



ABUSING ALCOHOL DURING THE TEEN YEARS CAN LEAD TO DIRE CONSEQUENCES, INCLUDING DAMAGE TO YOUR GROWING BRAIN.

Four years ago, the daily alcohol-fueled party finally ended for Toren Volkman when he entered a rehabilitation program. He was 23 and lucky to be alive. For the previous eight years, Toren had binged on alcohol. His abuse got him arrested on several occasions and resulted in many blackouts—periods in which the memory is erased.

"I was blacking out, getting kicked off school teams, and I didn't care that those things were happening," Toren, who grew up in Olympia, Washington, tells *Choices*.

Toren's story isn't new. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) reports that nearly 18 million Americans abuse alcohol or are alcoholics—people who are dependent on alcohol, cannot control their drinking, and can't stop using alcohol even when it's obviously disrupting their lives. The adults in your life have probably been warning you about the dangers of drinking.



Beating Up Your Brain

But here's something you may not know: There's growing scientific evidence that abusing alcohol during the teen years can really hurt the development of the brain. "We know that alcohol damages the frontal areas of the adolescent brain," says Dr. Fulton Crews, a scientist at the University of North Carolina, who studies the effects of alcohol on the brain.

Adolescence occurs anywhere between ages 10 and 20. "If the frontal areas of the brain are damaged, they might change that person for his or her whole life," Crews says.

Researchers believe that the human brain goes through two major periods of development. The first occurs during childhood. The second happens during the teen years. During this period, the brain's frontal lobes are the main regions that develop. This part of the brain helps a person start to make the transition from child to adult. "Frontal lobes are involved in planning, decision-making, controlling impulses—skills needed to function independently in society," says Aaron White, a professor of psychology at Duke University.

Learning Roadblock

How does alcohol consumption affect these changes in the brain? Heavy drinking blocks the brain's ability to learn, recall, and develop, according to Crews, White, and other researchers. Large amounts of alcohol stop important chemical reactions that strengthen synapses—connections within the brain. "In doing so, it prevents the brain from being remodeled by experience," White says. In other words, heavy drinking slows or blocks the brain's ability to develop through learning.

A blackout—when a person drunk on alcohol is conscious but later has no memory of events—is an example of this process. "It's like the VCR's working, but when you hit the record button there's no tape in the machine," White says.

LEFT: BRAIN ILLUSTRATION: IMAGES RIGHT: COURTESY OF TURENE AND CHRIS VOLKMAN/WWW.BEATINGUPYOURBRAIN.COM