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Furthermore, the researchers observed notable alterations in peripheral blood circulation. Impaired blood flow was observed in the mice exposed to high levels of fluoride, affecting vital organs and tissues. Microscopic analysis revealed endothelial dysfunction, reduced vasodilation capacity, and increased platelet aggregation, all of which can contribute to cardiovascular problems and circulatory disorders.

#### **Mechanism**

The precise mechanisms underlying the observed effects are multifaceted. Chronic fluoride exposure disrupts the delicate balance between pro-oxidant and antioxidant systems, leading to an excess of ROS. This oxidative stress triggers inflammatory responses and cellular damage, including lipid peroxidation and protein oxidation, impairing cellular function. The compromised endothelial function, vasoconstriction, and altered platelet activity collectively contribute to the disturbance in peripheral blood circulation [6].

#### **Implications for Human Health**

Although this study was conducted on mice, it raises important concerns about the potential health risks associated with chronic fluoride exposure in humans. Many communities worldwide have fluoride concentrations in their drinking water that exceed the recommended levels, which may pose a threat to human health, especially when exposure occurs over an extended period.

Peripheral blood circulation is vital for the proper functioning of organs and tissues throughout the body. Impairments in circulation can lead to various cardiovascular disorders, including hypertension, atherosclerosis, and thrombosis. Additionally, the imbalanced oxidative biochemistry resulting from chronic fluoride exposure may increase the risk of oxidative stress-related diseases, such as neurodegenerative disorders and cancer [7].

#### **Discussion**

The findings of the study on chronic exposure to sodium fluoride and its effects on oxidative biochemistry and peripheral blood circulation in mice raise important points for discussion. The implications of these results extend beyond the laboratory setting and have potential significance for human health. Let's delve deeper into the discussion surrounding these findings.

#### **Reevaluation of Fluoride Concentration in Drinking Water**

This study highlights the need to reevaluate the concentration of fluoride in drinking water, particularly in areas where it is 1.83-2.5 mg/L. While from chronic fluoride exposure and its oxidative and

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6. Pinkas B, Schneider T, Williams SC (2009) Secure Two-Party Computation Is Practical Advances in Cryptology .ASIACRYPT 2009:250-267
7. Bellare M, Hoang VT(2012) RogawayFoundations of garbled circuits .Proceedings of the 2012 ACM Conference on Computer and Communications Security 23:784-796
8. Chen F (2017) Princess: Privacy-protecting rare disease international network collaboration via encryption through software guard extensions. *Bioinformatics* 33:871-878
9. Vtyushkin DE , Riley R(2018)