Why Alcoholism is a DISEASE

For many years, people believed that alcoholism stemmed from a lack of willpower - that the people who experienced addiction to alcohol should be able to 'just quit' when they began to see the negative effects it was having on their life. That's not the case, however, and those affected by alcoholism will likely tell you that while they know drinking is the reason they lost their job, the reason they can't maintain a decent relationship, and the reason why they constantly feel unhealthy, depressed and alone - they just can't stop picking up the bottle.

What these people are experiencing is not a lack of willpower, but instead they are affected by an internationally recognized complex brain disorder known as addiction - or more specifically in this case - alcoholism.

In 1956, the American Medical Association (AMA) defined alcoholism as an illness, but not everyone was quick to agree. It wasn't until 2004 that the World Health Organization (WHO) put together a comprehensive report titled "Neuroscience of Psychoactive Substance Use and Dependence" in which the WHO states that "substance abuse has not previously been recognized as a disorder of the brain, in the same way that psychiatric and mental illnesses were previously not viewed as such. However, with recent advances in neuroscience, it is clear that substance dependence is as much a disorder of the brain as any other neurological or psychiatric illness."

Before delving into the complicated world of neuroscience, it's important to understand the basic elements of the disease. Alcoholism has four main symptoms which include craving (a strong need to drink), loss of control (the inability to decline a drink, or limit consumption), physical dependence (the presence of withdrawal symptoms following a heavy drinking episode, such as sweating, shakiness, anxiety and nausea) and tolerance (the need to drink more and more to achieve the same "high" that lesser amounts could achieve previously).

With the introduction of brain imaging tools such as the MRI and PET scans, medical researchers have been able to get a better understanding of how alcoholism manifests in the brain. The brain is made of specialized cells (neurons) that transmit signals to and from the brain. Every person is hardwired to obtain life-sustaining resources such as food and water, shelter and mates. When a person obtains one of these things, the chemical dopamine is transmitted to the brain, letting it feel pleasure, relief and an overall feeling of satiety. In a sense, it allows the brain to relax and stop searching – at least for a while.

One of the ways addiction is caused is when a person consumes alcohol; it creates a surge of the chemical dopamine creating highly increased levels of pleasure in the brain. The brain then remembers this feeling and wants it repeated. When the person allows their brain this simple pleasure once again, the desire to repeat gets stronger and stronger. With frequent consumption of alcohol, including the overabundance of dopamine it provides the brain, the body begins to decrease its own natural production of dopamine - depending on the alcohol effects to create the rest. With low levels of dopamine being created in the body, the person will soon feel sad and/or depressed, possibly anxious, and will likely look to the one fix they know will make them feel better – alcohol. Eventually, the need to consume alcohol will outweigh the need for literally everything else in life, and the dopamine stores in the body will reach such low levels, that even the alcohol will no longer be able to give them the 'high' they so sorely desire.

At the same time, the alcohol consumed is having detrimental effects on the part of the brain that controls the ability to make good decisions, to see the 'bigger picture' and to control desires and emotions. In these areas, MRI and PET scans can show the physical difference in brains affected by alcohol and brains that are not. At this point, the disease has taken over, and no matter what life throws him – loss of job, loss of relationships, life-threatening situations, or anything else – he is physically incapable of putting down the bottle.

But then what sets apart those affected by alcoholism, and those who are not? There are plenty of people in the world that can enjoy an occasional drink on holidays, and even people who drink heavily every weekend but don't end up with alcoholism. Recent findings have suggested that people are genetically predisposed to alcoholism – or rather – it is in their DNA.

Coming next week "Why Alcoholism is Hereditary"

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