

Mini Review

Nutrients with Binge Drinking in the College Students

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Abstract

Binge drinking is very much related to alcoholism, however, as alcoholism is a serious disease and alcohol abuse can damage the body even in a single binge drinking. This mini- review will discuss whether or not binge drink influences on nutrients intake with increased negative consequences.

Key words: binge drink, nutrient, alcoholism. College student

Introduction

Alcohol is the most commonly used substance by college students [1, 2]. Underage drinking is a major contributor to all three leading causes of death for this age group: unintentional injury, homicide, and suicide [3-5] almost half of U.S. high school graduates transition to college after high school, and rates of problem drinking are higher among college students compared with those among no college-attending peers [6].

Binge drinking College students are drinking more heavily and more frequently than ever before. The largest drinking population in college students. Bars near campus typically promote heavy drinking. Alcohol producers frequently target college students with advertising and other marketing efforts. Adding to the overall problem is the fact that approximately half of all college students are not yet of legal drinking age. In fact. The annual overall cost related to underage alcohol use is estimated at more than \$78 billion. This includes cost associated with violent crime, traffic accidents, treatment, and alcohol poisonings [7, 8]. This mini- review will discuss whether or not binge drink influences on nutrients intake with increased negative consequences.

Binge drinking

Binge drinking-having four or more drinks in a row women, or

five or more for men-is common among college students [9, 10]. Binge Drinking by this group is done so in moderation and the main reported purpose of drinking is to “get drink.” About 60% of college students engage in binge drinking [11]. Acute alcohol intoxication, which can result from such rapid consumption of a large quantity of alcohol, is a major cause of suicide and hazing deaths related to binge drinking[12]. Being drinking has a variety of contraindications. It can lead to unplanned sexual activity, injury to oneself or others, and even death. Death due to alcohol misuse can result, for example, from inhalation of vomit. In other cases, the body systems slowly down because of alcohol’s overpowering depressant effect. Other injuries can occur, resulting in paralysis or other lifelong medical problem. Regular binge drinking can lead to academic failure, because binge drinking can more likely to miss class than are students who are light drinkers or abstainers [13]. Property damage, as a result of vandalism and accidents, can be another consequence of binge drinking [14]. Students who live around binge drinkers experience more unwanted sexual advance, assaults, and insults/humiliation despite the array of negative outcomes, binge drinkers often do not think they have a problem, because their behavior has become so acceptable on college campuses.

Although binge drinkers do lose control when drinking, which is one of the signs of alcoholism, they do not usually display more than one or, at most, two warning signs of alcoholism. It’s important to keep in mind that just because binge drinking is not alcoholism does not mean it is safe. Binge drinking can lead to alcoholism too particularly amongst the young [15, 16]. That is why it is important to either stop drinking altogether or to consumption.

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Nutritional problems are common, among alcoholics, alcohol abuse can interfere with nutrient intake if alcohol replaces some or all of food in the diet. When an individual relies on alcohol for the majority of his or her energy needs, protein-energy malnutrition can result [17, 18]. The symptoms of this protein-energy malnutrition are similar to those seen in children with marasmus. In addition to potential protein and energy deficiencies, deficiencies of a variety of other nutrients are possible, particularly certain vitamins and minerals [19, 20 and 21].

Water-soluble vitamins

Excessive alcohol intake can lead to deficiency in the water-soluble vitamins thiamin, niacin, vitamin B-6, Vitamin B-12, folate, and vitamin C [17, 18]. Thiamin deficiency can be caused by decreased intake or decreased absorption of thiamin. The typical symptom includes polyneuropathy and nervous system problems. Often patients with extreme thiamin deficiency are admitted to the hospital and must be given thiamin injections to recover from this medical emergency, which, if untreated, can result in irreversible paralysis of ocular muscles, neuropathy with loss of sensation in lower extremities, loss of balance with abnormal gait, and memory loss. In patients with decreased thiamin stores, administration of large amount of intravenous glucose can accelerate the system of thiamin deficiency. The metabolism of alcohol requires large quantities of niacin as NAD^+ and $NADP^+$, thus limiting the amount of niacin available for other metabolic activities in the body. If one consumes a diet low in niacin and consumes insufficient protein, they are at risk for niacin deficiency and the corresponding classic deficiency disease, pellagra. Acetaldehyde, the primary metabolite of alcohol, can interfere with vitamin B metabolism. Acetaldehyde displaces B-6 from its binding protein, resulting in increased vitamin B-6 urinary excretion. If the alcohol consumer eats a diet with inadequate amounts of Vitamin B6, he or her risk for developing anemia and peripheral neuropathy. Excessive alcohol intake can also impair the absorption of vitamin B12 as a result of decreased release of the digestive enzyme trypsin by the pancreas. Trypsin is needed to release vitamin B12 from the R-protein so that it can then be bound by intrinsic factor and be absorbed by the body. Insufficient intake of folate by an individual who abuses alcohol can be especially problematic. Folate deficiency may lead to a decreased number of absorptive cells in the small intestine, which then can result in decreased absorption of other nutrients.

Fat-soluble vitamins

Excessive alcohol intake can also result in deficiency in the fat-soluble vitamins A, D, E and K [17,22]. Vitamin A deficiency may be caused by a deficient diet, by increased metabolism and biliary excretion, or by an inability of the liver to produce the vitamin. Vitamin A stores in individuals with alcoholism are diminished regardless of whether dietary vitamin intake is low, adequate, or high. Vitamin A concentrations are especially low in individuals with alcoholic's cirrhosis. Vitamin D deficiency can result from

inadequate dietary intake of the vitamin or lack of exposure to sunlight [19]. A pancreas damaged by alcohol releases fewer fat digesting enzymes, resulting in decreased vitamin D absorption [23, 24]. A liver damaged by alcohol is compromised in its ability to convert vitamin D to the biologically active hormone form [22, 25]. Vitamin D deficiency can also result in reduced calcium absorption and increased parathyroid hormone secretion, both of which can lead to the development of osteoporosis. Deficiencies in vitamin E and K also occur in individual who have alcohol-damaged pancreases. Here again, the damaged pancreases is less able to release necessary digestive enzyme, leading to impaired digestion and absorption of fat and fat-soluble nutrients. Individual with alcoholic liver disease are less able to synthesize vitamin K clotting factors while individual with vitamin E deficiency can develop peripheral neuropathy and tunnel vision.

Minerals

Individual who abuse alcohol can also develop problems with magnesium, zinc, and iron metabolism [26,27]. Severe alcohol abuse can result in magnesium deficiency by increasing urinary excretion of this mineral. Alcohol can develop low blood concentrations of magnesium, which can result in tetany, characterized by muscle twitches, cramps, carpal pedal spasms, and seizures. In addition, impairment of the central nervous system can also result. Magnesium deficiency is partly responsible for the hallucinations experienced by people withdrawing from alcohol intoxication. Alcoholics can develop zinc deficiency as a result of decreased zinc absorption as well as increased urinary excretion [28]. The consequences of alcoholism combined with zinc deficiency include changes in taste and smell, loss of appetite, trouble seeing at night, and impaired wound healing. Both iron deficiency and iron overload are possible in alcoholics, excessive alcohol consumption can damage the gastrointestinal tract and cause GI bleeding [19]. This bleeding can eventually result in an iron deficiency. In contrast, alcohol can also increase the uptake and storage of iron in the liver, which can hasten the development of cirrhosis.

Conclusion

Remind to researchers the more problems are to alcohol consumption and binge drinking how to related dietary intake with following American dietary guideline among college students who had high rates of both alcohol use and alcohol-related negative consequences.

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