

Trans Fatty Acids in Global Diets Drive Higher Liver Mortality Rates in Non-Alcoholic Fatty Liver Disease

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Introduction

Trans Fatty Acids (TFAs), prevalent in processed foods like margarines, shortenings and fried products, have emerged as a critical dietary risk factor for Non-Alcoholic Fatty Liver Disease (NAFLD), a condition marked by excessive liver fat accumulation that can progress to severe outcomes, including liver mortality. Research highlights the global burden of TFAs, which are industrially produced through partial hydrogenation to enhance food shelf life and texture but contribute to metabolic dysfunction and liver damage. Studies, such as those examining dietary risks for NAFLD and TFA prevalence in food supplies, underscore how these fats exacerbate liver disease progression by promoting inflammation and insulin resistance. As global consumption of processed foods rises, particularly in regions with limited regulatory oversight, the link between TFAs and increased liver mortality in NAFLD patients has prompted urgent calls for public health interventions to reduce dietary TFA exposure and mitigate their harmful effects on vulnerable populations [1].

Description

The role of TFAs in driving liver mortality in NAFLD is rooted in their metabolic and inflammatory effects, which worsen liver health. TFAs, commonly found in hydrogenated oils used in processed foods, elevate low-density lipoprotein cholesterol, reduce high-density lipoprotein cholesterol and induce systemic inflammation, all of which accelerate fat accumulation in the liver and progression to severe NAFLD stages like Non-Alcoholic Steato Hepatitis (NASH). Research using global burden of disease data indicates that high TFA intake significantly increases liver-related mortality among NAFLD patients, particularly in populations with diets heavy in processed foods. In regions like Slovenia, studies have identified margarines and shortenings as key TFA sources, highlighting the need for better food composition monitoring. These findings emphasize that reducing dietary TFAs could lower the risk of liver damage and mortality, especially in high-risk groups with NAFLD.

Global efforts to curb TFA consumption face both progress and challenges. Regulatory measures, such as bans on partially hydrogenated oils in countries like Canada and the European Union, have reduced TFA levels in food supplies, but implementation lags in low- and middle-income countries where processed foods remain dietary staples. The World Health Organization's REPLACE initiative seeks to eliminate industrially produced TFAs globally, advocating for reformulation and stricter labeling. However, challenges like

industry pushback and weak enforcement in some regions hinder progress. Public health campaigns aim to educate consumers about TFA risks, while studies stress the importance of monitoring local food supplies to inform policy. Reducing TFAs in diets is critical to alleviating the global NAFLD burden and associated liver mortality [2].

Conclusion

Trans fatty acids in global diets significantly increase liver mortality rates in non-alcoholic fatty liver disease, driven by their role in promoting inflammation and metabolic dysfunction. Regulatory efforts and dietary reforms show promise in reducing TFA exposure, but disparities in implementation across regions highlight the need for stronger global action. By enhancing food monitoring, enforcing TFA bans and promoting healthier eating habits, public health initiatives can mitigate the impact of TFAs on NAFLD, ultimately reducing liver mortality and improving health outcomes worldwide.

Acknowledgement

None.

Conflict of Interest

None.

References

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Received: 01 February, 2025, Manuscript No. CSJ-25-168664; **Editor Assigned:** 03 February, 2025, Pre QC No. P-168664; **Reviewed:** 15 February, 2025, QC No. Q-168664; **Revised:** 20 February, 2025, Manuscript No. R-168664; **Published:** 27 February, 2025, DOI: 10.37421/2160-3494.2025.16.437

How to cite this article: Rebernik, Klemen. "Trans Fatty Acids in Global Diets Drive Higher Liver Mortality Rates in Non-Alcoholic Fatty Liver Disease." *Chem Sci J* 16 (2025): 437.