



American Drug Testing

Drug-Free Workplace Programs

Volume 1

Issue 141

(843) 747-4111

DRUG-FREE WORKPLACE ADVISOR

AN ONGOING SERIES TO PROTECT YOUR COMPANY BY HELPING TO KEEP DRUGS OUT OF YOUR WORK-

In Search of Alcoholism Genes, Part II

Several studies of alcohol-dependent patients treated with the drug naltrexone found that those with one variation of an opioid-receptor gene had a significantly lower rate of relapse than those with a different variation. Naltrexone, approved for alcoholism in 1995, seems to cut cravings by blocking the opioid release that addicts get from alcohol. Clinical trials are under way at the University of Pennsylvania that could also lead to more targeted uses of naltrexone.

Other studies of the opioid-receptor genes and alcoholism have been mixed. In fact, such associations are often found in one study and not in others. "With a disease like alcoholism, where dozens or hundreds of genes could have a small impact, to find any one of them in the size of the studies we are doing, you have to be sort of lucky enough to find the same gene," says Dr. Edenberg, "and the chance that the next group will be lucky is not that high." The strongest gene associations found to date involve the so-

called Asian flush. Roughly 40% of people of East Asian descent carry one or two gene variations that rapidly convert alcohol into the chemical acetaldehyde, which causes nausea, rapid heart beat and a severe flush. It's a strong deter-

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rent to drinking, much like the drug disulfiram, or Antabuse. "You don't even need a genetic test to detect it," says David Goldman, chief of the Laboratory of Neurogenetics at the National Institute on Alcohol Abuse and Alcoholism. "If you have a dinner party and somebody has this variation, they'll turn red when they drink a glass of wine."

Researchers at the University of North Carolina-Chapel Hill have tentatively identified a similar "tipsy gene" that makes carriers feel inebriated after just one or two drinks. Between 10% and 20% of the population has this variation, which is also thought to protect against becoming alcohol-dependent.

Other people feel especially euphoric when they drink—probably due to variations in the neurotransmitter dopamine in the brain's reward circuits.

A variation in the DRD2 dopamine receptor gene was identified in 1990 and found in a large number of alcoholics as well as drug addicts and smokers, although later studies have been mixed.

Last month, researchers at the University of California-San Diego reported that people with the DRD2 variation tend to have friends with the same genetic marker. That would give them both a biological compunction to drink and social reinforcement, the authors noted in the study published in the Proceedings of the National Academy of Sciences.

Like the Asian flush, some alcohol-related genes are particularly prevalent in certain ethnic or geographic groups. A recent study in Nature found that a rare variation in the HTR2b gene, linked to severe impulsiveness, is found almost exclusively in Finnish people. "Almost all these severely impulsive individuals are also alcoholic, and their worse impulsive problems occurred while they were drunk," says Dr. Goldman, the study's senior investigator.

Separately, variations in two genes for receptor to neurotransmitter neuropeptide Y, associated with stress and severe withdrawal symptoms from alcohol, are common to about one-quarter of the population. Clearly, not all those people are severe alcoholics.

So much is still unknown that most experts don't advise consumers to use genetic-testing services to try to understand their risk for complex conditions like alcoholism.

"Even if you learn you have a protective version of some gene, you could still be vulnerable due to a gene we haven't discovered yet," says Dr. Goldman, who adds that anyone with a family history of alcoholism should definitely approach alcohol with caution.

"Looking at your family history is simpler, cheaper and at the moment, gives you more information than a genetic test," says Dr. Edenberg. He also stresses that DNA is never destiny when human behavior is involved.

"You can carry all kinds of genes, and if you manage to push away the glass or the bottle, you won't have an alcoholism problem."

Source: Wall Street Journal. For additional tips, see the "client area" at www.AmericanDrugTesting.net or call 843-747-4111.



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