

**Plasma/Serum Lycopene and Disease Risk
Bladder Cancer Critical Findings**

Disease type	First Author	Study Title and Complete Citation	Date	Abstract	Study Type	G.Tom +, N, -	P.Tom +, N, -	F.Tom +, N, -	Lyc+ , N, -	Other +, N, -
Cancer: bladder	Hung RJ	Protective effects of plasma carotenoids on the risk of bladder cancer. Hung RJ, Zhang ZF, Rao JY, Pantuck A, Reuter VE, Heber D, Lu QY. J Urol. 2006 Sep;176(3):1192-7.	2006	<p>PURPOSE: We examined the associations between plasma micronutrients and bladder cancer risk, and evaluated the combined effects of carotenoid and cigarette smoke.</p> <p>MATERIALS AND METHODS: We performed a case-control study in 242 patients with bladder cancer and 204 healthy controls at Memorial Sloan-Kettering Cancer Center from 1993 to 1997. Epidemiological data and blood specimens were collected on 84 cases and 173 controls. Plasma micronutrients, including lutein, zeaxanthin, beta-cryptoxanthin, lycopene, alpha-carotene, beta-carotene, retinol, alpha-tocopherol and gamma-tocopherol, were determined by high performance liquid chromatography. The logistic regression model was used to estimate the effects from carotenoid, tocopherol and retinol on the risk of bladder cancer.</p> <p>RESULTS: Based on quartiles of plasma micronutrient levels and continuous variables, adjusted ORs were estimated for bladder cancer after controlling for potential confounders, including patient age, sex, education and pack-years of smoking. When using plasma levels of micronutrients as continuous variables, the adjusted OR was 0.22 (95% CI 0.05 to 0.92) for alpha-carotene, 0.42 (95% CI 0.18 to 1.00) for lutein, 0.16 (95% CI 0.02 to 1.06) for zeaxanthin, 0.94 (95% CI 0.89 to 0.99) for lycopene and 0.90 (95% CI 0.81 to 1.00) for beta-cryptoxanthin. The adjusted OR for the joint effect of plasma carotenoids and tobacco smoking was 6.22 (95% CI 1.87 to 20.8) in smokers with lower lutein and 5.18 (95% CI 1.57 to 17.1) in smokers with lower zeaxanthin.</p> <p>CONCLUSIONS: Our results show protective effects of carotenoids on bladder cancer. They suggest that bladder cancer may be a preventable disease through nutritional intervention, especially in smokers.</p>	CC				(-)/N ↓ risk	