

How Alcohol Actually Increases Stress Levels, Rather Than Relaxing You | Dr. Andrew Huberman

When people drink no matter who you are Initially there's that shutting down of those prefrontal cortical circuits there's a gradual shutting down of the circuits that control memory But then people divide into these two bins and these two bins are the people who after more than a couple of drinks start to feel sedated and the people who after more than a few drinks do not start to feel sedated Now of course there's going to be differences created by how quickly people are drinking whether or not they're combining different types of alcohol uh the types of alcohol et cetera But in general that can predict whether or not you're somebody who has a predisposition for alcoholism or not One also very interesting finding is that alcohol changes the relationship between what's called the hypothalamus and the pituitary gland and the adrenals Now the hypothalamus is a small collection of neurons about the size of a large gum ball sits above the roof of your mouth and it houses neurons that are responsible for some incredible aspects of our behavior and our mindset things like rage things like sex drive things like temperature regulation very primitive functions including appetite thirst et cetera alcohol because it can go anywhere in the brain Remember it's water and fat soluble has effects on the hypothalamus The hypothalamus normally provides very specific signals to what's called the pituitary gland This is a little gland that actually sticks out of the brain but it receives instructions from the hypothalamus And then the pituitary releases hormones into the bloodstream that go and talk to your adrenals Your adrenal glands sit right above your kidneys uh in your lower back And the adrenals release as the name suggests adrenaline also called epinephrine and also a molecule called cortisol which is involved in the kind of longer term stress response has some healthy effects too on the immune system Ok So the hypothalamic pituitary adrenal axis I know it's a mouthful You don't need to remember the names but the hypothalamic pituitary adrenal axis maintains your physiological balance of what you perceive as stressful and what you don't perceive as stressful People who drink regularly So this again could be just one or two drinks per night or it could be somebody that drinks just on Fridays or just on Saturdays or maybe just on the weekend 2 to 4 drinks Well those people experience changes in their hypothalamic pituitary adrenal axis that result in more cortisol more of this so called stress hormone being released at baseline

when they are not drinking This is really important People who drink a bit and when I say a bit I don't mean one or two sips or even a glass of wine every once in a while I mean again people that are maybe having one drink a night with dinner and maybe on the weekend a few more can I offer a bunch of different patterns to explain how it could also be two or three drinks on Friday or six drinks only on Saturday Well all of those groups experience increases in cortisol release from their adrenal glands when they are not drinking And as a consequence they feel more stressed and more anxiety when they aren't drinking This is a seldom talked about effect of alcohol because so often we hear about the immediate effects of alcohol and we've been talking about some of those effects effects like reducing the amount of stress I mean how many times have we heard Somebody say oh I need a drink and then they have a drink and they're like calm down Now they can shake off the thoughts about the day's work They can start to think about things in a may be more grounded or rational way or at least they believe that or they can somehow just relax themselves well while that very well may be true that it can relax them when they are not drinking That level of cortisol that's released at baseline has increased substantially Again this relates to a defined neural circuit between brain and body and it has to do with the ratio of cortisol to some of the other hormones involved in the stress response We provide a reference to the study that describes how all of this works for those of you that really wanna delve into it But let's go back to this issue of those who are prone to alcoholism versus those who are not Remember there are people who have genetic variants that meaning genes that they inherited from their parents that make it more likely that they will become alcoholics But there are also people who drink often who start to experience this increase in alertness the longer they drink across the night Part of that effect we think is because of changes in this hypothalamic pituitary adrenal axis So alcohol is kind of a double hit in this sense It's causing changes in our brain circuitry and neurochemistry that at the time in which we're inebriated are detrimental and it's causing changes in neural circuitry that persist long past the time in which we're experiencing the feeling of being tipsy or drunk Now again I don't want to demonize alcohol I'm not saying oh you know if you have a glass of wine now and again or you drink a beer now and again or even have um you know a mixed drink now and again or a shot that that's necessarily terrible for you I certainly do not want that to be the message What I'm saying is that if people are ingesting alcohol chronically even if it's not every night there are well recognized changes in neural circuits There are well

recognized changes in neurochemistry within the brain And they are well recognized changes in the brain to body stress system that generally point in three directions increase stress when people are not drinking diminished mood and feelings of well being when people are not drinking And as you'll soon learn changes in the neural circuitry that cause people to want to drink even more in order to get just back to baseline or the place that they were in terms of their stress modulation and in terms of their feelings of mood before they ever started drinking in the first place So again I don't wanna de demonize alcohol but I do want to emphasize that there are long term plastic changes meaning changes in neural circuitry and hormone circuitry that across a period of several months and certainly across a period of years of the sorts of drinking patterns I described which I think for most people are going to sound like pretty typical right I I mean nothing that I described so far was about drinking a case a night or or about binging on alcohol in the way that we often hear about it in the news These are pretty common patterns of of alcohol consumption I mean all you have to do is board a transatlantic flight or actually go to an airport on a Sunday afternoon in a sunny area of the US and you know people are having 3456 beers et cetera Again personal choice is personal choice I'm not telling you what to do but it's very clear that those sorts of drinking patterns are changing neural circuitry and they're changing hormone circuitry And I'd love to be able to tell you that they're changing them for the better but they simply are not they're actually changing them for the worse and worse is defined as making people less resilient to stress higher levels of baseline stress and lower mood overall