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Overlapping genetic influences on success at quitting smoking and addictive substance history

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A genetic test that has previously been shown to predict an individual’s success at quitting smoking may also help to predict the pace of his or her previous involvement with addictive substances, a paper in Molecular Psychiatry reports. The study suggests prevention efforts could gain in effectiveness with focus on individuals at genetic risk for both escalating use of addictive substances and poor ability to quit smoking.

The v 1.0 smoking quit success genotype score has been shown previously to predict ability to quit smoking. To validate the predictive value of this genotype score, George Uhl and colleagues studied DNAs from participants in a clinical trial in which nicotine replacement therapy dose was matched to their baseline smoking intensity. They also studied a group of individuals followed since age six to establish whether the genetic factors that influence the ability to quit smoking affect the trajectory of involvement with addictive substances.

Individuals with higher v 1.0 scores were less likely to have displayed substantial use of common addictive substances during adolescence; those with lower scores were more likely to have reported escalating use of these substances, the authors found. The results support the validity of the v 1.0 genotype score in predicting ability to quit smoking. They suggest that the genetic factors that influence quitting success overlap with those that influence the rate of addictive substance uptake during adolescence. Such genetic scores could allow therapeutic approaches to be tailored according to an individual’s genetic propensity for quitting smoking and prevention approaches to be tailored to individual risk for escalating use of substances in adolescence that is harder to quit later in life.
Author contact:
George Uhl (National Institute of Drug Abuse, Baltimore, MD, USA)
Tel: +1 443 740 2799; E-mail: guhl@intra.nida.nih.gov

Editorial contact:
Julio Licinio (Australian National University, Canberra, Australia)
Tel: +61 2 6125 2550; E-mail: julio.licinio@anu.edu.au

Media contacts:

From North America and Canada
Neda Afsarmanesh, Nature New York
Tel: +1 212 726 9231; E-mail: n.afsarmanesh@us.nature.com

From Japan, Korea, China, Singapore and Taiwan
Eiji Matsuda, Nature Tokyo
Tel: +81 3 3267 8751; E-mail: e.matsuda@natureasia.com

From the UK
Rebecca Walton, Nature London
Tel: +44 20 7843 4502; E-mail: r.walton@nature.com

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