

# Changing narratives

Over the past 50 years, the focus of nutritional narratives has shifted away from individual nutrients to the extent of food processing, the use of artificial ingredients and agri-food systems. These shifts have significantly impacted the fats and oils industry

*Eduardo Dubinsky*



Photo: Health Canada

The nutritional quality of a food is one of the most important aspects in its development. It is one of the criteria that we use to choose which foods to eat, along with taste and cost.

In the last 50 years, three different nutritional narratives have developed which have had an enormous impact on the food industry, impacting our diets and shaping the guidelines and regulations related to fats in foods. They consider:

- Nutrients as the basis of dietary recommendations.
- The degree of processing and the use of industrial ingredients and inputs as the main criteria for selecting an adequate diet.
- The crisis of the current global agri-food system and the need for urgent changes in the diet for human and planetary health.

## The nutrients narrative

The dominant nutrient or 'nutritionism' narrative around the mid-20th century was that all fats are responsible for cardiovascular disease (CVD). According to this narrative, the nutritional quality of all fats and oils is determined by their composition of fatty acids (saturated, monounsaturated, polyunsaturated, long-chain omega 3 and *trans*) and by their animal origin (presence of harmful cholesterol) or vegetable origin (presence of beneficial phytosterols).

Animal fats were classified as the most harmful to health due to their high content of saturated fatty acids and cholesterol, with recommendations to replace them with vegetable oils. Partially hydrogenated oils rich in *trans* fatty acids (TFAs) were the recommended replacement for saturated fats. This

became the dominant narrative and shaped US dietary guidelines, translating into different figures such as the food pyramids of the late 20th and early 21st centuries. These guidelines exerted a global influence to the point of being included on food packaging in many countries until just a few years ago.

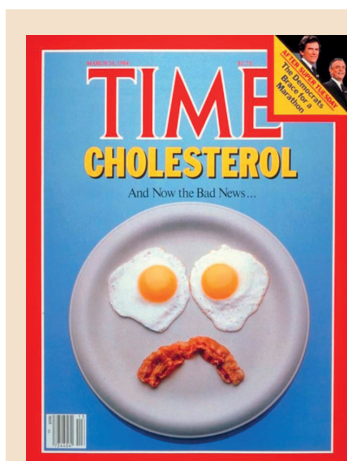
Guidelines, along with recommendations of leading health institutions such as the American Heart Association (AHA), aimed to limit cholesterol intake to 300mg/day and egg consumption to a maximum of three per week.

This narrative has changed significantly since the 1990s due to concerns over TFAs originating mainly from the partial hydrogenation of oils.

Although new research since the end of the 20th century showed that there was no scientific evidence linking cholesterol intake with CVD, it was only with the US 2015-2020 Dietary Guidelines that this cholesterol limit was eliminated.

The cover of two *Time* magazine editions in 1984 and 1999 (pictured left) illustrate how these two different food narratives appeared and disappeared. The covers led to mass dissemination of the research work on dietary cholesterol in scientific literature during the different time periods.

However, one issue with mass media reporting of scientific findings establishing probable relationships between diet and health is their reproduction without nuance. With the Internet and social networks of today, the multiplier effect is even greater now compared with the past. ▶



*Time* magazine cover from 26 March 1984 (left) and 6 September 1999 (right) illustrating the changing narrative on dietary cholesterol and mass media dissemination of research

Source: *E Dubinsky/Time*

## ► Trans fatty acids (TFAs)

Since the 1990s, there was increasing questioning of TFAs, which culminated in the first decades of this century with labelling regulations and restrictions on their content in foods in most countries and regions around the world.

At the beginning of this century, the issue became a strong one at a global level, causing a true revolution both in the food and oils and fats industries. The food industry had used partially hydrogenated vegetable oils as a 'healthy' replacement for saturated fats but the change in narrative regarding TFAs had a major impact.

McDonald's provides an illustration of this impact. In the early 1990s, the fast food chain completed a transition from animal fat to hydrogenated oil in the production of French fries. Just over 10 years later, it had to eliminate hydrogenated oils from its menu.

This new narrative on TFA became dominant during the first decade of this century, impacting national and global regulations. The broad consensus refers only to TFA originating from the partial hydrogenation of oils. Natural TFA (in fatty tissues of ruminant meat and especially in dairy products) continue to generate controversy. While some academic publications mention them as not harmful and even partially beneficial, as in the case of CLA (conjugated linoleic acid), there are other works that indicate that their effects are as negative as those of industrial origin.

The World Health Organization (WHO)'s latest guidelines on TFA (July 2023) "includes all fatty acids with double bonds in the *trans* configuration, regardless of whether they come from ruminant animal sources or are industrially produced".

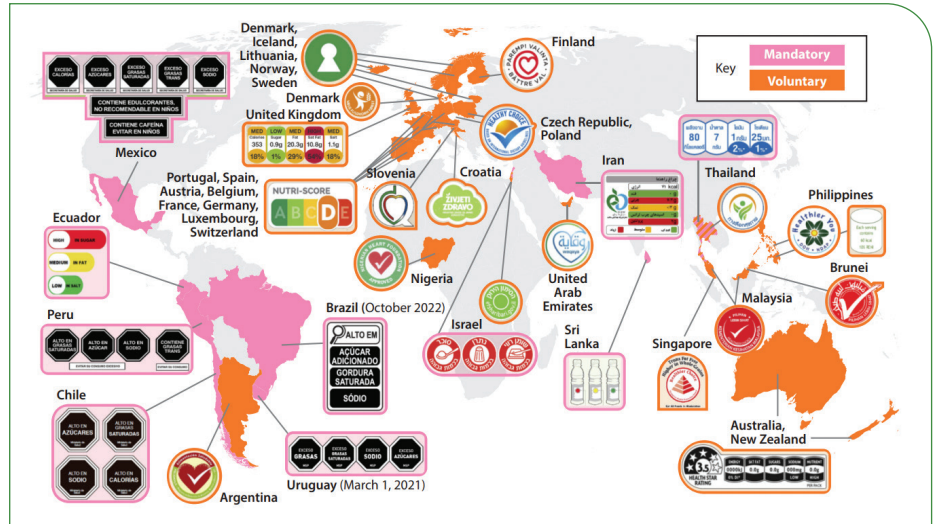
WHO's recommendation for adults is to limit consumption of *trans* fat to less than 1% of total energy intake, which is less than 2.2g per day for a 2000-calorie diet.

## Saturated fatty acids (SFAs)

The debate around fats, especially saturated fatty acids, is the clearest example of the limitations of nutrient-based narratives.

The different positions on the subject are crossed by commercial interests with a strong lobbying action (for and against); ethical, ideological and political aspects; and high media impact which often leads to an extreme polarisation of positions.

An example of narratives distorted by commercial interests was the sugar industry lobby against fats and cholesterol to divert attention from evidence that pointed to excessive sugar consumption as the main cause of CVD.



Source: E Dubinsky/Food Label Solutions

Figure 1: Front of packaging labelling systems around the world

Narratives that currently question the role assigned to saturated fats as the main cause of CVD have spread over the last decade. The most notable case is that of a journalist specialising in nutrition called Nina Teicholz, who started a crusade against the dominant narrative of saturated fats with a 2014 US best seller book, *The Big Fat Surprise – Why Butter, Meat and Cheese Belong to a Healthy Diet*.

The research behind the narrative shows that full-fat dairy products, meat and semi-sweet chocolate do not present a higher risk of CVD or diabetes, although there is a neutral or small association between butter and non-communicable disease (NCD). The research emphasises the need to take into account the complex food matrix with its content of proteins, micronutrients, phospholipids and probiotics, which converges with the criticism of the narrative on individual nutrients.

Despite this, regulations aimed at discouraging the consumption of saturated fats – such as mandatory or voluntary nutritional front of package labelling standards – still exist in different countries (see Figure 1, above). Almost all of these standards disclose saturated fat content, with advice to limit their consumption.

In line with these limits are recent updates to the WHO guidelines on carbohydrates and total saturated and *trans* fats, published in July 2023.

WHO reaffirms that adults should limit total fat intake to 30% of total energy intake or less. It says fat consumed by everyone two years of age and older should be primarily unsaturated fatty acids, with no more than 10% of total energy intake coming from saturated fatty acids and no more than 1% of total energy intake from TFAs from both industrially-produced and ruminant animal sources.

## Different chain lengths

Something that makes the issue of saturates even more complex is their different effects based on chain length, and the varying narratives related to this issue.

There is a fairly general consensus that stearic acid has a neutral effect on low density lipoprotein (LDL) or so-called 'bad' cholesterol, and hence on CVD risk. This would enable the replacement of palm oil and derivatives (especially partially hydrogenated fats with a high TFA content) with interesterified fats. Interesterified fats are produced via total hydrogenation of seed oils, resulting in zero *trans* fats, followed by interesterification. Fats are produced which are semi-solid at room temperature with the functionality for certain applications – such as bakery shortenings, vegetal toppings and fillings – for which liquid oils would not be suitable.

Coconut oil has also been the subject of chain length discussion, largely due to its high content of medium chain triglycerides (MCTs), mainly lauric acid with 12 carbon atoms, as opposed to seed oils and palm oil, which predominantly have chain lengths of 18 and 16 respectively.

The argument is that MCTs have a different metabolic pathway than long chain fatty acids, meaning they do not form esters with cholesterol and do not generate fatty deposits in the arteries. However, most of the literature on the subject establishes that the hypercholesterolemic effect of coconut oil is similar to that of other saturated fatty acids.

## Omega 6–Omega 3 ratio

As well as the focus on TFAs and saturates, another widely discussed topic has been the ratio between omega 6 and omega 3 fatty acids. Some scientists have hypothesised that a diet high in

omega-6s but low in omega-3s increases inflammation, while a diet that includes balanced amounts of each reduces inflammation, with an excess of omega-6 in Western diets being negative for cardiovascular health. However, there is no clear consensus on this issue.

## New narrative

Towards the end of the 2000s and as a consequence of worsening NCDs in the world, mainly caused by malnutrition, a new narrative began to spread criticising the dominant nutrients narrative. The starting point began with several articles published in 2008 by Gyorgy Scrinis, a researcher at Australia's University of Melbourne.

The new narrative challenges the focus on single nutrients as a reductionist way of approaching dietary health. On saturated fats, the new narrative emphasises that the health impact of SFAs depends on the interacting effects of naturally-occurring food components with unhealthy compounds introduced by processing.

"Instead of emphasising one nutrient, we need to move to food-based recommendations. What we eat should be whole, minimally processed, nutritious food that, in many cases, is as close to its natural form as possible," says Dariush Mozaffarian, a cardiologist, public health scientist and director of the 'Food is Medicine Institute' at the Friedman School of Nutrition Science and Policy at Tufts University, USA.

For him and other researchers, the narrative of nutritionism leaves out other dimensions of food that have a high impact on diets and their effects on health, such as its origin (vegetable, animal), the culinary traditions of different cuisines (such as the Mediterranean diet), the use of non-traditional chemical inputs in industrial food (colourants, flavourings, emulsifiers, preservatives), and the degree of food processing.

In parallel, the NOVA food classification system – with its concept of ultra-processed foods – was proposed in 2009 by Brazilian researcher Carlos Monteiro from the University of Sao Paulo. It has been adopted, directly or indirectly, by the dietary guidelines of the Pan American Health Organization (PAHO) and several national guidelines (Brazilian, Uruguayan, Argentinean), giving rise to countless studies that link ultra-processed foods to non-communicable diseases.

The NOVA system classifies food in four groups based on the extent of their processing:

Group 1: Unprocessed or minimally processed

Group 2: Processed culinary ingredients

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Group 3: Processed foods  
Group 4: Ultra-processed

An article published in the *British Medical Journal* in January 2024 concluded that "Greater exposure to ultra-processed food was associated with a higher risk of adverse health outcomes, especially cardiometabolic, common mental disorder, and mortality outcomes".

The NOVA classification has prompted wide discussion and criticisms.

## The agri-food system

There is a third level of narrative relating to the agri-food system, not only from the point of view of human health (malnutrition) but also the health of the planet (sustainability).

The urgent objective is to reformulate food and agricultural policies so that healthy diets are more accessible.

The 2024 UN Food and Agricultural Organization (FAO) annual report says that between 713-757M people may have faced hunger in 2023 and that more than one-third of people in the world – about 2.8bn – could not afford a healthy diet in 2022.

This is due to several factors – The food system as one of the largest contributors to global climate change; changes in lifestyles that induce consumers to adopt unhealthy and unsustainable dietary patterns; and how most efforts to transform the food system have wrongly focused on technological innovations in supply without due attention to the motivations behind the food choices of individuals and populations.

In the last 10 years, this new narrative has made strong headway, partially replacing the previous narrative that was

limited only to the issue of food shortages in relation to the rise in world population.

Loss of biodiversity; land and water use; impoverishment of soils; food waste; and the consumption of animal products such as meat and dairy are all linked to the agri-food system issue.

Points of divergence have been in the way to mitigate risks, resist catastrophes and generate changes. On the one hand, intensive agriculture and livestock farming that rely on technology and Agriculture 4.0 (precision agriculture, gene editing) based on the digital revolution and biotechnology are touted as solutions.

On the other hand, agroecology and ancient agricultural practices carried out by small producers are proposed as the most appropriate way to reduce the impacts caused by land use and the application of agrochemicals.

## Conclusions

Narratives linked to lipids and nutrition have changed in the past decades. In relation to saturated fats, the narrative which originated in the mid-20th century continues to shape global recommendations and national policies.

In the last decades of the 20th century, this has had profound impacts on the production and consumption of food, the strongest example of which has been the replacement of saturated fats with fats rich in *trans* fatty acids originating from the partial hydrogenation of oils. Another consequence was the recommendation to replace all types of fats, especially saturated fats, with fat substitutes based mainly on carbohydrates.

Today, the view is that these recommendations have contributed to malnutrition, obesity and NCDs.

In recent decades, new narratives have emerged with strong criticism of "nutritionism" as a view that reduces the complexity and multi-dimensional richness of food to the positive or negative effect of the nutrients that make up the food.

The narrative of nutritionism has created confusion in labelling, regulations and guidelines among health professionals and consumers, covering up knowledge acquired over generations about the beneficial nature of natural and whole foods, dominant in some cuisines such as the Mediterranean diet.

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