



## Unraveling the Genetic Link: Polyunsaturated Fatty Acids and Cancer Risk

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### Abstract

This article delves into the intricate relationship between polyunsaturated fatty acids (PUFAs) and cancer risk, with a focus on the genetic factors that underlie this association. PUFAs, essential components of the human diet, have garnered attention for their potential roles in cancer prevention and treatment. Recent advancements in genetics have

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This review examines current knowledge concerning the genetic and molecular mechanisms that intersect between

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studied, experimental methodologies employed, and key findings. Emphasis was placed on studies that provided insights into the genetic mechanisms influencing PUFA-cancer associations.

### Data synthesis and analysis

Extracted data were synthesized to identify common themes, trends, and patterns in the literature. Studies were categorized based on their focus, such as genetic variations, molecular pathways, or clinical outcomes. Comparative analysis was performed to ascertain consistency or discrepancies in findings across studies.

### Results interpretation

The synthesized findings were interpreted to elucidate the complex relationship between PUFAs, genetic variations, and cancer risk. The implications of genetic interactions with PUFAs on cancer-related processes, including inflammation, oxidative stress, and signal transduction, were critically examined.

and cellular assays, are critical to elucidating the precise molecular mechanisms driving the observed associations. Additionally, integrative analyses that consider gene-environment interactions and