier choices. The Nutri-Score system is voluntary and is currently being used by some food manufacturers in Spain, for instance. However, the system has not yet been adopted at European Union level, so its use is not widespread across all European countries.

Reference: [Nutrition labelling schemes used in Member States \(europa.eu\)](https://europa.eu)

In European countries, where labelling and health claims are regulated, scientists have conducted research to examine their effectiveness and comprehension by the general public. The article “Comparison of front-of-pack labels to help German consumers understand the nutritional quality of food products” examines the effectiveness of five front-of-pack labels (FoPLs) in helping German consumers make healthier food choices.

The study surveyed 1,000 German participants and asked them to rank three sets of products based on their nutritional quality, with and without FoPLs displayed on-pack. The results showed that the Nutri-Score was the most effective FoPL in conveying nutritional information, followed by the Multiple Traffic Lights, Warning Symbol, Health Star Rating System, and Reference Intakes (Egnell et al., 2019).



In terms of recommendations for nutrition fact-checking, Egnell et al. (2019) highlight the **importance of clear and easily understandable front-of-pack labels** to help consumers make informed decisions about the nutritional quality of their food choices. It suggests that governments and food industry stakeholders should consider implementing effective FoPLs like the Nutri-Score system to help improve consumers' understanding of the nutritional value of food products.

A study by Vareiro, Franchini, Oliveira and Vaz (2021) focused on the opinion of Portuguese experts on nutritional labelling. With the participation of 297 professionals in the fields of food and nutrition, they found there is a consensus about the adequacy of this kind of policy, since it can be a useful tool for consumers who wish to improve their knowledge about nutrition and their health. However, they diverge in their considerations about the information and presentation that nutritional labels should have. Regarding

the improvement of the EU-regulated labelling system, experts recommended the simplification of the information with the aim of improving its perceptibility and usability.

Overall, while the Nutri-Score system is a step forward in helping consumers make more informed choices about the foods they eat based on scientific evidence and independent and transparent criteria, it also has some limitations and potential problems, and should be used in conjunction with other sources of information, such as ingredient lists and nutritional information panels. Some of its limitations are:

1. **Over-reliance on a single score:** The Nutri-Score system assigns a single score to a food product, which may oversimplify the complexity of nutrition. Some experts argue that a single score cannot capture the nuances of a food's nutritional value, such as the quality of the ingredients or the presence of beneficial nutrients.
2. **Inaccuracies in scoring:** The Nutri-Score system has been criticised for assigning inaccurate scores to some foods. For example, some dairy products that are high in fat but also high in protein and calcium may be given a lower score than they deserve, leading consumers to believe they are less healthy than they actually are.
3. **Potential for manipulation:** Food manufacturers may attempt to manipulate the Nutri-Score system by reformulating their products to achieve a higher score, even if the overall nutritional quality of the product remains poor. This could undermine the credibility of the system and mislead consumers.
4. **Limited scope:** The Nutri-Score system only applies to packaged foods and does not account for the nutritional quality of fresh foods or meals prepared at home. Therefore, it may not provide a complete picture of an individual's overall diet.
5. **Lack of standardisation:** While the Nutri-Score system has been adopted in some European countries, it is not yet standardised across the European Union. This can lead to confusion among consumers and make it difficult to compare products from different countries.

Other voices alert to the fact that front-of-package nutrition labelling (FoPNL) is being strongly opposed by food manufacturers. As Hercberg et al. (2023) point out, **inaccurate information aimed at discrediting Nutri-score has been widely spread by lobbies**, and “these fake news are sometimes taken up by people in good faith who do not know enough about the issue of FoPNL or by certain actors defending

economic or sometimes ideological interests”. The international consumer advocacy organisation, **Foodwatch International**, documents the history of lobbying against nutritional labelling, showing that large companies have actively tried to stop or manipulate FoPNL since the first traffic-light initiative in 2004 **by pushing for voluntary implementation, favouring counterintuitive systems and less visible labelling or calling for more research about the labelling systems in order to delay regulation** (Foodwatch International, 2022).

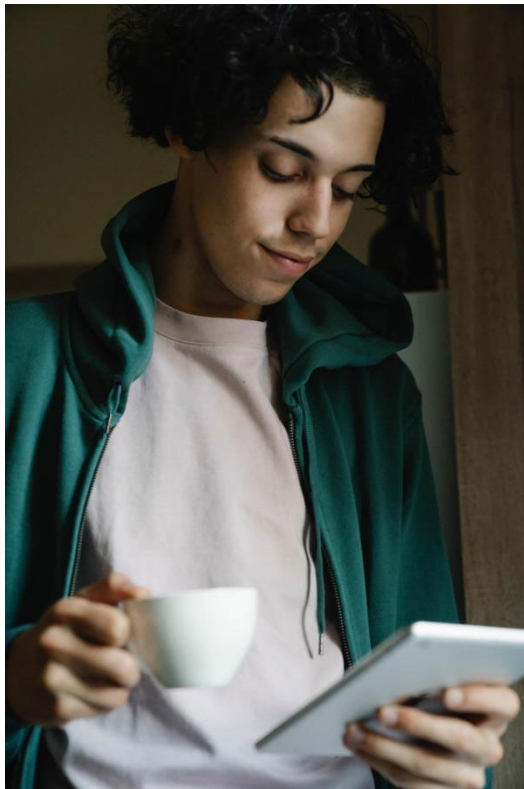
It is worth considering that regardless of the efforts to make the **provision of nutritional information on food packaging** an effective and comprehensive tool for public health, some evidence suggests that **it has less influence on consumer behaviour than other measures such as increasing the availability of healthy foods or implementing taxes on certain foods** that can be considered of poor nutritional density or have high levels of fat, sugar and/or salt (Simovska-Jarevska et al., 2012). However, generally speaking the potential of traffic-light systems is widely accepted at an international level and they can be considered a priority.

Recommendations:

- Use Nutri-score or traffic-light labelling as a general rule of thumb.
- For both media and social media, check if the online content is sponsored or not.
- If the online content is sponsored, check which organisation is sponsoring it. The answer may be a public administration, a food company, a foundation dedicated to health, nutrition and well-being, or a social organisation, among others. If the sponsor may obtain economic benefit from the content, the information may be biased to some extent.
- Whether or not the online content is sponsored, look for similar information on other websites to discern whether the online content responds to the standards currently established for nutrition and well-being according to international regulations (United Nations, World Health Organization, and the European Union) and national legislation (see the specific section dedicated to this subject in this e-book).
- Refer to scientific resources, when available. In this case, check the professional background of the authors and the type of publication. Publications in scientific journals and independent news organisations may be more reliable than publications in personal websites, as they have been peer-reviewed (reviewed by other scientists).
- The diversity of sources contributes to more reliable information.

b. Identification of fake news and media labelling

In what is commonly referred to as the “post-truth” era, media literacy has proven to be highly influential in the war on fake news, and has become a key factor in the fight against it. A book by Zuzana Benkóva’s (2018) develops this thesis by exploring the problem of disinformation in the online environment and examining its origins and ways of dealing with it. Distinguishing the term disinformation from misinformation and mal-information, the author raises the question of terminology and the adoption of the term “fake news”, concluding that trust in information today is heavily based on emotions, feelings and beliefs rather than on the presentation of facts.



Several solutions to the problems of online content accuracy can be implemented, such as:

- Manual verification of fact; however this process is time-consuming and relies heavily on reviewers’ subjective decision making.

- Labelling system for online content, through recommendation, informational or hybrid labels, for consumer notification in terms of warning and approval.
- News media labelling.
- Prevalence of accurate news articles in feeds.
- Automated detection of deceptive content.
- Change in algorithms to give individuals greater exposure to different perspectives (this is a limited solution due to online advertising).
- Important role of the government in the development and enforcement of regulations.

References: Bakir and McStay (2018), in Spradling et al. (2021).

While the first solutions (manual verification and labelling systems) aim at empowering individuals to evaluate fake news, the later ones (accurate news articles in feeds, automated detection, change in algorithms and role of government) help mitigate the influence of fake news through structural changes. In this case, the aim is to prevent exposure of individuals to fake news (Lazer et al., 2018).

According to Bakir and McStay (2018), fake news can be detected by several means, such as:

- “False connection (where headlines, visuals or captions do not support the content)”,
- “False context (genuine content shared with false contextual information)”,
- “Manipulated content (genuine imagery/information manipulated to deceive)”,
- “Misleading content (misleading use of information to frame an issue or individual)”,
- “Imposter content (genuine sources are impersonated)”,
- “Fabricated content (100 per cent false, designed to deceive and harm)”, and
- “Satire/parody (with potential to deceive but no intention to cause harm)”.

In some European countries, public institutions have come up with suggestions to combat disinformation. The German Federal Government, for instance, provides individuals with the following advice on how to detect fake news:

- **Question critically instead of forwarding:** Messages that contain false information often have similar patterns: sensationalist wording or particularly emotional language. For individuals, it is essential to check the text and the titles for possible contradictions and not to share any content they find suspicious.
- **Use fact-checks:** To check if the information is true, enter the suspicious keywords from the text into a search engine with the words “fact check”.
- **Check the sender of the message:** Always check who posted the video, picture, or message. Check if he or she is the originator of the material, or whether it has been shared multiple times. For websites, look at the imprint. The information should include the person responsible for the website content and a full address instead of an anonymous email address.
- **Compare sources:** It is always helpful to compare questionable messages with other sources. Check more on the official websites of public institutions as well as their social media channels.
- **Check images:** To check if an image has been manipulated or is an original, use image reverse search. Upload the image file or URL to a search engine page that provides information about the place and date of publication on the internet.

Reference: [How to spot fake news. Bundesregierung, 2022](#)

The Italian Ministry of Education and Merit provides the following guidelines to protect the population against fake news:

- **Only share news that you have verified:** before sharing any news, make sure that the source is reliable and authentic.
- **Use Internet tools to verify news:** the Internet is a great tool to verify the authenticity of the author, to search for the original source of the news and to check the date and any images.
- **Ask for sources and evidence of a news story:** you are entitled to want to know the source and to have some kind of proof.

- **Ask for help from an expert or competent body:** check that the writer is really an expert or knowledgeable about the subject.
- **Always bear in mind that everything on the internet or on social media can be manipulated:** on the Internet, many people exploit news, falsify it to create an army of followers and deceive people.
- **Recognising the different types and styles of fake news:** often fake news writers use big headlines and exaggerated punctuation, and the news is always unbelievable.
- **Like with caution:** every time we share a hoax, i.e. some post that does not tell the truth, we contribute to the spread of fake news, which can have serious consequences.
- **Set a good example:** for example, by reporting fake news.
- **Surfing the Internet, without falling into the ocean of lies:** one should surf the net and inform oneself by always keeping in mind the rules of good information.
- **Use your head:** always assess the political orientation of the author or the media outlet, check professional backgrounds and any personal relationships or associations. Moreover, it may be useful to rely on sites or blogs that help to assess the authoritativeness of news.

Reference: [SIC Italia - EDUCAZIONE ALL'INFORMAZIONE](#)

Although these suggestions are not directly related to nutrition, some of them are very helpful for implementing fake news checks in this area, as it is important to be cautious about the sources of our nutrition information. Not all sources are credible, and some may have hidden agendas. It is highly recommended to always use reputable sources, such as scientific journals, government agencies, or registered dietitians.

In Spain, a pilot study was recently conducted with adults and teenagers to analyse if the population differentiates between real information and fake news about nutrition. An online questionnaire was distributed to 200 participants, questioning some myths about food and the media participants used to obtain information on food and nutrition. Most respondents answered the questions correctly. Almost 80% admitted seeking information on food mainly through the Internet and social networks such as Instagram, Facebook or Twitter. The authors' principal conclusion is that the population receives news about food and nutrition through different media, so it is important to make society aware of the need to be critical and contrast the information transmitted to eradicate fake news (Lucas-Muñoz et al., 2021).



According to Soriano del Castillo, Professor of Nutrition and Bromatology, Department of Preventive Medicine and Public Health at the University of Valencia, individuals should make an evaluation of online content according to the profile of the media. For instance, a satirical digital media called *El Mundo Today* has published news that should not be taken seriously, because the title adopts a sarcastic tone, as in these cases:

- Eating only one yoghurt for dinner, the main cause of mortality among Spaniards (Title in Spanish: Cenar solo un yogur, principal causa de mortalidad entre los españoles)
- Putting on forty kilos after trying all diets at the same time (Title in Spanish: Engorda cuarenta kilos tras probar todas las dietas a la vez)
- They discover that the artichoke diet only works if you are an artichoke (Title in Spanish: Descubren que la dieta de la alcachofa solo funciona si eres una alcachofa)
- Amazing: this is the actual appearance of an unfried potato. (Title in Spanish: Increíble, este es el verdadero aspecto de una patata sin freír)

Source: Soriano del Castillo, 2023.

As far as news media are concerned, they can be catalogued through SCIMago Media Rankings. SCIMago Lab presents the first global media map to discover, evaluate and compare the digital development, position and leadership of journalistic companies from the perspective of their web reputation.

The Global Ranking of Media Web Reputation begins, as a work in progress, with a first approach to the world press of general information from a sample of more than 4,500 digital newspapers (print and native), in more than 90 languages from over 200 countries worldwide. The Ranking will be updated 4 times each year.

SCImago Media is an initiative which is independent of media groups and was born as a new development facet of SCImago Lab, with the collaboration of prominent researchers from the Spanish universities of Granada, Navarra and Pompeu Fabra.

Access: [SCImago Media Rankings](#)

Methodology: [Methodology \(scimagomedia.com\)](#)

Recommendations:

- For the evaluation of media, use SCImago Media Rankings (SMR) to check the digital reputation of the online content. It can be used as one criterion, among others, to evaluate the information.
- When accessing online content, check if there are disconnections between headlines, content, and visuals.
- Check which sources of information are mentioned in the online content. If an opinion appears to be based on self-experience, with no reference to scientific findings or standards established by international regulations or public authorities, compare the information with other reliable sources (mainly, international regulations, public authorities or scientific resources).
- If the comments on the online publication show a polarisation of public opinion on a specific aspect of food and nutrition, check other sources of information, especially publications from international regulators or public authorities and also scientific resources before you form your own opinion.
- If the information is published in a website dedicated to satire or humour, do not take it seriously.
- Be aware that the immediacy and speed with which we receive and share content from social media make its verification more difficult.
- Defuse hoaxes more effectively by avoiding the repetition of false information and by focusing on the right messages. Expose false information when you find it.
- Take advantage of virality. Spread accurate information with messages that are visual, short and emotional, in order to stimulate attention and recall of the information.

c. News framing and dietary behaviour

Although the risks of fake news have increased with the Internet, social media and online content, it is worth analysing the impact of traditional mass media (especially the press and magazines) and news framing on nutrition and well-being. Media theorists differ in terms of the influence of mass media on public opinion: some believe that the messages spread by the media do not have any real impact on people's beliefs, while others suggest that citizens can be highly influenced by opinion leaders or media role models, since vertical communication can be highly persuasive.

In "Communication and diet: an overview of examples and principles", Hornik and Kelly (2007) distinguish five different reasons why heavy exposure to media is decisive when it comes to dietary behaviour change and conviction. It may determine the level of success of a certain campaign.

- **Repetition is effective:** the more times a person hears a certain message, the more likely they're to learn it.
- **Repeated exposure** increases the likelihood that a message will reach an audience.
- **Social expectation:** if the same message is spread via different channels, it creates the perception that many sources agree about a subject. This situation can create a sense of credibility.
- **Heavy exposure** also may increase social discussion and diffusion through social networks.
- If a certain message meets all of the above requirements, policy makers may increase their interest in the matter and take action. **Institutional changes** may then influence individual behaviour as well.

In terms of social discussion and diffusion, social networks may be particularly influential when it comes to diet-related behaviour, as meals are often enjoyed with others, and many people - especially children and teens - are often under the control of another member of the household, who does the shopping and food preparation (Verbeke, 2008).

Several studies have shown that communication and media have a real impact on people's body image and beauty standards - which are usually linked to thinness and therefore to nutrition -, as well as food choices. The media also impact on the pursuit of

healthiness and well-being and on nutritional good practices regarding planetary health and pollution abatement.



Lately, consumers have increasingly shown interest in nutritional information such as side information and/or guarantees concerning food quality to achieve a better diet, or concerning product traceability in order to know the origin and environmental/ethical conditions under which the food was produced and processed. These kinds of issues have markedly increased their relevance in the context of the media agenda over the last few years.

Nonetheless, Verbeke (2008) published a study on the impact of communication and food choices stating that “communication through providing simple dietary advice is not equally acceptable among a wide diversity of consumers, therefore hampering compliance with the communicated dietary advice. (...) Nevertheless, the review has indicated that interest in nutrition information is higher for processed products than for fresh products such as meat, fish or fruits and vegetables”. Audiences are becoming more aware of the challenges related to food and nutrition, for personal reasons (weight and health) and social reasons (pollution and sustainability).

Health and nutrition are affected by other motives for food choice such as taste, price and convenience, and related information is disseminated in an environment which is characterised by increasingly fierce competition to gain consumers' attention.

Furthermore, **media exposure can be a source of information for individuals**, but also an indirect way of putting pressure on policy makers or other stakeholders. Hornik and Kelly (2007) explain it by means of **media advocacy**, which is the strategic use of mass media to apply pressure in order to advance healthy public policy. "This strategy attempts not only to influence the topics covered by the media, but also the framing of those topics—or the way in which the topics are covered. For example, the goal may be to have reporters focus their obesity stories less on poor individual decisions about diet and more on the role of food manufacturers and advertisers in encouraging poor diets" (Hornik & Kelly, 2007).

The unequal consideration of structural and personal factors to explain social reality is a common element used by the media to frame their news. According to Gamson and Modigliani (1987), a news frame is "the central organising idea or storyline that provides meaning to an unfolding strip of events... The frames suggest what the controversy is about, the essence of the issue". Therefore, the way that news are presented in the mass media can affect how the audience comes to understand events (Rodríguez & Dimitrova, 2011).

With respect of health and nutrition, traditional mass media and women's magazines have built a discourse concerning the **enhancement of the aesthetic values of thinness and slenderness**, as being highly valuable personal attributes. The psychological consequences of this media influence can lead to a change in dietary behaviour. Furthermore, a large amount of empirical research supports the notion that high media exposure can have negative effects on self-perception and body satisfaction, since mass media are traditionally given to promoting **unrealistic beauty standards**.

Despite the multiple factors that can influence self-perception and body image - such as peer pressure, parental decisions on food and beliefs' influence during childhood, or nutrition knowledge - media framing plays a very important role in terms of **body dissatisfaction (lack of connection between the real and the ideal perception of one's own body), especially among women**. In addition, magazines and the general press have conventionally promoted starving and hypocaloric diets, which research has proven to be unhealthy and frequently dangerous.

According to research focused on individual body satisfaction and the effect of the media's ideal body image, magazines stress that **virtue for women is based on beauty and the necessity of being attractive**. The ideal beauty standards depicted

in advertising and the media portray thin and young women, in whom no imperfections are allowed (Leigh, 2009).

Meireles et al. (2022) carried out an analysis of the covers of 13 months of Portuguese magazines and found that 29% of the magazines included some kind of message related to the beauty culture, such as body fitness or weight. They also found that 8.5% of the magazines had **body-shaming messages**. However, the authors expressed hope on future improvements in body-positivity in the printed media due to the **increasing popularity of new trends that not only focus on raising awareness of the stigma associated with obesity and eating disorders, but also advocate for greater representation of body diversity**.

On the other hand, the media and particularly advertising influence attitudes, decision making and behaviours, which can have harmful consequences, including an increased intake of fast food and beverages that might lead to obesity or other diseases caused by bad diets and unhealthy habits (McLean et al., 2016).

Regarding obesity and its location in media framing, according to a recent research (Frederick et al., 2020), people with more exposure to mass communication sources which support the traditional public health crisis frame tend to stigmatise overweight people more. An easy explanation of what “crisis frame” refers to would be that, despite the lack of scientific data supporting the central claims of the war on fat, **obesity and overweight have been traditionally presented by the media as a public health issue**. Some scientists believe it can even be described as an epidemic which threatens the human lifespan in the long run (Campos et al., 2006).

As mentioned before, media framing can give more or less importance to structural or personal factors to explain obesity. During an experiment conducted by Frederick et al (2020), participants were given some news articles with an anti-stigma frame, which emphasised the **”Health at Every Size” perspective**. This perspective is based on the idea that fatness is not inherently unhealthy and is largely beyond individual control. The results showed that “compared with people who read anti-stigma frames, people who read fat-negative frames expressed more belief in the health risks of being fat, scepticism that women categorised as overweight or obese can be healthy, intentions to diet if they gained weight, support for charging obese people more for health insurance, anti-fat attitudes, negative judgments, support for weight-based job discrimination and prejudice.”

However, this study proved that adding **anti-stigma messages** to public health crisis frames somewhat tempered the expression of prejudice. The conclusion is that news media frames have **immediate impacts on weight-related attitudes** (Frederick et al., 2020).

Some researchers have adopted a different approach representing an alternative solution to these problems regarding well-being and media framing. Rather than relying on legislation to restrict media exposure in order to reduce the negative impact of viewing ideal images, media literacy competencies should be enhanced by promoting the **development of skills to resist media influence through critical viewing**. For instance, some suggested actions that could be taken are raising critical awareness about positive and negative messages transmitted by media, how media affect people, motivations behind advertising, and ways to respond to media through advocacy (McLean et al., 2016). Media literacy should be a goal to achieve in order to **lower susceptibility to persuasive media messages and reduce engagement in health risk behaviours**. “These approaches also emphasise the importance of having skills to critically deconstruct media in order to recognise, among other things, that media are created for profit and influence, that media contain specific points of view, and that media may omit pertinent information” (McLean et al., 2016).



In the case of photographs, they have the power to create stronger and immediate emotional responses. This means that when it comes to women's

magazines and beauty standards, the audience can easily start to compare their own bodies to the ones which appear in the media. The way in which models are presented and framed can suggest a series of aesthetic requirements that indirectly and unconsciously can start to build body dissatisfaction.

A study held in 26 countries and 10 world regions in 2010 - as part of the First International Body Project (IBP-I) - showed that there are significant differences regarding ideal female figures and body dissatisfaction which depend on the socioeconomic status and the media to which individuals are exposed, **Western media being more prone to foster body dissatisfaction**. The same study revealed that higher socioeconomic status presented a higher desire for thinness (Swami et al., 2010).

A report published in 2020 claims that the ubiquitous use of **digital modification in advertisements featuring models** has increased concern that these modified ideals, which are even thinner than the models and less attainable for the average woman, will have a **negative impact on women's body satisfaction** (Lewis et al., 2020).

In addition, the common practice of digital alteration of media images has created even wider gaps between actual and ideal body shapes and sizes. Several meta-analyses have demonstrated a small-to-moderate effect of media exposure on body concerns, including **body dissatisfaction, internalisation of the thin ideal, and disordered eating behaviours** (Kwan et al., 2018).

In any event, the detrimental effect of thin idealised media models on women's body image has become an important social issue, of concern to policy makers and the general public alike. Many countries around the world (such as France or Australia) have started to work on policies which aim to combat negative media effects and **protect individuals from distorted images and harmful body comparison**.

Reference: [Science Direct topics - Body Image](#)

One proposed strategy is the addition of **some form of warning or disclaimer label to media images that have been air-brushed or digitally altered**.



A report on the effect of digital alteration information and disclaimer labels attached to fashion magazine advertisements (Tiggemann et al., 2019) explains its aim in the following way: “The assumed (but largely unarticulated) rationale underlying the use of disclaimer labels is that they should serve to **inform or remind the reader that the fashion image is not realistic** and therefore does not present a relevant or appropriate target for comparing herself to, which should lead to lower social comparison and, in turn, the preservation of body satisfaction”.

However, Tiggemann affirms that some studies show results contrary to what might be expected, as a growing number of experimental studies have found that **adding disclaimer labels indicating digital alteration to fashion images offers no protection against body dissatisfaction and what is more, can even turn out to be counterproductive** (2019). As a whole, this research comes to the conclusion that

adding disclaimer labels indicating digital alteration to fashion images is not an effective strategy for reducing body dissatisfaction.

A meta-analysis article published in 2011 by S. Knobloch and J. Crane claimed that “several authors have noted that **idealised body images in the media are often accompanied by attainability messages**, either explicit messages such as diet tips or implicit messages such as advertising a product associated with physical beauty”. The most extensive longitudinal evidence investigated a sample of over 6,900 girls. Covering a 1-year period, it revealed that the key predictor of the development of weight concerns and dieting was “making a lot of effort to look like same-sex figures in the media” (Knobloch & Crane, 2011).

A 7-year follow-up showed disordered eating was predicted independently by frequent dieting and attempting to look like media characters. This suggests that **social comparison processes play an important role in media effects regarding problematic eating habits driven by weight-loss goals** (Knobloch & Crane, 2011).

Another study published in 2018, including an experimental research with young females, tested the relation (if any) between eating behaviour (in terms of restrictive and binge eating) and exposure to airbrushed fashion images; the study found that although warning labels did not influence short-term snack consumption on average, those individuals who reported engaging in restrictive eating in the previous month **consumed fewer kcals when exposed to fashion advertisements with warning labels versus those without warning labels** (Kwan et al., 2018).

Recommendations:

- Be aware that mass media and advertising tend to reproduce stereotypes and simplified images of social reality. Be aware that some images may have been air-brushed or digitally altered (through Photoshop or other techniques).
- Long-term exposure to stereotyped images and discourses on the female and the male figures can lead to body dissatisfaction, internalisation of the thin ideal, and disordered eating behaviours, especially among women, although men are also affected. Do not hesitate to disconnect from stereotyped media discourses.
- If you are worried about your size, body complexion or weight, you might consult a nutritionist, use some of the recipes recommended by reputable sources - such as those included in the good practices section of this e-book -, or increase your activity to a level adapted to your experience and capability.
- If you fear you might have an eating disorder or you feel you want to hurt yourself, you should consider consulting a doctor about your situation and get support. You should not feel ashamed about it.
- Do not start a diet by yourself without consulting reliable scientific and other sources before you begin (see the toolkit of this e-book). Going on fad diets or losing weight too quickly can have a negative impact on your body and mental health, and often results in regaining the weight in the long run.

d. Idealised representations and gender stereotypes in social media

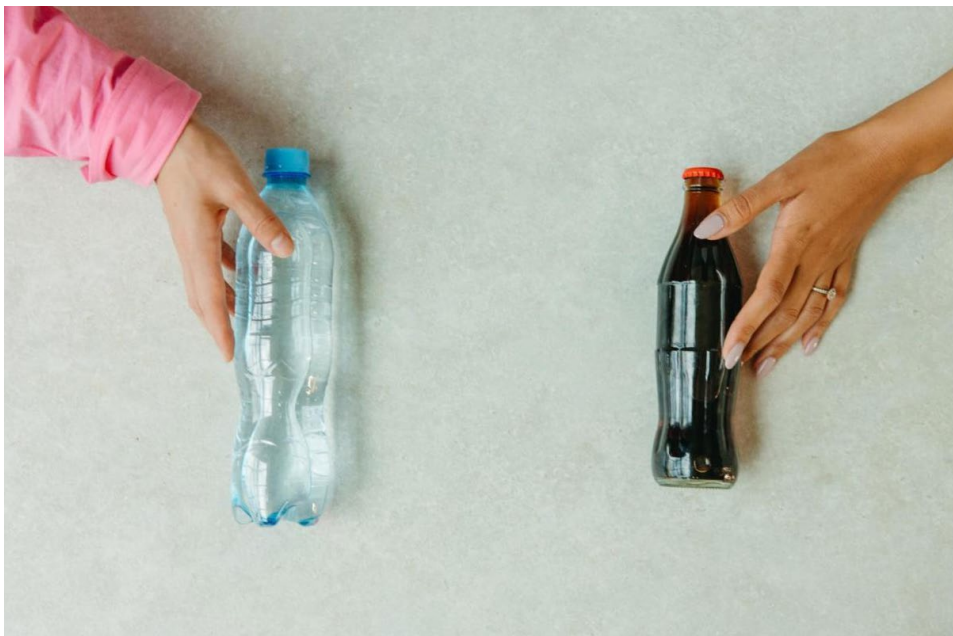
In the previous section, we focused on mainstream media (mainly newspapers and magazines). This section will be devoted to the dynamics of social media. In recent years, the influence of social media on how individuals perceive their body shape and consequently their eating habits has become a growing concern, particularly among young women.

The association of body shape concerns and gender has been highlighted in several studies. With the purpose of evaluating the degree of concern about body shape in men and women, Ferreira-Pego et al (2021) conducted a study with 163 students from the Universidade Lusófona de Humanidades e Tecnologias, made up of 100 women and 63 men, with a mean age of 21,71 years. Their study showed that 81% of men reported having no body shape concerns, while women with no concerns were only 59%. Moreover, zero percent of men showed intense preoccupation with their body, as opposed to 4% of women. The distribution of mild and moderate concern was roughly ten percentage points higher among women than among men. The findings suggested that concerns about body shape were significantly more prevalent among female students, across all variables used in the study (age, academic course, eating habits, etc.).

Wallner et al. (2022), in their paper on “Interethnic Influencing Factors Regarding Buttocks Body Image in Women from Nigeria, Germany, USA and Japan”, reveal that there is a highly significant **correlation between the consumption frequency of Instagram, TikTok, and pornography with the negative perception of the female body**, specifically the buttocks. Through online testing of men and women aged between 25-35, they were able to identify social media as the major source of unhappiness with one’s own buttocks, with increased access correlating with dissatisfaction among women.

In this study, celebrities (including influencers) are also seen as role models and have a positive influence on body image. **The slim-thick body trend is identified as dangerous, with female fitness influencers on Instagram promoting a body shape that is difficult to achieve naturally.** The study highlights the negative influence of digital media on body self-image and the need for action to promote body positivity, strengthen self-image, and encourage behaviour changes instead of plastic surgery (Wallner et al., 2022).

Images of thin and toned bodies are often portrayed as the ideal, leading many young women to engage in extreme dieting and exercise practices in an effort to achieve this ideal. However, these practices can have negative consequences on their nutrition and overall well-being.



According to Wallner et al. (2022), white-centred mainstream media often portray a thin-ideal image of women's bodies, **leading to body dissatisfaction and negative psychological and physical health outcomes**. Social media, particularly image-based platforms like Instagram, can create significant pressure on users to conform to a certain body type. **The “thinspiration” trend on social media enforces a thin body image, while “fitspiration” focuses more on muscular physique**. However, there is a recent trend towards curvy figures, with the hashtags #thick, #thicc, and #slimthick becoming more popular. The term “curvy” is not clearly defined but may refer to an hourglass figure with a slim waist and wider hips. This body type, which is often portrayed as exaggerated and unrealistic, may be just as harmful to women's body image as the thin-ideal type. **Instead of calling it plus-sized, average, or curvy-slim, the name “slim-thick-ideal” has been suggested** (Wallner et al., 2022).

Studies have shown that social media platforms such as Instagram, Facebook, and Twitter play a significant role in shaping one's own body ideals, leading to a **feeling of pressure to conform to unrealistic and often unhealthy beauty standards**. Society maintains “a series of approaches about what it means to be a man or a woman, and transmits it to its members through multiple procedures, among which we find the Social Media” (Renau et al., 2012).

That is to say, although this is a problem which finds its main niche in women, **nowadays beauty representation in social networks directly affects both genders, although with different nuances**. Men also submit their own perception to the criteria formed in social media; however beauty stereotypes might be different from those created for women (Renau et al., 2012). According to research by Renau et al. (2012), “this fact could be explained by the differences in socialisation”.

“Although beauty stereotypes do not initially have a negative connotation, the fact of comparing or imitating these stereotypes with the belief that they are models of ideal people automatically gives them a negative connotation” (Gordillo et al., 2020). In other words, the more pronounced a **stereotyped perception is about what is “ideally beautiful”**, the less people will value themselves, since they do not meet the representative features in images published on these social networks.

Regarding specific social networks, other studies have shown that **Facebook users (men and women) have a marked preference for showing sexualized poses** in order to build their ‘desired selves’ that represent what is **socially desirable for others**; that is, all the poses that generate images “that represent strong stereotypes of beauty (reinforced by the amount of ‘likes’ and positive opinions of others) that social network users seek to reach on several occasions” (Gordillo et al., 2020).

Recommendations:

- Be aware that social media, like mass media, tend to reproduce stereotypes and simplified images of social reality, which are unreal, both for women and for men. Be aware that some images may have been air-brushed or digitally altered (through Photoshop or other techniques).
- The identification process of users with content producers can be higher in social media, in comparison to mass media, as content producers may be of similar age, experience, etc.
- Use social media in moderation and be mindful of the content you consume. If you are both producer and user of social content, challenge harmful content when you encounter it. Be aware that this type of content may be harmful to others.
- If you consume content on social media, do not forget that celebrities and influencers publish information to obtain economic or other types of benefit, like fame, by having more followers, more likes, etc.
- If you are producing content in social media, promote positive body image and self-esteem. Promote values such as honesty, fairness, and respect in the digital space and encourage healthy self-esteem and body image.
- Advocate for the media to highlight leadership inspired by moral values as opposed to physical beauty, fame and money.

e. Social media and eating disorders



In the United Kingdom, the Royal Society for Public Health (RSPH), an organisation devoted to improving public health, conducted research with 1,479 people between the

ages of 14 and 24 (BBC News, 2017). They evaluated how social networks affected the mental health and well-being of the participants. Researchers discovered that all social networks acted negatively on both physical and mental health, mainly in aspects such as quality of sleep, body image, cyberbullying and the fear of missing out (FOMO).

In the context of eating disorders, some sources state there is a connection between eating disorders and excessive consumption of social media, but there is no clear evidence that social networks promote or trigger problematic eating behaviour. On this matter, the article “Do Social Media promote eating disorders?” suggests that **people with eating disorders are more likely to spend more time on social networks than others, potentially because they are seeking advice or content related to food, figure, and weight, exposing themselves to the negative effects of social media on body image**. This is especially true among girls and young women who use image channels for self-expression and often compare themselves to unrealistic beauty standards seen on other profiles. The paper shows that engaging with social media can increase dissatisfaction with one’s own body, leading to a distorted reality and problematic role models (Bundeszentrale für gesundheitliche Aufklärung, 2022), as previously mentioned.

Moreover, problematic eating behaviour can be fostered through social media. The article discusses the pro-ana (anorexia) and pro-mia (bulimia) virtual scene, where problematic eating behaviour is not condemned but seen as an expression of willpower and power over one’s own body. The authors also **warn against self-appointed “experts” in social networks who offer to help people lose weight but often conceal other interests behind their offers, such as manipulation or sexual fantasies** (Bundeszentrale für gesundheitliche Aufklärung, 2022).

According to García Ruiz et al. (2019), the predominant factors in anorexia and bulimia are socio-cultural and psychological. Socio-cultural factors are related to the influence of the media (especially TV and social networks), because they “provide an alteration of reality and strengthen the thought of the beauty ideals and thinness”, but interpersonal relations are another determining factor (García Ruiz et al., 2019). The identified psychological risks are related to: anxiety, depression, dissatisfaction with body image and low self-esteem (García Ruiz et al., 2019). The relation to food within the family, during primary processes of socialisation, is also decisive in the relation to food among adults. As mentioned before, the relation to food for young children is especially mediated by adults, first by parents, then by family members, friends, teachers, etc.

A review of studies conducted by professionals from the Master’s in eHealth at the Open University of Catalonia (UOC) and from the #SaludsinBulos eHealth Group concluded that the use of Instagram increases the risk of developing eating disorders

among young women to such an extent that there may be a relationship between higher social media usage in younger girls and the emergence of more severe symptoms of this condition. According to the authors, the use of artificial intelligence algorithms can detect publication patterns on social media, by identifying content that may pose some risk to the user, thereby reducing the harm associated with the use of these platforms.

Reference: [The use of Instagram increases the risk of suffering an eating disorder among young people \(In Spanish: “El uso de Instagram aumenta el riesgo de padecer TCA entre las jóvenes”\)](#)

Recommendations:

- Inform yourself and others about the potential risks of intensive social media use, particularly with regard to eating disorders.
- When consuming content related to nutrition and well-being, such as fitness and weight loss advice, always fact-check. Do not trust influencers based on their follower count, however scientifically they present their claims.
- Be cautious about diets presented as “lifestyle choices” that require inflexibility in what one eats, especially if they include (but not only): not eating for long periods of time, avoiding entire food groups, having a very limited amount of allowed foods or setting “forbidden” foods.
- Although calorie restriction has proven to improve health in cases of obesity or metabolic syndrome, do not proceed with weight loss diets based on extreme calorie restriction (40% less than the recommended maintenance calorie intake) (Dottrow, 2022).
- Create personalised on-line attention for groups who are at risk of suffering the negative effects of social media.
- Seek assistance from a qualified professional if you find yourself or your loved ones experiencing an eating disorder, struggling with what they eat or feeling extremely dissatisfied with their body. Expressing and discussing this condition can be immensely comforting and is frequently the initial stride towards recovery.

6. Fact-checking toolkit in Nutrition and Well-being

This toolkit has two parts. Part 1 covers the design of a questionnaire that interested stakeholders or professors can implement to measure fact-checking in nutrition and well-being among targeted audiences. Part 2 compares fake news with real information on nutrition identified through reliable scientific and public sources.

a. Questionnaire to measure fact-checking in Nutrition and Well-being

This last section provides an overview of and recommendations for the use of online questionnaires to assess the penetration of fake news in the field of nutrition. This overview is based on exploratory research conducted for the present e-book. It may be of use to researchers and educators in higher and secondary education, and stakeholders who wish to better diagnose the issue among targeted audiences. Even though online questionnaires may have some limitations compared to its offline counterpart, it has proven to be an efficient method for exploratory approaches or for research on a very precisely defined population group.

Pros and cons

Online questionnaires present numerous benefits over traditional data collection methods. It offers researchers the flexibility to reach diverse and sometimes inaccessible or even geographically dispersed audiences or purely digital communities (e.g. social media users). Online questionnaires provide a sense of anonymity, decreasing desirability biases and encouraging respondents to share more honest opinions and report their behaviour more accurately. Also, respondents may find online questionnaires more convenient, since they can answer them at their own pace and whenever they find it suitable, which increases participation. Finally, the digitalization of questionnaires facilitates the data collection process, avoiding manual data entry and analysis. Overall, they are more cost- and time-effective and efficient (Hooker & Gil de Zúñiga, 2018).

However, some authors warn about some issues researchers need to take into account when implementing this method. Hooker and Gil de Zúñiga (2018) stress that this method has methodological and logistical challenges, especially in terms of coverage and generalizability, reliability and technological issues. Some of the main issues are:

- **Sampling and selection bias:** Online questionnaires may suffer from sampling bias, as participants self-select to take part. This can result in a non-representative sample that may not accurately reflect the broader population and lead to skewed results.
- **Limited control over respondents:** Researchers have limited control over the questionnaire environment and the characteristics of the respondents. Participants may rush through questionnaires, providing inaccurate responses, or fail to follow instructions carefully, potentially compromising data quality.
- **Digital divide and access issues:** Online questionnaires assume that participants have access to the internet and the necessary technology (e.g., computers, smartphones). This can exclude individuals who are less tech-savvy, have limited internet access, or belong to marginalised groups, leading to biased results.
- **Nonresponse and dropout rates:** Participants in online questionnaires may abandon or not complete the questionnaire, resulting in a nonresponse bias. High dropout rates can reduce the representativeness of the sample and introduce bias into the findings.
- **Lack of contextual information:** Online questionnaires often lack the richness of qualitative data that can be obtained through personal interviews. They may fail to capture some information such as contextual details that can be crucial for complex research.
- **Limited control over response quality:** Online questionnaires rely on participants' self-reported data, which may be subject to recall bias, social desirability bias, or other response biases. Researchers have less control over the quality and accuracy of responses compared to direct interactions.

Recommendations

- To guard against bias in online questionnaires, pay special attention to the design, dissemination and collection methods. You should include an expert in quantitative methods to review every step of the process, including the design of the questions, the sample and the final analysis.
- A good solution is the application of digital questionnaires to a precisely defined population group, such as higher education or secondary education students of a specific school, for instance.

Ethical issues

Ethical considerations are crucial in social science research, and they apply to various stages of the research process. We include some of the most important:

1. **Informed consent:** Researchers must obtain informed consent from participants in online questionnaires. This can be done through consent forms or by providing clear instructions at the beginning of the questionnaire.
2. **Data security, privacy and protection of confidentiality:** Researchers should take steps to protect participants' personal information and responses. This includes using secure platforms for data collection and storage, employing encryption techniques, and ensuring that data breaches are minimised.
3. **Voluntary participation:** Participation in research should be voluntary, and participants should have the right to withdraw at any time without consequences. Coercion or undue influence must be avoided.
4. **Accessibility and inclusivity:** Researchers must take into consideration the accessibility of online questionnaires, ensuring they are inclusive and accommodate participants with disabilities. Questionnaires should be designed in a way that is compatible with assistive technologies and should provide alternative formats if needed.
5. **Dealing with vulnerable populations:** When conducting online questionnaires with vulnerable populations, such as children or individuals with cognitive impairments, researchers must take additional precautions to ensure informed consent, minimise harm, and protect privacy. In the field of nutrition, it is particularly important to address the needs of people with eating disorders, to be inclusive of all body types and to show body positivity.

6. **Transparency and integrity:** Researchers should be transparent about their identity, affiliation, and the purpose of the study. They should provide contact information for participants to address any concerns or questions they may have.

Recommendations

- Always use consent forms and include clear information at the beginning of the questionnaire.
- Choose online platforms that have proven to be robust in their security measures.
- Include information about the purpose of the research and contact information during the questionnaire.
- Be aware of the diversity and different needs of respondents in terms of accessibility, language, images presented or trigger warnings.

Platforms

There are many platforms which researchers can use to program and administer online questionnaires, such as Microsoft Forms, Google Forms, LimeSurvey, Survey Monkey, Zoho Survey, Qualtrics, QuestionPro, SurveyGizmo, among others. Overall, each platform has its strengths and responds to different research needs, as they offer varying degrees of integration, customization, collaboration, analysis capabilities, etc. Factors such as ease of use, platform familiarity, customization requirements, collaboration needs, data analysis options, and budget considerations should be taken into account when choosing one or another.

The following exploratory research we now present was carried out through **Microsoft Forms**. This platform offers good integration with other Microsoft applications, allowing researchers to export, analyse, and share data within the Microsoft ecosystem. Moreover, its user-friendly interface, with the drag-and-drop functionality, makes the questionnaire design accessible without extensive technical knowledge. The platform provides a variety of question types and response formats, as well as question templates. It also has collaboration features, real-time response tracking and basic analysis features, which can offer quick insights and help with questionnaire testing. Security measures ensure data protection and compliance with regulations; digital accessibility enables the platform to work with screen readers, and the platform's mobile-friendly nature enhances accessibility for participants who access through mobile phones. This tendency is on the rise and it can also help overcome the digital divide for people who do not own a computer. Automatic data collection and export to Excel streamlines data processing and integration with other tools.

The image shows the Microsoft Forms website on the left and a mobile app interface on the right. The website features the Microsoft Forms logo, the tagline "Collect better data and make better decisions.", and two buttons: "Buy now" and "Try for free". Below these is a link for existing Microsoft accounts. The mobile app interface displays a grid of survey cards with titles like "Company Monthly Feedback", "Organization Spring eL...", "Virtual Team Feedback sur...", "Team Building Registration", "Team Building Registration", "Organizations Spring All Hands Feedback", and "Virtual Live".

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In addition to its core features, Microsoft 365 Forms offers several other benefits in terms of questionnaire design. The platform allows for customization through options such as theme selection, logo insertion, and personalised thank-you messages. It also supports branching and skip logic, enabling researchers to create dynamic and tailored questionnaires that adapt to respondents' answers. Furthermore, Microsoft 365 Forms provides options for controlling availability and expiration dates, ensuring control over the questionnaire's timeline.

Other common platforms include **Google Forms**, a popular platform that offers several advantages in relation to Microsoft Forms. The familiarity and widespread use of the Google ecosystem makes it easily accessible and adopted by both researchers and respondents, who usually have Gmail accounts or have employed Google Search extensively. The integration with other Google applications online, such as Sheets and Drive, allows for seamless data exporting, analysis, and storage. Google Forms facilitates collaboration and sharing, enabling real-time teamwork and customizable sharing options. Its designing interface is simple and intuitive, with a drag-and-drop functionality and customizable templates, which are highly accessible for basic questionnaires. It also offers basic analysis features, such as summary charts and response statistics.

For a more specialised approach, **LimeSurvey** stands out as an online platform with advanced customization options, enabling researchers to create highly tailored questionnaires with complex question structures and advanced flow control. As an open-source and self-hosted platform, LimeSurvey offers full control and customization flexibility and provides a wide variety of question types, allowing for the creation of questionnaires with complex branching and conditional logic. LimeSurvey is also suitable

for international research since it has a multilingual feature. In addition, the platform offers add-ons and plugins for extended functionality. Researchers can export survey data in various formats for advanced analysis using external statistical software.

Another interesting and powerful platform is the **EU Survey**. This is the official open-source tool developed by the European Commission to perform online questionnaires. Its features allow users to create personalised paths and complex structures. It also provides a service of automatic translation to all official EU languages. So every questionnaire can easily be translated and all the responses kept in the same data-set. Regarding the internal infrastructure, it complies with European security and data privacy regulations. Although the EU Survey platform is a powerful tool, it does not offer the total number of accesses to the questionnaire URL to check the number of visits. It only provides responses that effectively start and finish in the system.

Questionnaire design and analysis

For an exploratory questionnaire on Nutrition and well-being fact-checking, we decided to proceed with Microsoft Forms, as the questionnaire can be translated into different languages and the same link can be used for all participants. Moreover, the platform facilitates digital accessibility for users with reading difficulties. Last, but not least, the platform is very easy to use, as it works in an intuitive way.



After a review of the literature, the questionnaire was designed by the UCM and it was reviewed by the other European teams involved in the NUTRIWELLB project, from Germany, Italy, North Macedonia, Portugal and Spain. The final design includes the following 25 questions:

Part I Education, activity & access to media (socioeconomic data)

1. What is the highest level of education that you have achieved?
2. What is your main activity during the week?
3. During the day, how many hours do you watch television?

4. During the day, how many hours do you listen to the radio?
5. During the day, how many hours do you spend reading newspapers (both in printed and digital versions)?
6. During the day, how many hours do you spend on the Internet and social media?
7. Please evaluate your daily use of each social media

Part 2 Nutrition and Well-being fact-checking (measurement of subjective perception)

8. In general terms, how much do you trust each profile to give you accurate information on nutrition and food?
9. How do you receive information on nutrition and food through social media and the Internet?
10. What is your evaluation of all the information you receive from the media on nutrition and food?
11. What is your opinion on the following strategies against fake news on nutrition and food?

Part 3 Nutrition and Well-being fact-checking (measurement of objective facts, based on the questionnaire previously conducted by Lucas-Muñoz et al, 2021, and Sánchez, 2016)

12. Are gluten-free diets healthier?
13. Are dietary fats harmful?
14. Is light food always healthier?
15. Is breakfast the most important meal of the day?
16. Is it mandatory to eat 5 times a day?
17. Do eggs increase cholesterol?
18. Is lactose-free milk healthier than milk containing lactose?

Part 4. Personal questions on body perception, age & gender (placed at the end, as participants may be more reluctant to answer this information at the very beginning)

19. Do you feel comfortable with your body perception?

20. Have you ever tried a diet or weight-loss programme found through social media and the Internet to lose weight faster?

21. If your answer to the previous question is yes, who was your source of information?

22. Which gender are you?

23. Please select your age

24. Where do you live (country/city)?

25. Do you work or study in one of the following fields?

The recruitment was made through the profiles of the NutriwellB project in social media (Instagram, LinkedIn and Twitter), and through the personal and professional contacts of researchers involved in the project (including Whatsapp groups). The aim was to test the questionnaire and obtain feedback from random participants. During this process, which took place between 23rd May and 15th June 2023, 247 answers were collected in 5 different countries. After this exploratory stage, the questionnaire will be conducted with narrowly defined population groups, from September 2023, in order to measure Nutrition and Well-being Fact-checking among targeted audiences. This way, the data will adequately represent a concrete population group and can be used for different purposes, such as: academic publications, risk detection or policy recommendations, among others.

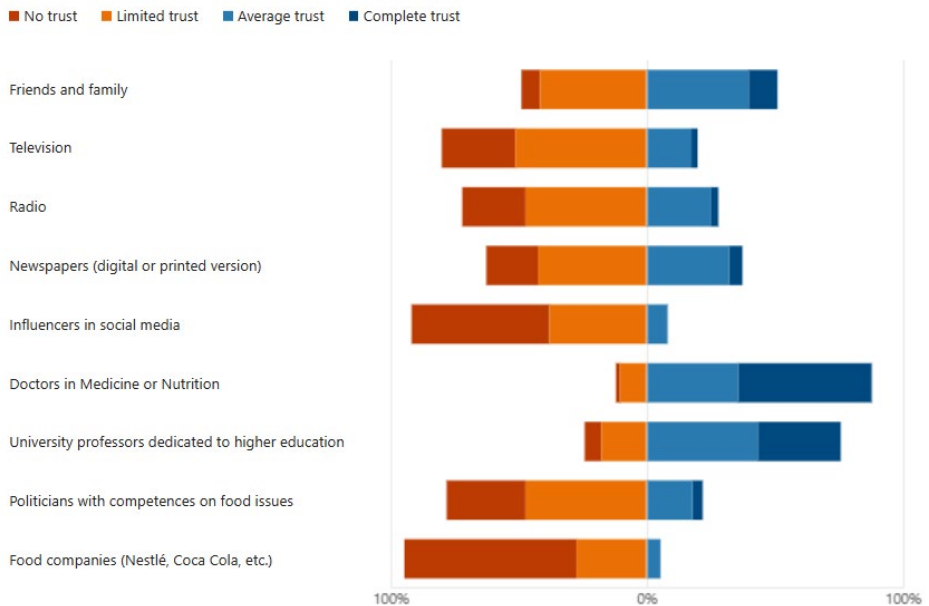
Exploratory findings

Between 23rd May and 15th June 2023, the European consortium of 6 partners working on the Nutriwellb project collected 247 complete answers from Germany, Italy, North Macedonia, Portugal and Spain, to the above-mentioned questionnaire. Some findings will be presented in this section. 69.2% of respondents are women, while 29.1% are men and 1.7% did not give an answer to this question. Most of them have a University degree (78.1%), including a Bachelor degree (22.3%), a Master degree (36.4%) or a PhD (19.4%). Overall, the average age is 39.4 years.

In general terms, to obtain accurate information on nutrition and food, our respondents place most trust in Doctors of Medicine or Nutrition, followed by University professors dedicated to higher education, and friends and family. They trust food companies less, and in decreasing measure influencers in social media, politicians

with competences on food issues, and television, radio and newspapers (both in digital or printed versions).

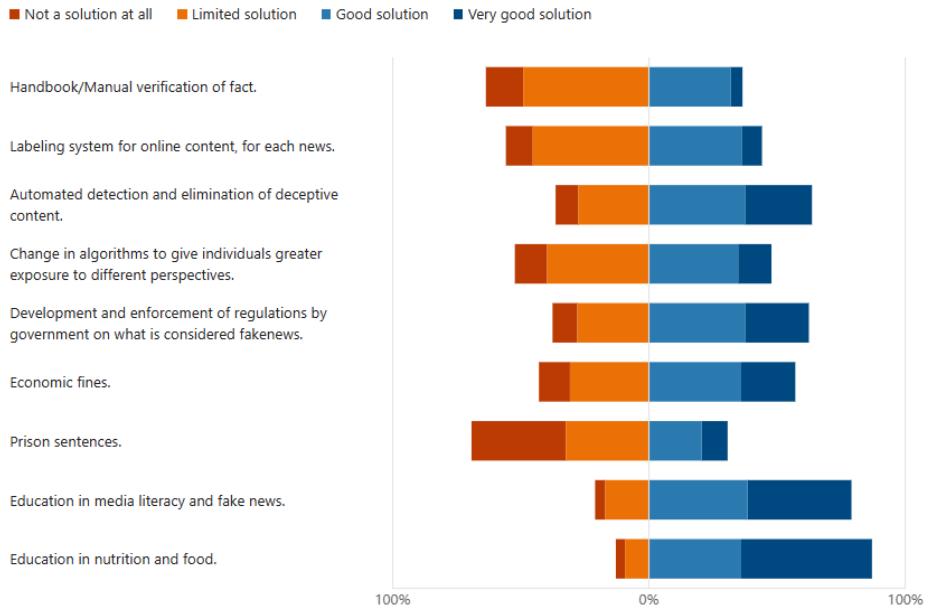
In general terms, how much do you trust each profile to give you accurate information on nutrition and food?



Source: Nutriwellb Questionnaire.

According to our respondents, the best strategies against fake news on nutrition and food are: education in nutrition and food, education in media literacy and fake news, automated detection and elimination of deceptive content, development and enforcement of regulations by the government on what is considered fake news, and economic fines. Basically, education and legal initiatives are evaluated as the best solutions. On the contrary, according to our respondents, the least effective strategies are prison sentences, manual verification of facts, labelling systems for online content (for each item) and changing algorithms to give individuals greater exposure to different perspectives.

What is your opinion on the following strategies against fake news on nutrition and food?



Source: Nutriwellb Questionnaire.

When asked about different myths on nutrition and food, our respondents mostly answered correctly: between 75.7% and 85.8% gave the right answers. The proportion of right answers is lower when they are asked about light food, gluten-free diets and dietary fats. In comparison, the proportion of right answers is higher when they are asked about breakfast, lactose-free milk, the relation between eggs and cholesterol, or the number of mandatory meals per day.

These results can be compared with the findings of Lucas-Muñoz et al. (2021), whose questionnaire was conducted in March 2020, with 200 Spanish participants. Based on Sánchez (2016), Lucas-Muñoz et al. (2021) asked participants about the 7 myths, which we have used for our research. In the case of Lucas-Muñoz et al. (2021), 81% of respondents are women, while 19% are men. Respondents are divided among the following age groups: 15-30 years (32.5%), 31-40 years (33.0%) and 41 years or older (34.5%). In comparison, our respondents are divided among the following age groups: 15-30 years (25.1%), 31-40 years (31.6%) and 41 years or more (43.3%). In comparison with Lucas et al. (2021), our population includes a higher proportion of men, a higher proportion of people aged 41 years and over, and greater diversity, as our respondents come from 5 different countries,

as explained before. Nevertheless, in our questionnaire, we used the same questions on myths about nutrition, as they fitted exactly with the aim of our e-book.

Question	Correct answer	% of right answers (Brey et al., 2023)	% of right answers (Lucas et al., 2021)
Is light food always healthier?	No, because healthy does not depend on the calories of the food but on its composition	75.7	75.0
Are gluten-free diets healthier?	Only in the case of gluten intolerant persons	78.1	80.5
Dietary fats are harmful?	It depends on the type and amount of fat	81.0	97.5
Breakfast is the most important meal of the day?	It depends on the individual and on the choice of food.	82.6	64.5
Lactose-free milk is healthier than lactose-containing milk?	Only in the case of lactose-intolerant people	82.6	79.5
Eggs increase cholesterol?	No, it depends on the rest of the diet	83.4	67.5
Is it mandatory to eat 5 times a day?	No, it depends on the routine of each individual	85.8	63.0

Source: Nutriwellb questionnaire (Brey et al., 2023), based on Lucas-Muñoz et al., 2021; and Sánchez, 2016.

No significant differences can be observed between the percentage of correct answers related to light food, gluten-free diet and lactose-free milk, when comparing both studies. In the study conducted by Lucas-Muñoz et al. (2021), nearly all respondents gave a correct answer related to dietary fats (97.5%), whereas 81% gave the correct answer in our exploratory research in 2023. On the contrary, in the study conducted by Lucas-Muñoz et al. (2021), the percentage of correct answers was lower with regards to breakfast, the number of mandatory meals per day, and the relation between eggs and cholesterol, in comparison to our exploratory research in 2023.

Those differences may be related to the characteristics of the respondents in the two studies. Apart from the diversity of national contexts, in our case, the percentage of the population with a University degree is quite high (more than 3 out of 4 respondents). Moreover, in our case, 31.2% of respondents work/study in the field of communication, media or fake news, or in the field of nutrition and food, or in both. For these reasons, they may have more precise information on nutrition fact-checking. But further research

should be conducted to measure more accurately the relationship between cultural factors, education, professional profile and correct information on nutrition and food.

Recommendations regarding the design and analysis of a questionnaire

- Design your questionnaire after you complete a literature review. The state of the art will enable you to identify key determining factors and variables in respect of your topic. Give priority to previously validated questionnaires, so that you can compare the previous findings with your own results.
- Test your questionnaire in a preliminary and exploratory way with a limited number of participants, to make sure they understand the questions correctly. Target a concrete audience, so that your data is representative.
- In the case of fact-checking on nutrition and well-being, mix questions about the subjective perception of participants with questions on their objective knowledge of facts.
- Provide some initial context about the objective of the questionnaire in order to incentivize responses.
- Indicate approximately how long it will take to complete the questionnaire. Include a time marker for progress or number of pages to avoid exhaustion or loss of interest.
- Divide the questionnaire into sections that can be grouped thematically. Include some context at the beginning of each section, so that respondents know what to expect. E.g. "We are going to ask some brief questions about your eating habits".
- Include socio demographic questions at the end of the questionnaire, since they may tire respondents unnecessarily or provoke early abandonment.
- Remember that gender and age are important factors in respect of nutritional habits and vulnerability to fake news on this subject, so always include them in questionnaires.
- Include the option "Non-binary", "Rather not say" or an open response option when asking about gender in order to promote inclusivity and avoid non-response.
- Include the option "Other" when asking about work status.
- Never ask about two different topics in the same question. Compound questions are unclear to respondents and difficult to analyse.
- Make sure that all options in single choice questions are mutually exclusive.
- Isolate factors in the different options provided in multiple choice questions.
- Avoid questions whose answer will be unspecific and always focus on what you need to know. E.g., when asking about sources of information, "The Internet" might be a less useful answer than "Instagram" and "YouTube vloggers" in two different answers.
- Avoid asking about graduations in percentages and lean towards Likert scaling. E.g.: "Completely agree, Slightly agree, Neither agree nor disagree, Slightly disagree, Completely disagree"

b. Fake news vs real information on nutrition identified through reliable sources

To conclude this e-book, given the need for precise information about food and nutrition, the following table includes fake news on certain aspects, the real information, together with the source of information, the type of source and reliability.

Fake news on food and/or nutrition	Real information found through reliable sources	Source of information	Type of source and reliability
Water should be consumed outside meals.	There is no evidence that water worsens or hinders digestion.	CREA - Centro de Ricerca Alimenti e Nutrizione, 2018	Public institution
Drinking water promotes water retention.	Water retention depends on the amount of salt or other substances contained in food.	CREA, 2018	Public institution
Fruit bloats and slows down digestion.	This only happens to people who suffer from abdominal bloating problems.	CREA, 2018	Public institution
Baking is lighter than other types of cooking.	It all depends on the amount of oil you put in the pan, and the high temperatures that are reached over a long period of time which cause the cooking fat to degrade.	CREA, 2018	Public institution
Whole grain products are lower in calories than refined ones.	Whole grain flours can be as caloric as white flours, but the fibre found in whole grains have greater satiating power, which can result in eating smaller amounts.	CREA, 2018	Public institution
Sugar consumption causes eating and attention disorders in children.	There are no scientific studies demonstrating behavioural alterations.	CREA, 2018; #Saludsinbulos	Public institution
White sugar is more calorific than raw sugar.	There is no difference in the caloric value contained in white and raw sugar. The differences in colour and flavour depend on the molasses residue left in raw sugar.	CREA, 2018	Public institution
One can replace iodized salt with unrefined sea salt.	Unrefined sea salt does contain iodine but in negligible quantities.	CREA, 2018	Public institution

While regular salt consumption has to be reduced, one can eat as much diet salt as desired.	Diet salt should be consumed in moderation.	CREA, 2018	Public institution
Alcohol from beer or wine is less harmful or has benefits for the health.	The alcohol in beer or wine is only present in smaller quantities than in spirits. The potential health benefits of some alcoholic beverages do not come from the alcohol but from other characteristics.	CREA, 2018	Public institution
Alcohol helps digestion.	Alcohol slows down and produces gastric hypersecretion.	CREA, 2018	Public institution
To lose weight one needs to eat just one food group.	A low-calorie diet can be followed with all foods; you just have to eat the right portions.	CREA, 2018	Public institution
Protein bars or a packet of crackers are enough for lunch.	Without a proper lunch there is a risk of concentrating all the energy intake to dinnertime and not having enough during the day.	CREA, 2018	Public institution
The Mediterranean diet is outdated.	It is a varied and balanced health model, but the rule not to overdo it always applies.	CREA, 2018	Public institution
Eating a lot of fruit and vegetables serves to prevent the intake of folic acid during pregnancy.	In order to prevent malformations during the first trimester it is necessary to supplement a diet rich in fruit and vegetables with folic acid.	CREA, 2018	Public institution
Drinking lots of water, liquids or even beer benefits the production of milk in breastfeeding mothers.	Water has no impact on milk secretion and alcoholic beverages reduce the amount of milk secretion.	CREA, 2018	Public institution
Doing physical activity 3-4 times a week for 1-2 hours requires supplements such as protein, vitamins and minerals.	That amount of exercise should be the normal physical activity, organised or spontaneous, for well-being. No supplementation is required other than having a normal varied diet.	CREA, 2018	Public institution
There are certain foods or diets that can significantly improve athletic performance.	Only a healthy and adequate nutrition throughout the athlete's sports season or career can contribute to make the organism efficient and ready to face the efforts of training and competition.	CREA, 2018	Public institution

Herbal teas and infusions make you slim.	High fluid intake produces a sense of fullness and induces eating less, which can result in losing weight, but there is no direct causality.	CREA, 2018	Public institution
Gluten-free diets are healthier.	Only in the case of gluten intolerant persons.	Lucas-Muñoz et al, 2021	Scientific publication
Dietary fats are harmful.	It depends on the type and amount of fat.	Lucas-Muñoz et al, 2021	Scientific publication
Light food is always healthier.	No, because healthy food does not depend on the calories but on its composition.	Lucas-Muñoz et al, 2021	Scientific publication
Breakfast is the most important meal of the day.	It depends on the individual and on the choice of food.	Lucas-Muñoz et al, 2021	Scientific publication
It is mandatory to eat 5 times a day.	No, it depends on the routine of each individual.	Lucas-Muñoz et al, 2021	Scientific publication
Eggs increase cholesterol.	No, it depends on the rest of the diet.	Lucas-Muñoz et al, 2021	Scientific publication
Lactose-free milk is healthier than milk containing lactose.	Only in the case of lactose-intolerant people.	Lucas-Muñoz et al, 2021	Scientific publication
Dietary supplements help weight loss.	There is no scientific evidence to show that dietary supplements help weight loss.	Batsis et al., 2021	Scientific publication
Dietary supplements and vitamins have no adverse effects.	Side effects of excessive and uncontrolled consumption of dietary supplements include risk of bleeding, interference with anaesthetics or decreased absorption of drugs through the gastrointestinal tract. In addition, specific antioxidants decrease the effectiveness of cancer chemotherapeutics and calcium decreases the efficacy of antibiotics of the tetracycline family. The same applies to vitamins, as excessive consumption of vitamins can also cause pathological conditions.	Mishra et al., 2021; Herradón, 2022a	Scientific publications
The intake of vitamins and minerals is recommended for apathetic states, fatigue, attention deficit and similar situations.	There is no scientific basis to show that these states are caused by nutritional deficiencies.	Herradón, 2022b	Well known newspaper

Dietary supplements can be taken on one's own initiative, without medical supervision.	From a scientific point of view, a dietary supplement should only be consumed in cases of need and on medical prescription or by a specialist in the biochemistry of nutrition, after analysis of the patient's analytical and clinical data.	Herradón, 2022b	Well known newspaper
Eating watermelon has the same effects as Viagra, due to citrulline.	Citrulline is found in higher concentrations in the rind of the watermelon, not in its flesh, which is what we eat.	Soriano del Castillo, 2023	Non-profit news media organisation
Some specific fat burning cream are supposedly capable of reducing 4 centimetres in 40 minutes when applied to the skin around the waist.	It is impossible because it goes against the laws of physics.	Soriano del Castillo, 2023	Non-profit news media organisation
Fresh produce is always healthier than canned, frozen, or dried alternatives.	Frozen, canned, and dried fruits and vegetables can provide just as much nutrition as fresh produce.	Egan, 2023	Well known newspaper
All fat should be avoided.	Good fats are also important for supplying energy, producing important hormones, supporting cell function and aiding in the absorption of some nutrients	Egan, 2023	Well known newspaper
Calorie intake is the most important factor for long-term weight gain.	The type of foods we eat are the long-term drivers.	Egan, 2023	Well known newspaper
Individuals with Type 2 diabetes should avoid fruit.	Individuals with Type 2 diabetes can benefit from the nutrients in fruit, including fibre, vitamins, minerals, and antioxidants.	Egan, 2023	Well known newspaper
Plant-based milks are healthier than dairy milk.	While plant-based beverages can have varying levels of nutrition, many have a higher amount of added ingredients that can contribute to poor health.	Egan, 2023	Well known newspaper
White potatoes are unhealthy.	Potatoes can benefit your health in many ways. In particular, they contain vitamin C, potassium, fibre, and other nutrients—especially when they are eaten with the skin.	Egan, 2023	Well known newspaper

Plant-based protein is incomplete.	All plant-based foods contain all 20 amino acids, including the nine essential amino acids.	Egan, 2023	Well known newspaper
Soy-based foods increase breast cancer risk.	This relationship has not been substantiated in human studies.	Egan, 2023	Well known newspaper
Nutrition guidance changes a lot.	Yes, science evolves, but bottom-line dietary guidance remains consistent.	Egan, 2023	Well known newspaper
There are superfoods with miraculous properties.	There are no superfoods because there is no food that possesses the extraordinary properties which may be attributed to it.	#SaludsinBulos	Non-profit news media organization
A juice is the same as a fruit.	Juice can be part of a healthy diet, but it is not equivalent to fruit and cannot replace it.	#SaludsinBulos	Non-profit news media organisation
Chickens are harmonised.	Europe has banned the use of traditional anabolic steroids, hormonal products, and β -agonists as growth promoters in all productive species.	#SaludsinBulos	Non-profit news media organisation

Source: CREA, 2018; Lucas-Muñoz et al, 2021; Batsis et al., 2021; Mishra et al., 2021; Herradón, 2022a y 2022b; Soriano del Castillo, 2023; Egan, 2023; #SaludsinBulos.

7. Final remarks

We are living in an era that involves various paradigmatic revolutions due to the new technologies and the Internet: it is the reign of presentism and acceleration, and everything seems to be just a click away. In a context of increasing complexity, this e-book highlights not only the risks of fake news related to nutrition and food, but also opportunities and good practices. The aim is to think and act about fact-checking from a perspective which is both multidisciplinary (legal, political, social, medical, nutritionist, psychological and communicational) and multilevel (international, national, regional and local).

As detected through our preliminary questionnaire, respondents are looking for solutions, mostly from education and legislation initiatives. Nevertheless, as we point out in the introduction of the e-book, the volume of information and discoveries in the web (both true and false) hampers the adoption of critical thinking and the passing of the necessary laws. Legislation lags far behind the need for regulation relating to technological innovation, and this has become a serious problem for nutrition, well-being and health, among other fields.

Moreover, nowadays, the influx of images is all important. According to Burdet Dombald (2023): “In this world of the Internet, the flesh body, the body-in-the-flesh, has become more absent in a real, shared space, but more present in a space mediated by technology: on screens or phones, creating an illusion of reality. This allows a range of possibilities – from passion to its opposite. Passion blooms exactly because of the absence of the body and a situation where everyone can project his own ideals and desires without limit and feels that projection as real. The opposite is also true: because of the lack of body, the relationship is more fragile, limited to its connective aspect and a lack of interest in the other”. The desire to attain the idealised representation of male and female figures projected through mass media and social media can have negative effects on the body (dis)satisfaction and the corresponding relation to nutrition and food, up to the point of being one of the factors involved in the development of eating disorders.

We hope this e-book, to which 4 editors, 15 researchers and 5 experts from 5 European countries have contributed, will promote new research in the field of nutrition and well-being fact-checking. Such research could focus on the need for regulation and

coordination of national and international standards, on the importance of the media and nutrition literacy to safeguard against eating disorders and body dissatisfaction, or other specific issues that we have referred to in the text.

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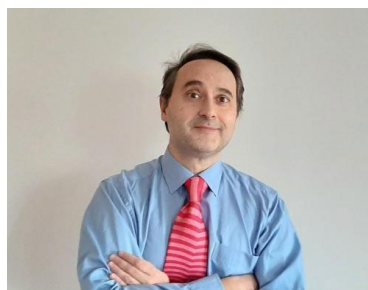
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10. Collaborating organisations



ICONO 14 journal provides a space for reflection and dissemination of scientific works whose subject matter deals with communication in its different areas from the perspective of Information and Communication Technologies, and especially emerging technologies, applied to different fields of knowledge, through basic or applied, experimental, descriptive or epistemological research.

Reference: [Revista ICONO 14. Revista científica de Comunicación y Tecnologías emergentes](#)



#SaludsinBulos (Health without hoaxes) is an initiative of the communication agency COM SALUD in collaboration with the Association of eHealth Researchers (AIES) that aims to combat health hoaxes on the internet and social networks and contribute to the existence of truthful and reliable information on the web. They have a large network of 'hoax hunters' - health professionals from different health fields - who help them to identify and dismantle fake news on the internet. They act jointly against hoaxes with the hashtag #SaludsinBulos on Twitter and Instagram.

Reference: [#SaludSinBulos | Información veraz y fiable sobre salud en Internet](#)

The logo for Torres & Carrera is centered within a solid red square. The text "Torres & Carrera" is written in a white, classic serif font. "Torres" is on the top line, and "& Carrera" is on the bottom line, with the ampersand being a decorative, calligraphic symbol.

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With more than 50 national and international awards, they are one of the most awarded Spanish agencies in their field. They have won up to 6 times an IPRA Golden World Award. The first in 2004 for a citizen think tank. The last, in 2022 for their social research on fake news and hoaxes circulating on social networks.

Reference: [Torres y Carrera](#)

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The aim of NUTRIWELLB is to promote fact-checking related to nutrition and well-being, to respond to the alarming increase of fake news and misinformation in these fields. Since there is no clear consensus in scientific literature or among the public about the precise definition of fake news, this e-book adopts a wide approach and attempts to address the problems deriving from a variety of factors: the overwhelming availability of information online that hinders cross-checking and assessment of the reliability of sources, misrepresentation of nutritional information, the promotion of nutritional choices for economic profit by lifestyle influencers or assumptions about nutrition and health that are present in everyday culture but rely more on faulty cause-attribution rather than on scientific findings.



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