




Blood Alcohol

Test Overview

A blood alcohol test measures the amount of alcohol (ethanol) in your body. Alcohol is quickly absorbed into the blood and can be measured within minutes of having an alcoholic drink. The amount of alcohol in the blood reaches its highest level about an hour after drinking. But food in the stomach may increase the amount of time it takes for the blood alcohol to reach its highest level. About 90% of alcohol is broken down in the liver . The rest of it is passed out of the body in urine and your exhaled breath.

Alcohol has a noticeable effect on the body, even when consumed in small amounts. In large amounts, alcohol acts as a sedative and depresses the central nervous system.

A blood alcohol test is often used to find out whether you are legally drunk or intoxicated. If this test is being done for legal reasons, a consent form may be required, but refusing to take the test may have legal consequences.

Why It Is Done

A test for blood alcohol level is done to:

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- Check the amount of alcohol in the blood when a person is suspected of being legally drunk (intoxicated). Symptoms of alcohol intoxication include confusion, lack of coordination, unsteadiness that makes it hard to stand or walk, or erratic or unsafe driving.
- Find the cause of altered mental status, such as unclear thinking, confusion, or coma.
- Check to see whether alcohol is present in the blood at times when the consumption of alcohol is prohibited—for example, in underage people suspected of drinking or in people enrolled in an alcohol treatment program.

How To Prepare

No special preparation is needed before having a blood alcohol test.

Many medicines may change the results of this test. Be sure to tell your doctor about all the nonprescription and prescription medicines you take.

How It Is Done

- Wrap an elastic band around your upper arm to stop the flow of blood. This makes the veins below the band larger so it is easier to put a needle into the vein.
- Clean the needle site with a non-alcohol solution such as povidone-iodine or antiseptic soap.
- Put the needle into the vein. More than one needle stick may be needed.
- Attach a tube to the needle to fill it with blood.
- Remove the band from your arm when enough blood is collected.
- Put a gauze pad or cotton ball over the needle site as the needle is removed.
- Put pressure on the site and then put on a bandage.

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How It Feels

The blood sample is taken from a vein in your arm. An elastic band is wrapped around your upper arm. It may feel tight. You may feel nothing at all from the needle, or you may feel a quick sting or pinch.

Risks

There is very little chance of a problem from having a blood sample taken from a vein.

- You may get a small bruise at the site. You can lower the chance of bruising by keeping pressure on the site for several minutes.
- In rare cases, the vein may become swollen after the blood sample is taken. This problem is called phlebitis. A warm compress can be used several times a day to treat this.
- Ongoing bleeding can be a problem for people with bleeding disorders. Aspirin, warfarin (Coumadin), and other blood-thinning medicines can make bleeding more likely. If you have bleeding or clotting problems, or if you take blood-thinning medicine, tell your doctor before your blood sample is taken.

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A blood alcohol test measures the amount of alcohol (ethanol) in your body. Some states have no set limit for legal intoxication. But the National Highway Traffic Safety Administration (NHTSA) recommends that all states set the legal definition of intoxication as the point when the blood alcohol concentration (BAC) exceeds 0.08 (which is equivalent to 80 mg/dL or 17 mmol/L).

Blood alcohol

Normal:	No alcohol is found in the blood.
Abnormal:	Any alcohol is found in the blood.

Legal intoxication is defined as having a blood alcohol concentration (BAC) of 0.08 or greater. But the legal blood alcohol concentration (BAC) limit for people under age 18 may be lower, such as 0.02.

Effects of drinking alcohol

Having any amount of alcohol in the blood can cause poor judgment and slowed reflexes. BAC and the effects of drinking alcohol vary from person to person and depend upon body weight, the amount of food eaten while drinking, and each person's ability to tolerate alcohol.

Effects of drinking alcohol

Estimated blood alcohol concentration (BAC)	Observable effects
0.02	Relaxation, slight body warmth
0.05	Sedation, slowed reaction time
0.10	Slurred speech, poor coordination, slowed thinking
0.20	Trouble walking, double vision, nausea, vomiting
0.30	May pass out, tremors, memory loss, cool body temperature
0.40	Trouble breathing, coma, possible death
0.50 and greater	Death

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What Affects the Test

Reasons you may not be able to have the test or why the results may not be helpful include:

- Using rubbing alcohol to clean the skin before inserting a needle to draw blood.
- You have high blood ketones, as in diabetic ketoacidosis.
- Taking cough medicines that contain alcohol or herbal supplements, such as kava or ginseng.
- Drinking other alcohols, such as isopropyl alcohol or methanol.

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Many medicines may change the results of this test. Be sure to tell your doctor about all the nonprescription and prescription medicines you take.

Things that affect how quickly the blood alcohol level rises in the body include:

- The number of drinks per hour. As you increase the number of drinks per hour, your blood alcohol level steadily increases.
- The strength of alcohol (proof or percentage) in the drink.
- Your weight. The more you weigh, the more water is present in your body, which dilutes the alcohol and lowers the blood alcohol level.
- Your sex. Women's bodies usually have less water and more fat than men's bodies. Alcohol does not go into fat cells as well as other cells, so women tend to keep more alcohol in their blood than men do. Also, a woman's hormones may affect the breakdown of alcohol.
- Your age. One drink raises the blood alcohol level of an older adult more than it does for a young adult.
- Eating. Food in the stomach absorbs some of the alcohol. The blood alcohol level will be higher if you do not eat before or during drinking.

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you have an alcohol use problem.

- Highway patrol officers in most states now have devices (toximeters) that measure the breath alcohol levels of drivers they think are drunk. A person charged with drunken driving who does not think the breath analysis is accurate may ask for a blood alcohol test.
- The time that passes between drinking alcohol and collecting the blood or breath sample affects test results. The body continues to break down alcohol at a steady rate after drinking. So the amount of alcohol you drink can be estimated by knowing how much alcohol is present in your blood or breath and how much time has passed since you had a drink. In general, your body is able to break down about one drink per hour.
- A person who drinks alcohol and takes certain medicines, such as antihistamines, sedatives (tranquilizers), or narcotics, may feel more of the effects of alcohol. Also, a person who uses other drugs, such as marijuana, will feel the effects of both drugs more than if the drugs were used separately.
- A breath alcohol self-test can estimate your blood alcohol concentration. The handheld device to measure breath alcohol is similar to, though not as precise as, the type of test used by police for suspected drunk drivers. The breath alcohol self-test offers one piece of information to help you make a safe decision about drinking and driving. The safest decision is always not to drive if you have been drinking. To learn more, see the topic Self-Test for Breath Alcohol.

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