

New evidence on why alcohol consumption is a risk factor for cancer

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Why is alcohol consumption a risk factor for cancers of the oral cavity, pharynx, larynx, and esophagus? Scientists long have suspected that the culprit is acetaldehyde, a compound produced as the body breaks down the alcohol in beer, wine and hard liquor.

Now researchers in Japan have discovered direct molecular evidence supporting that link between acetaldehyde and alcohol-related cancers. In a report published in the current (October) issue of the monthly ACS journal *Chemical Research in Toxicology*, Tomonari Matsuda and colleagues studied DNA from the blood of 44 patients being treated for alcoholism.

They found that those patients with a variation in the aldehyde dehydrogenase gene also had increased amounts of the kind of DNA damage that can lead to cancer. The gene produces an enzyme that breaks down acetaldehyde. Individuals with the gene variant produce little aldehyde dehydrogenase and high levels of acetaldehyde build up in their blood after alcohol consumption.

Millions of people have the gene variant, which occurs mainly in individuals of East Asian heritage. "Taken together, the observations from biochemical, epidemiological, and molecular studies, in conjunction with this study, well fit the scenario that acetaldehyde is a primary causative factor in alcohol-induced cancers," the scientists report.

Source: American Chemical Society

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