**Carotenoids, vitamin A and risk of adenomatous polyp recurrence in the polyp prevention trial.**

One trial reported beta-carotene supplementation was protective of adenomatous polyp recurrence in nonsmokers. We now examine the relation of serum and dietary carotenoids and vitamin A to adenomatous polyp recurrence in a subcohort of 834 participants in a low fat, high fiber, high fruit and vegetable dietary intervention, the Polyp Prevention Trial. Multivariate odds ratio (OR) and 95% confidence intervals (CI) of polyp recurrence were obtained using baseline or the average (first 3 years of the trial) carotenoid and vitamin A values after adjustment for covariates. Compared to the lowest quartile of baseline alpha-carotene concentrations, the OR of multiple polyp recurrence for the highest quartile was 0.55 (95% CI = 0.30-0.99) and the OR of right-sided recurrence was 0.60 (95% CI = 0.37-0.95). Baseline dietary intakes of alpha-carotene and vitamin A from food with/without supplements were inversely associated with any recurrence (p for linear trend = 0.03-alpha-carotene; p = 0.004 and p = 0.007 -intakes of vitamin A). Compared to the lowest quartile of averaged beta-carotene concentrations, the OR of multiple adenomas for the highest quartile was 0.40 (95% CI = 0.22-0.75) with an inverse trend (p = 0.02). The risk was inversely related to averaged: alpha-carotene concentrations and right-sided polyps; alpha-carotene intake and recurrence of any, multiple and right-sided polyps; beta-carotene intake and multiple adenoma recurrence; vitamin A from food (with supplements) and each adverse endpoint. Thus, alpha-carotene and vitamin A may protect against recurrence in nonsmokers and nondrinkers or be indicative of compliance or another healthy lifestyle factor that reduces risk.

**Celiac disease and its endocrine and nutritional implications on male reproduction.**

The problem of the interference of celiac disease (CD) with the male reproductive system is made evident both by the recognized adverse effects on female reproduction and by the multifactorial nature of the disease. It is important to consider CD as a multifactorial condition since its diverse effects can be modulated, besides gluten, by different concurrent genetic and environmental factors. The male CD patient has a greater risk of infertility and other reproductive disturbances, as well as a greater incidence of hypoandrogenism. In this paper the problems of CD associated to endocrine disorders and to deficiencies of micronutrients are discussed. Affected males show a picture of tissue resistance to androgens. Moreover, attention should be paid to increases of FSH and prolactin; these are not associated to infertility and/or impotence, but they may indicate an imbalance at hypothalamus-pituitary level, with general effects on health: an example is the increased risk of male osteoporosis in CD patients. Hormone alterations are reversible upon start of the gluten-free diet, emphasizing the importance of early diagnosis; this should be performed in the case of clinical suspicion, e.g., unexplained hypoandrogenism. As regards nutritional aspects, the folic acid deficiency of CD can affect rapidly proliferating tissues, such as the embryo and the seminiferous epithelium. More attention should be paid to deficiencies of fat-soluble vitamins, such as A and E, observed in CD. Vitamin A is important for Sertoli cell function as well as for early spermatogenetic phases. Vitamin E supports the correct differentiation and function of epidydimal epithelium, spermatid maturation and secretion of proteins by the prostate. Therefore, CD male patients should be considered as vulnerable subjects; thus, the detection of early biomarkers of andrological or endocrinological dysfunctions should trigger timely strategies for prevention and treatment.
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