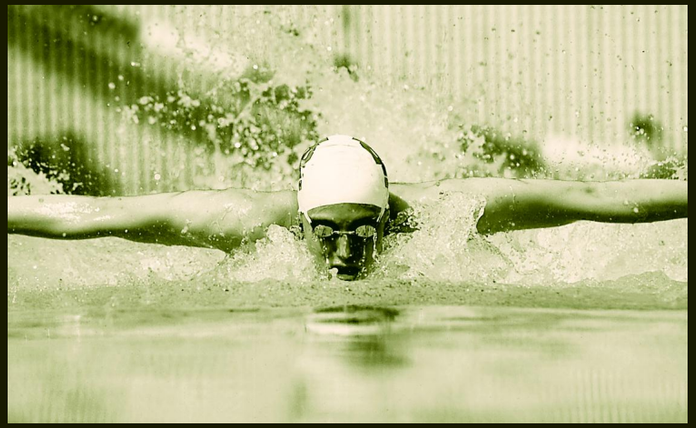
For the Athlete: Alcohol and Athletic Performance



As an athlete, you know that achieving optimal performance involves practicing hard, hitting the weight room, and being on top of your game, both mentally and physically.

However, many athletes tend to underestimate the way in which alcohol use, even a few drinks, can nullify your hard work by erasing the effects of your workouts, reducing your endurance, and compromising your mental game.

The goal of any athlete is to be at the peak of performance. Your body is the instrument of performance, so treat it with care.

This brochure will educate you on:

- **The negative effects of alcohol on muscles, learning, and nutrition**
- **How to recognize at-risk behavior by using checklists and scenarios**
- **How to help yourself or a friend by using the resources provided**

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How Alcohol Affects Muscle Development and Recovery

Alcohol use cancels out gains from your workout. Everyone knows that working out while under the influence of alcohol is dangerous because of the likelihood of injury. However, few athletes realize that consuming alcohol after a workout, practice, or competition can cancel out any physiological gains you may have received from such activities. Not only does long-term alcohol use diminish protein synthesis resulting in a decrease in muscle build-up, but even short-term alcohol use can impede muscle growth.

Alcohol causes dehydration and slows down the body's ability to heal. Speeding the recovery of sore muscles and injuries is integral to optimal performance. Alcohol is a toxin—a toxin that travels through your bloodstream to every organ and tissue in your body, causing dehydration and slowing your body's ability to heal itself.

Alcohol use prevents muscle recovery. In order to build bigger and stronger muscles, your body needs sleeps to repair itself after a workout. Because of alcohol's effect on sleep, however, your body is robbed of a precious chemical called "human growth hormone" or HGH. HGH is part of the normal muscle-building and repair process and the body's way of telling itself your muscle needs to grow bigger and stronger. Alcohol, however, can decrease the secretion of HGH by as much as 70 percent! Also, when alcohol is in your body, it triggers the production of a substance in your liver that is directly toxic to testosterone. Testosterone is essential for the development and recovery of your muscles.

Alcohol use depletes your source of energy. Once alcohol is absorbed through your stomach and small intestine and finally into your cells, it can disrupt the water balance in muscle cells, thus altering their ability to produce adenosine triphosphate (ATP), which is your muscles' source of energy. ATP provides the fuel necessary for your muscles to contract.

Alcohol also reduces energy sources by inhibiting a process known as gluconeogenesis in which glucose is formed from substances other than glucose. When alcohol is oxidized by alcohol dehydrogenase (an enzyme), it produces an elevation of NADH, which ultimately reduces the amount of a coenzyme that is essential in the production of ATP. This loss of ATP results in a lack of energy and loss of endurance.

How Alcohol Affects Your Ability to Learn New Plays and Strategies

Alcohol use inhibits ability to learn new information. Any athlete knows that preparation, such as learning plays and sound strategies, is essential to peak performance. However, alcohol can have a devastating effect on this process. When there is alcohol in your system, your brain's ability to learn and store new information is inhibited due to compromising of the hippocampus, a structure deep in the brain vital to the formation of memories. If you cannot form new memories, you cannot learn.

Alcohol use hampers memory and retention. Unfortunately, it is not as simple as just not drinking while studying plays and before team meetings. Memory formation is a complex process that takes a long time. Many of your memories are solidified when you are not thinking about the material. In fact, much of memory formation occurs while you sleep.

Alcohol affects your sleep cycle by disrupting the sequence and duration of normal sleep, reducing your brain's ability to learn and retain information. Even drinking up to six hours before you go to sleep will negatively affect your sleep cycle. For example, if you drink after a day of classes, studying, or learning new plays, you are not getting 100 percent out of your efforts because of the effects of the alcohol you drank.

Consider this:

- Consuming five or more alcoholic beverages in one night can affect brain and body activities for up to three days.
- Two consecutive nights of drinking five or more alcoholic beverages can affect brain and body activities for up to five days.

How Alcohol Affects Nutrition and Endurance

Alcohol use constricts metabolism and endurance. Being physically fit and well-conditioned is the hallmark of a champion. However, no matter how many wind sprints and laps you do, drinking alcohol constricts your aerobic metabolism and endurance.

Alcohol use requires increased conditioning to maintain weight. Alcohol holds very little nutritional value to the athlete. The relatively high calories in alcohol are not available to your muscles. Alcohol calories are not converted to glycogen, a form of stored carbohydrates, and thus are not a good source of energy during exercise. Each drink contains approximately 100–150 empty calories. The body treats alcohol as fat, converting alcohol sugars into fatty acids.

Alcohol use inhibits absorption of nutrients. Not only is alcohol devoid of proteins, minerals, and vitamins, it actually inhibits the absorption and usage of vital nutrients such as thiamin (vitamin B_1), vitamin B_{12}, folic acid, and zinc.

- **Thiamin** (vitamin B_1) is involved in the metabolism of proteins and fat and the formation of hemoglobin. It is also essential to optimal performance for its role in metabolizing carbohydrates.
- **Vitamin B_{12}** is essential to good health. It helps maintain healthy red blood and nerve cells.
- **Folic acid** is an integral part of a coenzyme involved in the formation of new cells; a lack of it can cause a blood disorder called "megaloblastic anemia," which causes a lowering of oxygen-carrying capacity and thus negatively affects endurance activities.
- **Zinc** is also essential to your energy metabolic processes. Since alcohol depletes your zinc resources, the effect is an even greater reduction of your endurance.

Taking a Look at Your Own Use

Many people can use alcohol in a low-risk way without negative effects. There are some people, however, who use alcohol and experience a variety of problems, some of which can be quite serious or life threatening. If you use alcohol, it is important to periodically take a look at your drinking behaviors and the effects that go with them to determine if you are at risk.

Answer the following questions to evaluate your drinking habits:

In the past 12 months	Yes	No
Have you skipped a meal prior to drinking or drunk on an empty stomach?	☐	☐
Have you consumed alcohol while on medication (prescription or over-the-counter)?	☐	☐
Have you been unaware of the alcohol content of your drinks?	☐	☐
Have you participated in drinking games?	☐	☐
Have there been times when you have used alcohol to deal with stress?	☐	☐
Have you ever used alcohol to escape depression?	☐	☐
Have you ever used alcohol in response to an argument or problem in a relationship?	☐	☐
Have you ever drunk for the effect or the "buzz" when you are alone?	☐	☐
Have most (60 percent or more) of your weekend social experiences included drinking?	☐	☐
Have you tended to drink quickly for the effect when you first arrive at a party?	☐	☐
Have you and your friends encouraged excessive drinking or drunken behavior?	☐	☐
Do you regularly consume alcohol with the intention of getting drunk?	☐	☐
Have you embarrassed yourself while drinking or done things you later regretted?	☐	☐
Have you participated in high-risk activities (driving, boating, skiing) while drinking?	☐	☐
Have you been injured, or have you injured someone else while drinking?	☐	☐
Have you damaged property while drinking—either on purpose or accidentally?	☐	☐
Have you engaged in unwanted or unsafe sexual activity when drinking?	☐	☐
Have you ever experienced a blackout or memory loss while drinking?	☐	☐
Have friends or family members worried or complained about your drinking?	☐	☐
Is it difficult for you to control or limit your drinking after you've had a few drinks?	☐	☐
Do you believe that your drinking is causing problems in your life?	☐	☐
Have you missed class because you were recovering from a hangover?	☐	☐
Has drinking interfered with your ability to get schoolwork done on time?	☐	☐
Have friends or family had to care for you when you were intoxicated or passed out?	☐	☐
At Any Time		
Has drinking caused a marked change in your personality (verbal cruelty, fighting)?	☐	☐
Have you been cited for abusive drinking or violation of the alcohol policy on campus?	☐	☐
Have you ever been ticketed for an alcohol-related offense pertaining to being a minor?	☐	☐
Have you ever been arrested for an alcohol-related offense (DUI, Disorderly Conduct)?	☐	☐

Each of these questions represents a "red flag" that may suggest the presence of difficulties with alcohol or the development of an alcohol problem. Answering "yes" to any of these questions may suggest you are experiencing some problems with alcohol that you might not have realized, so it is a good idea to be aware of it to make sure it does not get worse. If you have answered "yes" to three or more of the questions, this suggests that there are several red flags present when it comes to your alcohol use. In this case, you may want to talk to a professional to gain a better understanding of your situation (see On Campus and South Bend Area Resources at the end of this brochure).

How Can You Tell if One of Your Teammates Is Having Difficulties with Alcohol?

Many people can use alcohol in a low-risk way without experiencing difficulties. However, there are those people who use alcohol and have a variety of negative experiences, which may suggest a more serious problem.

Figuring out when a teammate's drinking is no longer low-risk and has developed into a problem can be tricky at times, especially since some people think there is a stigma associated with having alcohol-related problems. In fact, it is not uncommon for your friend to do everything he or she can to explain away or hide a problem.

Check the sidebar for some signs you can look for to help you decide if a teammate's alcohol use has become high-risk.

- Your teammate may say something like "I can stop drinking anytime," yet does not.
- You may notice that the teammate begins to lie about things, especially how much alcohol he or she has consumed.
- He or she may be getting drunk on a regular basis.
- He or she may be passing up things to do such as parties, dances, sporting events, or hanging out with friends because alcohol will not be present.
- Your teammate may be drinking alone or hiding his or her drinking from others.
- You notice he or she drinks more alcohol to get the same high experienced in the past.
- Your teammate may pressure others to drink.
- Conversations, stories, and social activities always involve alcohol.
- Drinking occurs before practice or classes.
- Your teammate may drive after drinking.
- You notice that he or she passes up on meals, studying, or other activities because of hangovers.
- He or she may have been in trouble with the University or coaches, or may have been arrested.
- Your teammate may have difficulty remembering what happened the night before while drinking.
- He or she has unexplained cuts or bruises, or is rundown and sick most of the time.
- You may notice a new tendency in your teammate to be depressed and to lack motivation.

How to Help a Friend

Decide to do something. Doing nothing or ignoring a problem will not help the person. By doing nothing you are silently allowing this problem to perpetuate by not attending to it. Show your friend how much you care by talking with him or her. Here are some ways to approach your friend:

- *Let your friend know that you are worried that the drinking behavior is negatively affecting your relationship and could impact his or her status on the team and at school.*
- *Make sure the timing is right. Make sure your friend is sober and you have some privacy.*
- *Don't accuse your friend of being an alcoholic or place blame for the problem. Doing so may make him or her defensive or want to tune you out.*
- *Stick to known, specific behaviors. The purpose of talking is to encourage your friend to seek help. You can do this by being very specific about those things you have witnessed that concern you. Try to avoid making judgments or discussing rumors about behaviors.*
- *Share with your friend that you are worried about his or her behavior.*

Don't try to help your friend on your own. Share your concerns in private with another person who is knowledgeable and reassuring. Talking with someone else is not being disloyal or breaching your friend's confidence. Use this time as an opportunity to gather information about alcohol problems and ways in which you can help your friend seek help. You do not have to mention any names; you can talk generally about the problem. You also may want to speak with a professional on campus or in the community to assist you with this difficult issue; professionals can help you formulate a plan and rehearse what you want to say.

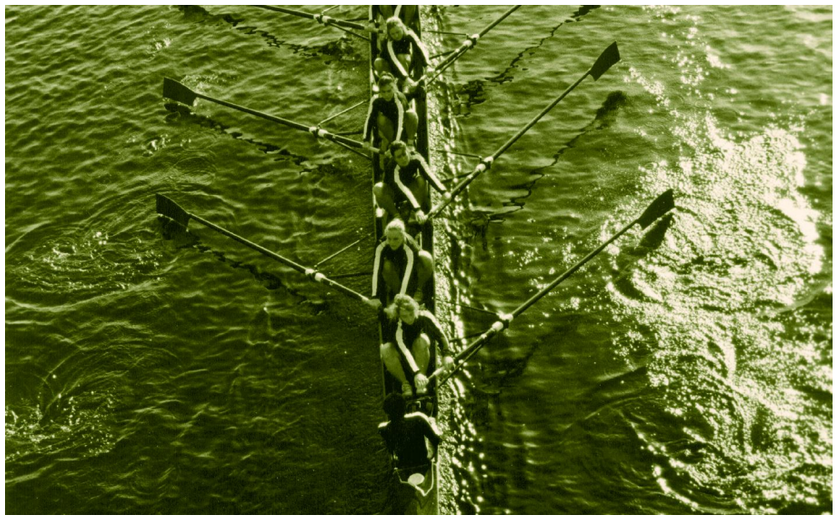
Help your friend take responsibility for his or her behavior. Make sure you do not "cover" for your teammate so that he or she can avoid negative consequences. Sometimes it is the very consequences that people want to avoid which spur them to seek help.

Be prepared for a variety of responses. The person could become defensive or deny everything you are pointing out. He or she may become upset or have no response at all. Stay calm and continue to focus on the problem behavior. Make it clear that you dislike the behavior, not him or her. If it feels as though your discussion seems to have no effect on your friend, recognize that you may have planted a seed that will grow later on. You also may want to try again at a later date. If nothing else, rest assured that you let the person know how his or her behavior is affecting you.

Know where to go to seek help and share these resources with your friend. Even if your friend decides to not change, have a list of resources to share just in case he or she decides later to get more information or help. Often, people do not want to "lose face" or "look like a fool" so they stand by their behaviors even if they are destructive. If your friend does decide to make a change, it may happen later when you are not around. By giving your friend information, you offer the opportunity to continue reflecting on this issue and provide resources for help. Even after you have spoken, continue supporting your friend, such as by agreeing to go along to get help if he or she desires.

Set limits. Until the person decides to deal with the issue, you may need to set limits on what you will or will not do with the problem drinker. It is recommended that you not drink with him or her anymore.

Help yourself. Although you may not be the one with the difficulties, having a friend with a drinking problem can be hard on you. The situation may have left you feeling lonely and afraid. You may be worried about losing your friendship or about your friend getting into trouble. It is hard to keep these worries to yourself. Talking with someone can help lighten your load. Your University counseling center is a great place on campus where you can talk to someone. Also, there are support groups in the community, such as Al-Anon or Alateen meetings **(www.al-anon.alateen.org)**, where people who are trying to help a friend go to talk about their concerns.



Resources

National Treatment Options

The Caron Foundation (Penn.)...1-800-678-2332
caron.org
Sierra Tucson (Ariz.) 1-800-842-4487
sierratucson.com
Phoenix House (N.Y. and Calif.) 574-631-7336
phoenixhouse.org
Hazelden.....1-800-257-7810
(Chicago and other locations)
hazelden.org
Treatment Finder ..... findtreatment.samsa.gov

Find Help

Alcoholics Anonymous (AA)
www.alcoholics-anonymous.org
National Office 212-870-3400
Adult Children of Alcoholics 310-534-1815
(ACOA)
adultchildren.org
Al–Anon Information 888-425-2666
al-anon.org
Find Help
alcoholscreening.org/getHelp/index.asp
Smart Recovery.....440-951-5357
smartrecovery.org.

Self-Help Materials: Books

The Addiction Workbook: A Step-by-Step Guide to Quitting Alcohol and Drugs by Patrick Fanning and John O'Neill

When AA Doesn't Work for You: Rational Steps to Quitting Alcohol by Albert Ellis and Emmett Velten

The Miracle Method: A Radically New Approach to Problem Drinking by Scott D. Miller and Insoo Kim Berg

Changing for Good by James O. Prochaska, John C. Norcross, and Carlos C. Diclemente

Sober for Good by Anne M. Fletcher

Happy Hours: Alcohol in a Woman's Life by Devon Jersild

Under the Influence: A Guide to the Myths and Realities of Alcoholism by James Robert Milam, Mel Schulstad, and Katherine Ketcham

Rational Recovery: The New Cure for Substance Addiction by Jack Trimpey

The Small Book: A Revolutionary Approach to Overcoming Drug and Alcohol Dependence (Rational Recovery Systems) by Jack Trimpey and Albert Ellis

Alcoholics Anonymous: The Big Book, 4th edition, A.A. World Services, Inc.

The Thinking Person's Guide to Sobriety by Bert Pluymen

Twelve Steps and Twelve Traditions, Alcoholics Anonymous, Inc.

Self-Help Materials: Web Sites

SELF-ASSESSMENT

Test Your Drinking—Want to Know More?
alcohol.org.nz/hadenough/questionnaire/concern.html

The Drinker's Check-Up
drinkerscheckup.com

Evaluate Your Drinking
wnotes.camh.net/efeed.nsf/feedback

Alcohol Screening
alcoholscreening.org

COLLEGIATE ALCOHOL USE

Examining the Culture of College Drinking
collegedrinkingprevention.gov/students
Facts On Tap
factsontap.org

B.R.A.D. (Be Responsible About Drinking, Inc.)
brad21.org

Higher Education Center for Alcohol and other Drug Prevention
www.edc.org/hecl

PEER EDUCATION

Peer Voices
epeervoices.com

BACCHUS & GAMMA Peer Education Network
bacchusgamma.org

ALCOHOL INFORMATION–GENERAL

Join Together
jointogether.org

National Institute on Alcohol Abuse and Alcoholism (NIAAA) Web Site
niaaa.nih.gov/

SAMHSA National Clearinghouse for Alcohol and Drug Information
www.health.org/

References

Some material adapted from:

A Guide for Teens: Does Your Friend Have an Alcohol or Drug Problem? What Can You Do to Help? developed by Betsy O'Connor, The Center for Health Communication of the Harvard School of Public Health

How to Help a Friend With a Drinking Problem, Bacchus and Gamma Peer Education Network

Brief Alcohol Screening and Intervention for College Students Basics: A Harm Reduction Approach, L.A. Dimeff, J.S. Baer, D. Kivlahan, and G.A. Marlatt, New York: Guilford Publications, 1999

Sports Nutrition: A Guide for the Professional Working With Active People 3rd Ed., C.A. Rosenbloom, American Dietetic Association, 2003

Pumped: Straight Facts for Athletes About Drugs, Supplements, and Training, C. Kuhn, S. Swartzwelder, and W. Wilson, New York: W.W. Norton, 2000

The Effects of Alcohol on Nutrition and Athletic Performance, developed by Karen Newhard, George Mason University