

- **Taking Vitamin C with Iodine**

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- **Vitamin C: Using Nutrition to Improve Iodine Transport Defect To Help Iodine Enter Cells**

- Abraham GE and Brownstein D., Evidence that the Administration of Vitamin C Improves a Defective Cellular Transport Mechanism for Iodine: A Case Report, The Original Internist 2005.

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- (There is no abstract available. To read the entire study, go to: http://www.optimox.com/pics/Iodine/IOD-11/IOD_11.htm)

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- *Editor's Summary:*
- *Drs. Abraham and Brownstein describe a case of using nutrition - vitamin C and chloride - to improve the function of a defective iodine cellular transport system to help iodine enter cells. To help enable iodine to be absorbed by the cells, two iodine transport systems, the sodium/iodide system (NIS) - one atom of iodine is transported into cells and two atoms of sodium are transported out of cells, and the chloridide/iodide (pendrin) system help facilitate the transportation of iodine into cells. Rarely, these iodine cellular transport systems can become blocked or damaged, leaving cells iodine-deficient. In this case report, on an iodine-loading test, a woman excreted 90% of the iodine, which usually implies iodine sufficiency, but the high excretion rate was coupled with a low serum inorganic iodide level, suggesting a defect in the iodine retention mechanism. She also had elevated levels of bromide - a toxic halide - in her urine and serum. The elevated bromide may have caused oxidative damage to the iodine transport system. Since chloride competes with bromide and increases the elimination of bromide, chloride was administered at 10mg/day for one week. The result: A marked increase in bromide excretion. Plus, she was given the antioxidant vitamin C at 3gm/day for three months. At the end of three months of nutrititonal support, she increased her baseline serum inorganic iodide level, and her retention of iodine was increased from 10% to 50%. This case report presents evidence of nutrition helping to improve the function of the iodine cellular transport mechanism.*

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- **IODINE AND BREAST CANCER SUMMARY: Does Iodine Act as an Anti-Estrogen, Like the Drugs, Arimidex and Tamoxifen?**

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- From Eskin BA's study, Iodine and Mammary Cancer, cited in the IODINE and BENIGN BREAST DISEASE section, iodine is stated to be a requisite element for normal breast tissue. Iodine deficient tissues show changes in, among other things, estrogen receptor proteins. Supplementing with iodine would make the breast tissue less susceptible to stimulation from excess estrogen, which is produced by the ovaries in an iodine-deficient state and courses through the blood. Thus, iodine acts as an anti-estrogen.

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- Arachidonic acid (polyunsaturated fats) and its metabolites, COX and LOX, exert a
- dedifferentiative effect on breast tissue. "PGE2, as a product of cyclooxygenase (COX),
- stimulates the gene expression of aromatase in the fatty tissue of the breast, whereby
- intramammary estrogen increases". (Torremante P., Mastopathy, Breast Cancer and
- Iodolactones, cited in the IODINE'S MECHANISMS of ANTI-TUMOR ACTION section.)
- Plus, in the Hartmann et al. study in the IODINE and BENIGN BREAST DISEASE section,
- the 41 out of 235 women who had atypia who went on to develop breast cancer, had
- significantly higher levels of COX-2 or cyclooxygenase-2, the enzyme produced in the
- body when there is inflammation and which is also produced in precancerous tissues.

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- When arachidonic acid becomes iodinated (bound to iodine), the iodolactones that are
- formed inhibit the EGF (epidermal growth factor) receptor, whereby the metabolism of
- arachidonic acid induced by EGF and TGF α (powerful growth factors) is inhibited.

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- Thus, powerful arguments can be made that iodine may be a de facto anti-estrogen and
- aromatase inhibitor in the manner of the drugs, Arimidex and Tamoxifen.

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- **Calling for Iodine to be Considered as an Adjuvant Therapy for Breast Cancer**

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- Carmen Aceves, in her review article, *Is Iodine a Gatekeeper of the Integrity of the*
- *Mammary Gland?*, cited in the IODINE'S MECHANISMS of ANTI-TUMOR ACTION section,
- states, "We propose that an I2 (iodine) supplement should be considered as an
- adjuvant in breast cancer therapy."