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Putative cancer chemopreventive agents of dietary origin - how safe are they?

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As cancer chemopreventive agents are intended for use by healthy individuals as prophylactics to prevent or retard the development of cancer, they must be amenable to ingestion over prolonged periods without toxicity. Therefore, putative chemopreventive agents need to undergo stringent testing to ensure their safety with regard to chronic exposure in humans. The diet is thought to be a source of chemopreventive agents, and dietary compounds are generally considered to be of low hazard, albeit this notion has not often been put to the test. Here the safety information available for 5 dietary putative chemopreventive compounds, indole-3-carbinol (I3C), curcumin, quercetin, epigallocatechin gallate (EGCG), and capsaicin is reviewed. For these agents, normal dietary intake, doses used in clinical trials, efficacious doses in rodents, and where available, toxic doses are compared. For curcumin, quercetin and capsaicin, toxicological data is only available from studies in rodents. Information on long-term effects in animals beyond 28 or 90 days is lacking for EGCG. **Capsaicin and quercetin are suspected carcinogens.** I3C and quercetin can modulate the absorption of other drugs given concomitantly. **Without further investigation of their toxicology, it is difficult to recommend any of these agents for long-term use in the healthy population.**

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