

A Hypothesis on the Etiology of Polar T3 Syndrome and Related Polar Syndromes: The Role of Atmospheric /Oceanic Iodine in Human Hormonal Cycles in Polar Regions

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Emerging evidence suggests that atmospheric and oceanic iodine cycles may influence human metabolic and hormonal profiles in polar environments. The Polar T3 Syndrome-characterized by altered triiodothyronine (T3) kinetics, cognitive impairment, and metabolic adaptations during prolonged Antarctic residence-could partially stem from unique iodine dynamics in these regions.

Previous preliminary studies suggest atmospheric iodine might influence metabolic-hormonal networks that intersect with viral susceptibility [1][2][3][4][5][6][7][8][9][10][11][12][13]. While direct rigorous evidence linking atmospheric iodine cycles (or other forms such as oceanic or nutritional iodine) to COVID-19 outcomes remains absent, the theory posits that iodine-mediated shifts in thyroid function (e.g., altered T3/T4 ratios) could modulate immune-metabolic pathways, potentially affecting disease severity.

A mechanism somehow like the above mentioned, could be responsible for some aspects of regulatory network of polar syndromes biologic-system (in the realm of systems dynamics, systems biology, epigenetics, pathophysiology, metabolomics, precision medicine and AI/ML biology studies [1][8][14][15]).

According to modern and advanced interdisciplinary studies (and consistent with previously proposed concepts in complementary medicine traditions such as Iranian and Chinese medicine), even small amounts of bioactive natural, botanical, phytochemical, metabolite, organic, or mineral substances could exert regulatory effects on the body's metabolic, hormonal, microbial, epigenetic, bacterial flora and physiological systems.

Using proper and rigorous controlled experiments, and also using advanced computational methods (such as hybrid semantics-aware data-driven approaches [16]), could promote studies and findings in this research area.

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