

**Brief Communication**

## Initiatives to Regulate Industrially Processed Foods in Nepal

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Trans-fatty acids, commonly referred to as trans fats, were discovered in the early 20<sup>th</sup> century with the development of hydrogenation – a chemical process that converts liquid vegetable oil into solid fats. Initially perceived as a healthier alternative to saturated fats due to their stability during cooking and longer shelf life, more recent research has linked trans fats to a number of adverse health outcomes.<sup>1</sup>

There are two types of trans fats: naturally occurring and artificial. Naturally occurring trans fats are found in small amounts in meat and dairy products from ruminant animals, such as sheep, cows, and goats, where the fats are formed in the gut of the animal. By contrast, artificial trans fats, also known as industrially produced trans fatty acids (iTFAs), are created through hydrogenation, which is the process utilized in the production of margarine and shortening.<sup>1</sup>

The consumption of trans fats leads to increased LDL (bad) cholesterol and decreased HDL (good) cholesterol levels. This unfavorable cholesterol profile can contribute to cholesterol accumulation in the arteries, elevating the risk of heart disease and stroke.<sup>2</sup> The inclusion of trans fats as part of the daily diet increases the risk of coronary heart disease by 21% and the risk of death due to the disease by 28%.<sup>3</sup> The consumption of trans fats also promotes inflammation, which can lead to the development of stroke, diabetes, and other chronic illnesses from excessive activation of the immune system. Moreover, consuming trans fats disrupts the normal functioning of the endothelial cells lining the inner wall of blood vessels, thereby compromising their responsiveness.<sup>4</sup>

Trans fat is present in many processed and fried foods, including snacks and fast foods.<sup>1</sup> The amount of trans fat in a food item depends on the number of times vegetable oil is heated during preparation, with increased heating leading to more significant health consequences. Specifically in South Asian cuisine, dishes cooked in vegetable ghee and certain steamed vegetable sweets like *Jerry*, *Lalmohan*, and *Gundpak* have been found to contain excessive amounts of trans fats.<sup>5</sup>

According to the World Health Organization (WHO), there is no safe level of trans fat consumption; WHO recommends the intake of trans fats be limited to less than 1% of total daily energy intake.<sup>6</sup> To provide a comprehensive strategy for eliminating iTFAs from the global food supply, the WHO introduced the REPLACE package, which contains a set of practical actions and guidelines for governments, industries, and civil society to make concerted efforts toward achieving this goal.

The REPLACE package comprises six strategic actions represented by the acronym REPLACE:

- Review dietary sources of trans fats,
- Promote the replacement of trans fats with healthier alternatives,

- Legislate or enact regulations to eliminate trans fats,
- Assess and monitor trans fat content in foods,
- Create awareness and educate about the risks of trans fat, and
- Enforce compliance with policies and regulations.

Through the implementation of the REPLACE package, the WHO aims to protect public health, prevent cardiovascular diseases, and improve diets worldwide.<sup>6</sup>

South Asian countries have taken significant steps to address the health risks associated with trans fats by implementing policies and regulations to limit their presence in the food supply. For example, India introduced mandatory labeling requirements for trans fats in packaged foods in 2021 and committed to phasing out trans fats by 2022, aligning with the WHO’s REPLACE package.<sup>7</sup> Bangladesh has also made substantial progress by passing regulations in 2013 that set a maximum limit of 2% trans fats in all food products.<sup>8</sup> Similarly, in 2015, Sri Lanka set a maximum limit of 2% trans fats in partially hydrogenated vegetable oils and spreads. Later, in 2020, the country introduced regulations to ban the import, production, and sale products containing iTFAs.<sup>9</sup>

### Nepal Initiative and Marching Towards a Milestone

In Nepal, steps towards initiating the regulation of trans fats in industrially processed food commenced in 2021. The Nepal Heart Foundation (NHF), a non-governmental organization, assumed the initial leadership role in undertaking multifaceted activities, such as raising awareness, conducting advocacy (primarily with the government, food industries, and hoteliers), and engaging in collaborative efforts with government agencies to develop and prepare regulatory laws.<sup>11</sup>

NHF’s one primary initiative was creating a specific term to denote trans fat, followed the dissemination of this terminology through media channels and other platforms. Prem Raj Baidya, MD, MS, a senior cardio-vascular surgeon, took on the leadership role as the director of the Transfat Elimination Project on behalf of the NHF. In 2022, a Nepali word, ‘Aakhachi’ (an acronym implying extremely unhealthy fat), was coined, and is gaining increasing usage across various forums in Nepal.<sup>5</sup>

Dr. Baidya asserted, “We are constantly informing the public through various media, including brochures, posters, and pamphlets, along with running health camps.”<sup>5</sup> For instance, the NHF conducted an extensive household survey encompassing 843 participants residing in 8 districts to assess their comprehension and utilization of trans fats. The press release titled “Importance on Legal Measures to Limit the Trans-Fat in the Food Products in



Prem R. Baidya, MD, MS

Nepal” has also been instrumental in raising awareness of the project’s awareness and educating the general public.<sup>10</sup>

Prakash Raj Regmi, MD, FACC, a professor of cardiology at the National Academy of Medical Sciences in Kathmandu, and a core member of the NHF Transfat Elimination Project, emphasized, “The number of non-communicable diseases in Nepal is increasing day by day. In 2010, the number of deaths from non-communicable diseases was 51 percent of the total deaths, and in 2016, it increased to 66 percent.”<sup>5</sup> Additionally, non-communicable diseases (NCDs) related conditions accounted for the majority (80%) of the top 10 causes of disability in the country.<sup>10</sup> The consumption of an unhealthy diet stands out as one of the most influential factors contributing to the rapid growth of NCDs.<sup>10</sup>



Prakash R. Regmi, MD, FACC

The NHF has actively collaborated with the Health Ministry and other key stakeholders to advance their objectives. For example, the implementation of stakeholder mapping proved beneficial in enlightening individuals unaware of their influential position in regulating trans fat.<sup>10</sup> The NHF has also supported the Department of Food Technology and Quality Control (DFTQC), Nepal’s sole government agency entrusted with enforcing food regulations and standards. Through this collaboration, the NHF has assisted the DFTQC in formulating regulations and standards that will be incorporated into the Multisectoral NCD Action Plan for the period 2021-2025. Their concerted efforts aim to effectively minimize the presence of industrially produced trans fatty acids (iTFAs) in packaged food products, striving to achieve a threshold below 2% by 2023.<sup>11</sup>

As an integral part of this initiative, it is anticipated that the Government of Nepal will eventually mandate the disclosure of trans fat levels on nutrition labels on food products, accompanied by a precise definition of iTFAs to ensure effective monitoring in technical regulations.<sup>11</sup> Moreover, the collaborative efforts among relevant public and private agencies are expected to facilitate the implementation of the various strategic interventions outlined in the WHO’s REPLACE action package. This comprehensive package encompasses supporting food industries in adopting innovative technologies to substitute iTFAs with healthier oils and fats, conducting regular assessments and data collections to quantify trans fat content in products, tracking changes in consumption patterns within the population, and ensuring diligent compliance monitoring across the entire supply chain, which is crucial for the effective enforcement of legal measures concerning iTFAs.<sup>11</sup> Dr. Regmi accentuates, “The sooner we can control trans fat consumption, the better. That is why we are engaged in this campaign.”<sup>5</sup>

The DFTQC is planning to submit a draft of the ‘Nepal trans fat standards’ bill to the Council of Ministers in the near future. Upon its endorsement, the bill will be published in the Nepal Gazette, establishing it as a legally binding standard for adoption in the country. This will be followed by the development of legal provisions. Dr.

Baidya, one of the bill’s architects, hopes, “Before December of this year, Nepal is anticipated to be will be listed as an industrial trans fat free country, like some other countries in the region.” He further notes, “This achievement will mark a crucial milestone in enhancing the quality of life of the Nepali population.”

The reduction of trans fat consumption, achieved through a combination of public awareness campaigns and mandatory regulations in the industrial sector, is anticipated to not only mitigate the risk of NCDs, but also to yield extensive benefits for the healthcare system, to improve the well-being of individuals and families, and ultimately, foster national development and productivity.

The initiative undertaken by the NHF, and the pace of progress in collaboration with various organizations, such as WHO and the Government of Nepal (principally, the Ministry of Health and Population and the DFTQC) towards regulating trans fats in industrially processed foods in Nepal is, indeed, commendable. Once the standards and legal provisions have been established and regulatory mechanisms put into effect, the subsequent phase of the challenge involves assessing their effectiveness in implementation on a sustained basis.

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