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Managing Dyslipidaemia with Functional Foods and Dietary Supplements

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Abstract

Cardiovascular disease risk factor dyslipidaemia is characterised by elevated blood levels of total or LDL cholesterol and triglycerides, or lower HDL cholesterol levels. Dyslipidaemia is very common throughout the world, and many patients are using non-pharmacological methods instead of pharmaceuticals to control their lipid levels. To lower cardiovascular risk in all patients, lifestyle modification should be emphasised. It can be started before pharmacotherapy in the primary prevention of cardiovascular disease. There has been research done on numerous natural health products and functional foods for lipid-lowering potential. The biochemical effects of soy protein, green tea, plant sterols, probiotic yoghurt, marine-derived omega-3 fatty acids, and red yeast rice on plasma lipid levels are well supported. Other products like seaweed, bebeerine, hawthorn, and garlic might have a little therapeutic effect in some patient populations. Even while none of these products can lower cholesterol levels as much as statins, most of them are safe to use alongside other pharmacological treatments and lifestyle changes. There is little conclusive proof that natural health supplements sold to people with dyslipidaemia, like policosanol, guggulsterone, and resveratrol, have a positive effect on biochemistry. In order to evaluate relationships with cardiovascular end points, additional research in this area is necessary. This should involve sizable, high-quality randomised controlled trials with protracted follow-up times [1-5].

Keywords: Seafood • Fish Functional • Food Health • Benefits bioactive • Dyslipidaemia

Introduction

In order to maximise profitability, the Norwegian fish sector wants to produce more goods with value added. In this paper, four crucial research tasks in this area will be briefly presented. We have used the Random Amplification of Polymorphic DNA (RAPD) technique to assist in identifying the species contained in a product. By using this method, the DNA in the sample can be fingerprinted. The use of DNA typing for fish product species identification is discussed. Foods' nutritional content is crucial. Although it has been hypothesised that the Greenlandic Eskimos' low death rate from coronary heart disease is largely attributable to their consumption of fish, it is important to keep in mind that the traditional Eskimos' daily diet consists of sizable amounts of meat and fat (blubber) from seals and whales. It will be discussed a recent study on the effectiveness of seal and whale oils compared to cod liver oil in altering biological parameters that may be significant in explaining the low incidence of coronary heart disease, asthma, and psoriasis among Greenland Eskimos. Since it impacts yield and the quality of the fish flesh, rigour mortis development must be taken into account when commercially processing fish. Also mentioned is the impact of early processing (pre-rigor) on fish quality and production. Fish species vary widely in terms of morphological structure and overall chemical makeup. The amount of water in the flesh might change depending on its characteristics and how it is handled. It is discussed how the shape and liquid-holding capabilities of cod and salmon muscle change with temperature.

Discussion

The world's burgeoning population needs to be fed, but traditional land-based systems find it difficult to keep up with the demand. Some of the world's poorest people are supported by marine production, but it is also increasingly meeting the needs of the wealthy, whether through direct fishing or through fodder-based feeds for both marine and terrestrial farming. Here, we demonstrate how humans are increasingly using the ocean's productivity to feed themselves. Our findings show how marine foods are derived increasingly further away from the point of consumption each year and also demand a growing amount of the ocean's primary productivity, which supports all marine life. Even while agriculture encourages more seafood consumption, it still needs feeds made from properly utilised natural stocks. Here, we look at the ocean's capacity to supply human needs in the future.

The consumption of functional foods and dietary supplements is rising among those who are at high risk of cardiovascular disease, yet there is little clinical advice available for the use of secure and efficient supplements. According to research, patients with dyslipidaemia can benefit from using goods like soy protein, green tea, plant sterols, probiotic yoghurt, marine-derived omega-3 fatty acids, and red yeast rice that contains lovastatin. In select patient populations, products like seaweed, bebeerine, hawthorn, and garlic may have a small lipid-lowering benefit. Guggulsterone, resveratrol, and policosanol are unlikely to decrease cholesterol. Pharmacotherapy can be combined with functional foods and dietary supplements to promote extra lipid lowering, and they may even allow for drug dose reduction. Fish management involves assuring correct handling by identifying hazards and critical control points (HACCP) and maintaining a "cold chain" from catch to consumption because time-and-temperature abuse is necessary to develop high amounts of histamine in fish. The European Commission validated a well-known precolumn dansylation-based HPLC method through inter-laboratory collaboration and investigated method equivalence with the AOAC fluorescence method 977.13 recognised by Codex Aliment Arius. Reference methods for the detection of histamine have drawn more attention. In the past ten years, significant progress has been achieved in the development and validation of quick screening techniques for histamine detection in food, particularly fish products. These comprise numerous cutting-edge sensors and numerous commercial test kits that have been validated, many of which are based on a recombinant version of the histamine enzyme [6-10].

The preventive effects of seafood consumption against cardiovascular diseases (CVD) have been principally linked to its health advantages. Consumption of seafood, however, has also been linked to improved foetal and newborn development as well as a number of other ailments and health issues. The long-chain n-3 polyunsaturated fatty acids (n-3 PUFA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA), are primarily responsible for the health-promoting effects. Additionally, it is thought that the overall fatty acid profile is beneficial. On the other hand, current and ongoing studies on the nutritional benefits of seafood proteins and other substances obtained from seafood suggest that these substances play a role in the health consequences. We explore the nutritional properties and health advantages of marine foods and ingredients in this study, as well as some current and upcoming trends in marine

Conclusion

An essential component of human health, particularly bone health, is the mineral calcium. It is widely recognised that marine biological calcium is a plentiful supply with a complicated active structure. This study assesses the state of research on marine biological calcium in terms of its sources, use of calcium supplements, bioavailability, and innovative applications. The potential for future development and application of goods containing marine biological calcium in the pharmaceutical, healthcare, and food industries as well as biomedical research are also examined. This review's objective is to offer thorough documentation on the use of resources and product creation using marine species. The impact of feeding laying hens meals containing 5% marine by-products on egg production, composition, and sensory qualities was examined. There are two ways to prepare meals made of marine by-products: (i) cooking at 100°C for 10 minutes, followed by drying at 60°C for 24 hours, or (ii) grinding and drying. Visas from scallops, squid, prawns or whole mackerel were utilised as raw materials to make supper. One control diet (based on corn and soy beans) and eight experimental meals, each containing 95% of the control feed and 5% of the experimental meal for three weeks, were given to 108 laying hens in total. The amount consumed daily was higher in the hens given the cooked shrimp and dried mackerel meals. All of the experimental treatments, especially those using scallop or squid cooked using both procedures, had considerably greater concentrations of n-3 HUFA in yolk reserves and phospholipids than the control. When scallop, squid, and shrimp meal was added to the feed, eggs had higher astaxanthin (0.22 mg per 100 g) than eggs from the control and mackerel treatments, which lacked this pigment.

References

1. Banci L, Ciofi-Baffoni S, Tien M Lignin *et al.* Peroxidase-catalyzed oxidation of phenolic lignin oligomers. *Biochemistry*. 38, 3205-3210 (1999).
2. Li WC. Occurrence, sources, and fate of pharmaceuticals in aquatic environment and soil. *Environ. Pollute.* 187, 193-201 (2014).
3. Alam N, Najam R. Effect of repeated oral therapeutic doses of methylphenidate on food intake and growth rate in rats. *Pak J Pharm. Sci.* 28 9–13(2015).
4. Saraswat A. Topical corticosteroid use in children: Adverse effects and how to minimize them. *Indian J. Dermatol. Venereol. Leprol.* 76, 225–228 (2010).
5. Ryan C, Ross S, Davey P *et al.* Prevalence and causes of prescribing errors: The PRescribing Outcomes for Trainee Doctors Engaged in Clinical Training (PROTECT) study. *PLoS ONE*. 9, 69–143 (2006).
6. Beggs S. Paediatric analgesia. *Aust Prescr.* 31, 63–65 (2008).
7. Patrick DM, Marra F, Hutchinson J *et al.* Per capita antibiotic consumption: How does a North American jurisdiction compare with Europe? *Clin Infect Dis*. 39, 11–17 (2004).
8. Heberer T. Occurrence, fate, and removal of pharmaceutical residues in the aquatic environment:A review of recent research data. *Toxicol Lett.* 131, 5–17 (2002).
9. Kosek M, Bern C, Guerrant RL. The global burden of diarrhoeal disease, as estimated from studies published between 1992 and 2000. *Bull World Health Organ.* 81, 197–204(2003).
10. Rossi M, Giorgi G. Domperidone and long QT syndrome. *Curr Drug Saf.* 5, 257–262 (2010).