

## Evaluating the Impact of Cooking and Fermentation Processes on the Nutritional Quality and Health Benefits of Seafood

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### Abstract

Seafood has long been recognized for its significant role in promoting human health, and it is rich in essential nutrients such as omega-3 fatty acids, high-quality proteins, vitamins, and minerals. Seafood consumption has been linked to numerous health benefits, including enhanced cardiovascular health, reduced inflammation, and improved cognitive function. Fish and shellfish, like salmon, clams and shrimp, are particularly high in protein plus vitamins and minerals, like vitamin B12, selenium and zinc. Clams and wild-caught salmon are highly nutritious seafood choices with notable health benefits. A 3-ounce (85-gram) serving of cooked clams delivers over 3,500% of the Daily Value (DV) for vitamin B12, 99% for selenium, 21% for zinc and 13% for iron. Conversely, a half-fillet (154-gram) serving of wild-caught salmon provides 196% of the DV for vitamin B12, 131% for selenium, 85% for vitamin B6 and 21% for potassium. These findings emphasize the remarkable nutritional benefits of both clams and salmon, illustrating their important role in a balanced diet. Seafood is low in fat, low in calories, and rich in essential minerals, vitamins, and protein. Effective preservation of seafood is crucial for maintaining its quality and extending its shelf life. This paper explores preservation techniques: cooking methods and fermentation. Cooking methods- boiling, steaming, grilling and preservation methods- canning, freezing, drying, pickling, and curing affect seafood's chemical and microbial properties, enhancing its safety and shelf life by killing pathogens and inactivating spoilage enzymes. Fermentation, on the other hand, leverages microbial activity and pH changes to preserve seafood. By combining these techniques, seafood preservation can be optimized, balancing safety, quality, and longevity. This article provides a comprehensive understanding of how these methods impact seafood preservation, facilitating the development of tailored strategies for maintaining seafood quality.

**Key Words:** Seafood, Nutrition, Cooking, Fermentation, Human health

