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**Alcohol
&
Cancer**

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Be it joy, be it jilt, be it celebration or be it cessation of life, one thing that accompanies them all is consumption of alcohol. "Saraku adi da machan (have a drink) "probably equals " Nanben da (You my buddy) " in usage and grosses one of the highest tax revenue to the Tamil Nadu government. A report shows that the percapita consumption of alcohol in Karnataka to be close to 3 litres annually and if one excludes the teetotalers then the figure climbs to 19.7 litres of absolute alcohol or in terms of whiskey or brandy which is 40% alcohol it would be nearly 50 litres and in terms of beer (4- 8 % alcohol) it would be 250 to 500 litres that is 375 to 750 bottles a year or 1 to 2 per day ! Does this buddy who keeps so close a relationship to humans increase the risk for cancer? Yes!

consumption is on daily basis of more than 40 g per day for men and 20 g for women. Binge drinking which amounts to more than 60 g of alcohol translating to 2 ½ bottles of beer episodically has equal and in fact exceeds the risk for alcohol related diseases.

The most common disease categories that are entirely or partly caused by alcohol consumption include infectious diseases, cancer, diabetes, neuropsychiatric diseases (including alcohol use disorders), cardiovascular disease, liver and pancreas disease, and unintentional and intentional injury.

The association of alcohol and cancer is now well established and a number of cancers have an increased risk with alcohol usage. The deadliest of them all is



**Increased risk
for cancers of
mouth, tongue,
gullet, foodpipe,
large intestine,
breast
& prostate**

Consumption of alcohol is measured in grams of alcohol and it varies from country to country. If in USA it is 14 grams it can be as high as 25 g in Japan and as low as 8 gm in Britain. By US standards 1 unit equals 36 ml (little more than one peg) of hard liquor (whiskey , rum , brandy) or 330 ml (½ bottle) of beer or 150 ml of wine. Alcohol related diseases become increasingly common when

Hepatocellular cancer (liver Cancer) . Regular consumption of more than 80 grams of alcohol per day for more than 10 years increases the risk for HCC approximately 5-fold, approaching an absolute risk of about 1% per year in alcoholic liver cirrhosis. Nearly 40 % of this type of cancer can related to alcohol use. Most patients with this type of cancer present in an advanced state and cure is very difficult.



**14 g alcohol = 36 ml of
hard liquor = 150 ml wine
= 330 ml beer**

The second group of cancers with increased risks is the cancers of the mouth, tongue and the gullet. Herein there is a synergistic effect caused by tobacco use. In one study it was shown to increase the risk of cancers by 38 fold and in some as high as 100 fold. Even if adjusted for tobacco use (deducting the effect of tobacco) the increase in this group of cancer is 3.2 to 14 fold ! There was a clear dose relationship and in case of tongue the site of cancer varied according to extent of alcohol usage. Alcohol consumers seldom consume the same drink every day and it was found that whatever be the predominant drink, is the one that had a direct relationship to the occurrence of cancer.

Drinking also increases the risk of esophageal & colorectal cancers. Alcohol consumption significantly increases the risk for breast cancer and especially of the hormone sensitive type, those that are positive Estrogen and / or progesterone receptors. And consuming 3 drinks per week increases the risk of recurrence in breast cancer affected. Prostate cancer has an increased risk with alcohol consumption but it is with very high usage of 7 drinks or more per day.

The type of alcohol that is generally consumed is Ethanol, methanol is contaminated in illicit liquor at times and isopropyl alcohol is a common ingredient of cleaning agents and is used in laboratories. Alcohol is absorbed in the small intestine and metabolized in the liver. The primary metabolic product of alcohol is acetaldehyde which is a carcinogen. It acts directly on DNA and can alter their configuration and cause an effect that can lead to a malignant transformation of the cell. They can act indirectly by releasing free radicals, cause release of Tumor necrosis factor and affect the DNA repair mechanisms. Alcohol can also cause immune impairment in the liver and increase the damage caused by viral infections.

While these are the direct mechanisms by which alcohol increases the risks there are several more that add to its

effect. Top most is associated tobacco usage. Nutritional deficiencies, associated illnesses, behavioral problems and many more factors all join in enhancing the risk.



Cessation of alcohol decreases the risks that were accumulated by consumption but they are not dramatic or quick. The quitters' risks decrease to the teetotalers in 10 - 20 years depending on the cancer.

In vedic times it is believed that there were 2 types of alcoholic drinks – Soma & Sura. Soma was consumed by the elite and Sura by the warriors to increase their valour. In modern times there are innumerable types available and both elite & the commons consume all sorts. It is part of the social life and lies deeply embedded. If you cannot do away with it, consume in moderate quantities of less than 40 g/ day and dissociate it from its buddy – tobacco. **Cheers!**