



## Alcohol Concentration Worksheet



### Drunk Driving and Blood Alcohol Concentration (BAC)

Blood Alcohol Concentration, or BAC, is the amount of alcohol in the blood at any given time, which determines the effects the alcohol is having (see table below). The body burns, or metabolizes, alcohol at a steady rate. The only thing that can lower BAC is time.

#### Facts About BAC:

- BAC is the amount of alcohol that is in the blood at any given time.
- A BAC of .10 means that the blood contains one part alcohol to one-thousand parts of blood; that may not seem like a lot, but it's a lot for a body to absorb!
- Legal level for driving drunk in most states is .08.
- Bodies burn or metabolize alcohol at a steady rate.
- The only thing that can lower a BAC is **time**. There is no way to dilute the amount of alcohol in the body by drinking or eating other things.
- The faster someone drinks, the higher their BAC.

#### Other things that affect BAC:

- Gender — a woman's BAC increases more per drink than a man's.
- Weight.
- Metabolism.
- Use of medication.



**The only thing that can lower Blood Alcohol Concentration (BAC) is time!**



## Alcohol Concentration Worksheet

### Blood Alcohol Concentration (BAC) and Effects

So what does it actually look like to have a BAC of .04, or of .13? Use the chart below as a guide. But remember, some people will feel, and seem, pretty normal even with a BAC of .12. It's important to remember that no matter how **you** feel, the alcohol **is** affecting your judgment, reaction time, and driving ability.

BAC	EFFECTS
.30 - .50	Death may occur at .37 or higher. BACs of .45 and higher are fatal to nearly all individuals.
.25 - .50	Very drunk. May lose consciousness.
.15	Obviously drunk. Staggering, weaving, irrational behavior. The equivalent of a half pint of whiskey is circulating in the blood stream.
.12 - .15	Vomiting may occur. May be drowsy. Loss of critical judgment, impairment of memory and comprehension. Vision impaired.
.10	Loss of inhibition. Judgment and driving impaired. Clear deterioration of reaction time and control.
.08	Judgment and driving impaired. Defines intoxication in most states.
.06	Judgment and driving somewhat impaired.
.05	Definite relaxation. Most people are very mellow at this point. There can be some impairment, and the ability to drive safely begins to be limited.
.04	Most people begin to feel relaxed, sociable, and talkative.
.02	Moderate drinkers may feel some relaxation and warmth.



**No matter how *you* feel, the alcohol *is* affecting your judgment, reaction time, and driving ability.**



## Alcohol Concentration Worksheet

### Calculating Your BAC

To estimate your own personal limit to avoid problems related to drinking and driving violations, you can use the following steps to calculate your own BAC and learn what the maximum number of drinks is you can have at any time.

Three things you need to know in order to calculate your BAC:

1. Your weight.
2. How many drinks you have had.
3. The amount of time that you have been drinking.

Complete the following steps to determine your BAC.

#### Step 1. Body Weight:

Fill in the blank with your weight. \_\_\_\_\_

#### Step 2. BAC Chart:

Using the appropriate BAC Chart below (note male and female charts), find the row that is closest to your weight. If your weight is between two rows, use the *lower* weight row to make sure that you will be within legal (and low risk) limits.

Males Body Weight	Number of Drinks									
	1	2	3	4	5	6	7	8	9	10
100 lbs	.043	.087	.130	.174	.217	.261	.304	.348	.391	.435
125 lbs	.034	.069	.103	.139	.173	.209	.242	.278	.312	.346
150 lbs	.029	.058	.087	.116	.145	.174	.203	.232	.261	.290
175 lbs	.025	.050	.075	.100	.125	.150	.175	.200	.225	.250
200 lbs	.022	.043	.065	.087	.108	.130	.152	.174	.195	.217
225 lbs	.019	.039	.058	.078	.097	.117	.136	.156	.175	.195
250 lbs	.017	.035	.052	.070	.087	.105	.122	.139	.156	.173

Females Body Weight	Number of Drinks									
	1	2	3	4	5	6	7	8	9	10
80 lbs	.053	.106	.156	.212	.265	.318	.371	.424	.477	.529
100 lbs	.050	.101	.152	.203	.253	.304	.355	.406	.456	.507
125 lbs	.040	.080	.120	.162	.202	.244	.282	.324	.364	.404
150 lbs	.034	.068	.101	.135	.169	.203	.237	.271	.304	.338
175 lbs	.029	.058	.087	.117	.146	.175	.204	.233	.262	.292
200 lbs	.026	.050	.076	.101	.126	.152	.177	.203	.227	.253
225 lbs	.022	.045	.068	.091	.113	.136	.159	.182	.204	.227



In most states, you cannot drive if you have a BAC of .08 or higher.

It's important to know your limits before you start drinking, because people who have started to drink will underestimate their BAC level.



## Alcohol Concentration Worksheet

### Step 3: Calculate your BAC

To calculate your BAC level, you need to know how much you've had to drink and over how many hours. Subtract the number in the Time Factor Table below from the number on the appropriate BAC Chart above to calculate your approximate BAC.

Time Factor Table								
Hours Since First Drink:	1	2	3	4	5	6	7	8
Subtract from BAC	.015	.030	.045	.060	.075	.090	.105	.120

#### For Example:

- A 160 pound man has had 4 drinks in two hours.
- Take the number .116 (from the BAC Chart for Males: 150 pounds, 4 drinks).
- Subtract .030 (from the Time Factor Table: 2 hours) to obtain a BAC of **.086**



**Notice that this man's BAC is above the legal limit and he should not drive right now!**

### Step 4: Staying Safe

There are two ways to ensure that your BAC level does not impair your ability to drive:

1. Pace your drinks at a rate that never results in a total BAC level of .08 or greater.
2. Allow enough time after drinking for your body to eliminate enough alcohol so that your BAC is lowered to a .08 before you drive.

If you drink enough alcohol to go beyond a BAC level of .08, **you should not drive**. Instead, find another person to drive you, or call a cab. If neither of those options is available, the Time Factor Table above will help you determine when enough alcohol will have been eliminated from your body to reduce your BAC level to below .08.



**It is possible for a person who has had a lot to drink to stop drinking late at night, sleep for several hours and still have a BAC level high enough to impair their driving the next morning.**



## Alcohol Concentration Worksheet



### Step 5: Calculate

Calculate the maximum number of drinks you can have and stay below a BAC level of .08. Here is an example showing how to calculate the maximum number of drinks you can have and stay below a BAC level of .08:

Mike is out drinking with friends. He weighs 180 pounds, and he has been out since 8:00 p.m. It is now 11:00 p.m., and Mike has had a total of 5

drinks. What is Mike's BAC? And, how long does he need to wait before he can drive safely, if he stops drinking now?

1. Find Mike's weight under the "Ideal Body Weight" column on the BAC Chart for Males.
2. Given Mike's weight, his BAC after having 5 drinks would be **.125**.
3. Mike drank over a 3-hour period, so, according to the "Time Factor Table" shown earlier, you must subtract **.045** from Mike's earlier BAC number of .125.
4. This would give Mike a BAC level of **.08**; a number considered both dangerous and illegal to drive with in most states.
5. Since Mike needs a BAC of **less than** .08 to drive, he should stop drinking and wait **at least an hour** before driving.\*

### Step 6: Your Turn

Now, you try one. If you have 4 drinks in 2 hours, how long do you need to wait before you can drive safely?

1. Find your weight on the appropriate BAC chart rounded, if needed, to the **lighter** weight. \_\_\_\_\_
2. Find your BAC number after having 4 drinks. \_\_\_\_\_
3. Now, subtract .03 from that number since it has been 2 hours since you started drinking. \_\_\_\_\_
4. What is your BAC? \_\_\_\_\_
5. How long would you need to wait before driving? \* \_\_\_\_\_



**Consequences of driving drunk include fines, jail time, legal fees, and loss of wages.**

\* It's important to understand that if you have ANY alcohol in your system, your ability to drive will be impaired, even if your BAC is below .08. The best idea if you've been drinking is to not drive at all.