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Is there a role for iodine in breast diseases?

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Abstract

It is hypothesized that dietary iodine deficiency is associated with the development of mammary pathology and cancer. A review of the literature on this correlation and of the author's own work on the antioxidant function of iodide in iodide-concentrating extrathyroidal cells is reported. Mammary gland is embryogenetically derived from primitive iodide-concentrating ectoderm, and alveolar and ductular cells of the breast specialize in uptake and secretion of iodine in milk in order to supply offsprings with this important trace-element. Breast and thyroid share an important iodide-concentrating ability and an efficient peroxidase activity, which transfers electrons from iodide to the oxygen of hydrogen peroxide, forming iodoproteins and iodolipids, and so protects the cells from peroxidative damage. The mammary gland has only a temporary ability to concentrate iodides, almost exclusively during pregnancy and lactation, which are considered protective conditions against breast cancer.

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