

The six stages of drunkenness

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The effects of alcohol

hit your brain like a tidal wave. And you can go from jovial, to falling-down drunk, to dead - and it doesn't take very long to get there.

First it suppresses the frontal lobes, then it goes to the back of your brain, and then to the parts deep in the centre. Dr Izak Loftus, forensic and anatomical pathologist from the Pathcare-Group explains.

Alcohol is a suppressant. It is called this, because it suppresses the normal functions of your brain.

This suppressing effect on the brain is almost like a wave crashing over your head. First it suppresses the frontal lobes, then it washes further backwards over the parietal lobes, then to the parietal lobes, the occipital lobes right at the back, then deeper into the brain to the cerebellum and lastly to the diencephalon and the mesencephalon (midbrain), and then down to the brainstem and the medulla oblongata.

This process is continuous, but certain functions, for example peripheral vision, may already be affected at an earlier stage.

First effect: the jovial phase

The frontal lobes house the functions that control, among other things, your inhibitions, self-control, willpower, ability to judge and attention span.

Suppress it, and your self-confidence increases, you start getting jovial, you become more and more generous, and start talking more. This is why alcohol is seen as a good social lubricant.

This effect can already be detected with blood alcohol levels as low as 0,01g/100ml - in other words, while you are within the legal limit of 0,05g/100ml.

The problem is that even at this level, which is perfectly legal, your loss of judgement ability and your changed personality already increase your risk of dying an unnatural death, for example as a result of being in a fight.

Maybe you are better able to control yourself and your behaviour in this phase as a result of good self-control, or education, and the onslaught of the alcohol might pass by relatively unobtrusively. Maybe not.

Second effect: the slurring phase

The next parts of the brain that come into the firing line, the parietal lobes are affected at a blood alcohol level of approximately 0,10 g/100ml.

Then your motor skills become impaired, you have difficulty speaking, you speak in slurred fashion (which oddly enough, you cannot hear yourself), you start shivering, and complicated actions become very difficult to execute (I always used to watch alleged drunk drivers trying to fasten their shirt buttons - an everyday activity that suddenly becomes as difficult as threading a needle). At the same time your sensory abilities are hampered.

Third effect: the can't-see-properly phase

If the occipital lobe is reached, the alcohol level is usually about 0,20 g/100ml.

Your visual perception ability becomes limited. You have increasing difficulty to perceive movement and distance. Your depth perception becomes impaired and your peripheral vision decreases. If you now drive at dusk, you will have great difficulty seeing the little boy running after his ball, or your fellow drinking buddy, staggering by the roadside.

Fourth effect: the falling-down phase

At about the alcohol level of 0,15 g/100ml the cerebellum becomes affected and keeping your balance could become difficult.

With a bit of luck, your friends would by this time have lain you on the ground somewhere safe.

Fifth effect: the down-and-out phase

We hope you are lying down in a safe place, because at this stage the wave is crashing at 0,25 g/100ml over your diencephalon and the mesencephalon (midbrain).

You become tired and very unsteady - you are now probably out for the count.

You start shaking and you vomit. Maybe your reflexes will not be so badly suppressed that you cannot protect your airways, otherwise you could inhale your own vomit and die. Your consciousness is now suppressed, and you may be comatose.

Sixth effect: in the valley of the shadow of death

Should the alcohol wave wash further, driven by a blood alcohol level of 0,35 to 0,40 g/100ml, and it reaches your brain stem, including the medulla oblongata, you have life-threatening problems. The centres controlling your breathing and your blood circulation are suppressed, and you are busy dying.

The chronic drinker

These effects refer to the social drinker. **Chronic abuse of alcohol will increase someone's tolerance**

, and would therefore cause these effects to become visible only when a chronic drinker has reached much higher levels of alcohol in the blood than those mentioned above.

Usually the person would appear to be less under the influence at a specific blood alcohol concentration (BAC), when the BAC is busy dropping, than when it is busy increasing. This is called the Mellanby effect, and is the result of the development of acute tolerance in the brain with regards to alcohol.

(Dr. Izak Loftus, forensic and anatomical pathologist from the Pathcare-group, for [Health24](#).)

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