

Elasmobranchs as bio indicators of contamination within the marine environment

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Introduction

Marine pollution not only poses a threat to marine ecosystems but also directly impacts human health. This article explores the human health concerns associated with marine pollution in water, examining the pathways of exposure, the health risks posed by contaminants, and the potential consequences for communities living in coastal areas. Understanding these concerns is crucial for implementing preventive measures and safeguarding the well-being of individuals who depend on marine resources for their livelihoods and sustenance. Seafood, such as fish, shellfish, and mollusks, can accumulate pollutants like heavy metals (mercury, lead, and cadmium), Persistent Organic Pollutants (POPs), and harmful algal toxins. Consuming contaminated seafood is a primary route of exposure for many individuals, particularly those reliant on marine resources as a food source. People engaging in recreational activities, such as swimming, surfing, or diving in polluted coastal waters, can come into direct contact with contaminants present in the water. This can lead to skin irritations, respiratory problems, and infections. Aerosols generated by breaking waves and sea spray can carry pollutants and microorganisms, which can be inhaled by individuals in close proximity to the shoreline or living in coastal areas.

Description

POPs, including Polychlorinated Biphenyls (PCBs) and organochlorine pesticides, are known to be carcinogenic and endocrine disruptors. They can lead to hormonal imbalances, reproductive disorders, immune system dysfunction, and increased cancer risks. Consumption of shellfish contaminated with harmful algal toxins, such as saxitoxin and domoic acid, can result in paralytic shellfish poisoning, amnesic shellfish poisoning, and other neurological disorders. Marine waters can harbour pathogenic bacteria, viruses, and parasites, leading to gastrointestinal illnesses, skin infections, respiratory infections, and other waterborne diseases. Communities living in close proximity to polluted coastal areas are at a higher risk of exposure to marine

contaminants, primarily through seafood consumption and direct contact with contaminated water. These communities often rely on marine resources for sustenance and livelihoods, exacerbating their vulnerability. Indigenous populations that depend heavily on traditional fishing practices and subsistence lifestyles are particularly susceptible to the health risks associated with contaminated seafood consumption. Their cultural practices and close connection to the marine environment make them more reliant on the availability of clean and healthy marine resources. Socioeconomically disadvantaged groups may lack access to alternative food sources, making them more reliant on seafood from polluted areas.

Conclusion

Marine pollution in water poses significant concerns for human health, particularly for communities relying on marine resources. Contaminants can enter the human body through seafood consumption, direct contact with contaminated water, and inhalation of aerosols, leading to various health risks. Vulnerable communities, such as coastal and indigenous populations, are disproportionately affected. Addressing these concerns requires a multi-faceted approach, including monitoring and regulation, sustainable fishing practices, public awareness, improved waste management, and conservation efforts.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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