

Serotonin System in Women's Brains Is Damaged More Readily by Alcohol Than That in Men's Brains

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After only four years of problem drinking, a significant decrease in the function of the serotonin system in women's brains can be seen. This is the system that regulates such functions as impulse control and mood. It takes 12 years before a corresponding decrease is seen in men. This is the conclusion of multidisciplinary research carried out at the Department of Psychology and the Sahlgrenska Academy at the University of Gothenburg, Sweden. The research group in the multidisciplinary project Gothenburg Alcohol Research Project (GARP) has studied for the first time three of the major neurotransmitter substances in the brain in a single individual. They have studied a group of women and a group of men with alcohol dependence. The results will be published in January 2012 in the journal *Alcoholism: Clinical & Experimental Research*. "We have used what is known as neuroendocrine techniques to show that it is principally the serotonergic system in the brain that is seriously impaired by alcohol. This is the system that regulates impulse control and mood, among other functions," says Kristina Berglund, scientist at the Department of Psychology and representative for the research group.

Both men and women suffer adverse effects, but the effects arise much more rapidly in women. The results show that the function of women's serotonin system has fallen by 50% after as little as four years with problematic alcohol consumption, while it takes 12 years before the function of men's systems is halved.

"It is important to note that the damage is just as serious in men and women, but the time courses are different. We still don't know whether the serotonin system can repair itself, but there are research results showing that other damage to the brain can heal after a certain period without alcohol," says Ulf Berggren of the Sahlgrenska Academy, University of Gothenburg.

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