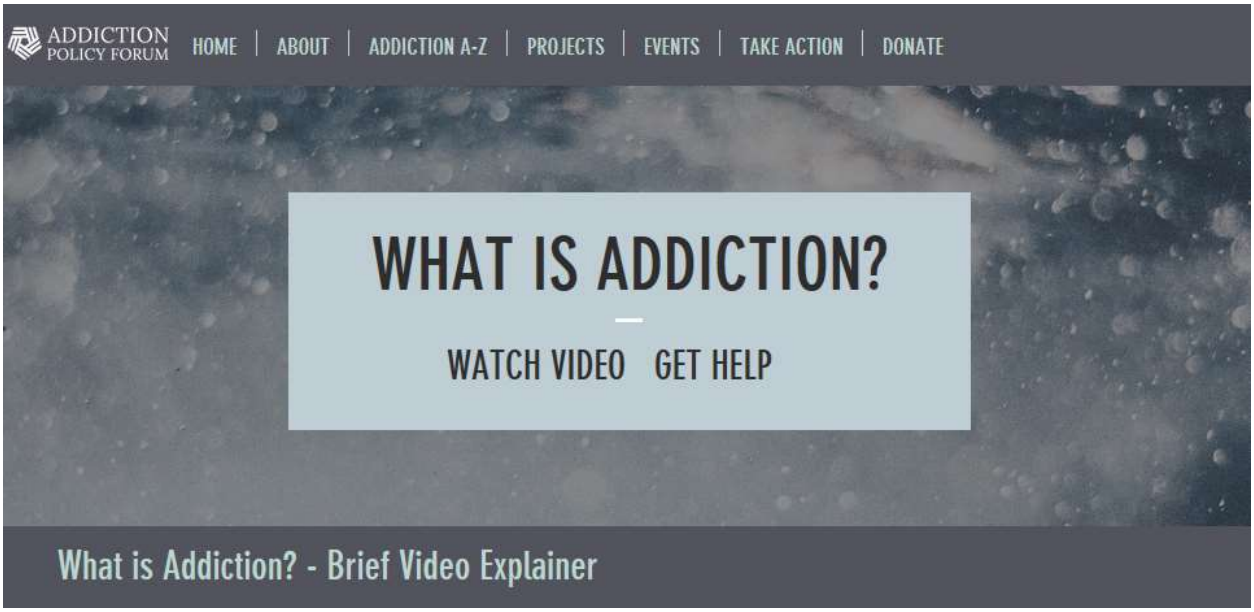

http://www.addictionpolicy.org/what-is-addiction

Addiction, also called a substance use disorder, is a "chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences (NIDA, 2014)."

Over 21 million people suffer from addiction in the United States – that's 1 in 7 people. On average, we lose 144 people a day to drug overdoses and that number climbs to 375 if you factor in alcohol-related deaths.

It was not until 1994 that scientists started to fully understand the effects of substance use disorders – like other diseases, brain scans showed that it affected tissue function. These scans also helped identify the two main parts of the brain affected by substance use: the limbic system and the cortex.

The limbic system, located deep within the brain, is responsible for our basic survival instincts: eating, drinking, finding shelter, having sex, and caring for our young. When these essential tasks are completed, our brains reinforce the behavior with the release of dopamine. That release of dopamine, or reward for surviving, is also transmitted to the amygdala and hippocampus, which records a memory of that feeling so we seek it again.

The other part of the brain affected by addiction is the pre-frontal cortex, which regulates decision making and impulse control. This is what separates us from other animals.

When drugs are used they activate the same dopamine process as in the survival center and when use is repeated, that substance can hijack that part of the brain. This hijacker changes the brain and weakens this system to make it believe that the primary need for survival is the drug. In hijacking the brain, it can overpower those primary motivations: food, water, shelter, sex and protecting our young.

The hijacker then needs more and more of the substance to activate the same level of reward or feeling of pleasure, causing the brain tissue to become increasingly damaged with continued drug use.

But there is good news – addiction is preventable and treatable!

Advancements have been made in assessments, detox, treatment programs, recovery supports and medications to treat addiction. Brain scans show that once in recovery, the tissue in the limbic system and cortex can get better.