

# CTS News

## Recent Publications

Friedman NP, Miyake A, Young SE, DeFries JC, Corley RP, Hewitt JK. (2008). Individual differences in executive functions are almost entirely genetic in origin. *Journal of Experimental Psychology*, 137 (2), 201-225.

Corley, R.P., Zeiger, J.S., Crowley, T.J., Ehringer, M.A., Hewitt, J.K., Hopfer, C.J., Lessem, J., McQueen, M.B., Rhee, S.H., Smolen, A., Stallings, M.C., Young, S.E., Krauter, K. (2008) Association of candidate genes with anti-social drug dependence in adolescents. *Drug and Alcohol Dependence*, 96, 90-98.

Subbarao, A., Rhee, S.H., Young, S.E., Ehringer, M.A., Corley, R.P. (2008). Common genetic and environmental influences on major depressive disorder and conduct disorder. *Journal of Abnormal Child Psychiatry*, 36, 433-444.



## catching some zzz's

Results from current sleep study participants reported # of hours of sleep per weeknight:

Less than 6 hours per weeknight: **12%**

6-7 hours per weeknight: **55%**

8-9 hours per weeknight: **29%**

More than 9 hours per weeknight: **4%**

## Sleep Science: What Makes a Morning Person?

It's getting late, and right before hanging up the phone your friend says to you "See you bright and early tomorrow".

For some, this short phrase brings up excitement for the following day. "I can't wait to get up and greet the sunrise!" For others, who probably won't be going to bed for several more hours, these words conjure up a feeling of dread. "I'm like a zombie in the morning; I'll never get up in time."

Whichever side of the bed you find yourself on, we now know the reason is related to your DNA. In our current sleep study, we are finding that genetics play a role as to whether an individual is a "morning" or an "evening" person. Of course, like all human behaviors, there are also environmental components. Noisy traffic outside, a snoring roommate or a final in the morning can contribute to sleep patterns. Consistent with this, we have also found substantial environmental contributions, all of which seem to be unique to the individual (as opposed to environmental factors that are shared between twins).

We have also found some interesting trends related to "morning" and "evening" people. In our study, there are just as many morning people as evening people,

but most who have taken the survey (60%) would be categorized as neither "morning" or "evening", but have characteristics of both. There also seem to be some differences related to an individual's sex. Our preliminary analyses show that females are more likely to be morning people - 22.4% vs. only 16.3% of males, and males are more likely to be evening people (23.6% to 18%). In addition, 23% of all twins who have completed the questionnaire would be classified as "excessively sleepy". Interestingly, this does not seem to have much to do with whether an individual is a morning or evening person.

Once the study is complete and we have collected enough data, we will begin looking at other aspects of sleep behavior, including the specific effects of stress on sleep, the causes of insomnia, and the heritability of specific sleep problems.

**If you have not yet participated in the sleep study and are a twin, there is still time! Please go to <http://ibg.colorado.edu/sleepstudy> to get started. The questionnaire is completely online, takes 30-45 minutes and you are compensated \$20 for your time. At the end of the questionnaire you will find out if you are in fact a morning or an evening person (you might be surprised!) as well as other information about your sleep.**



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## Ongoing and Upcoming Research Projects



### SLEEP STUDY

More than half of our twin participants have already completed the online sleep questionnaire. Our goal of 85% participation is well within reach! We are particularly interested in collecting questionnaires from twins whose brothers or sisters have already completed the survey, so that we can begin to look more closely at genetic influences on sleep.



### PROPOSAL FOR RISK BEHAVIOR ASSESSMENT

We currently have a proposal in review to conduct interviews that measure risk taking behaviors. If this proposal is funded, we will begin conducting interviews with CTS twins this fall that ask about different types of risk taking behavior, then match the answers with specific groups of genes.

## WEIGHING THE RISKS

*“Living at risk is jumping off the cliff and building your wings on the way down.”*

*- Ray Bradbury*

In Colorado, a similar quote could be “Living at risk is jumping off the cliff and building your snowboard on the way down”. On any given winter weekend, you can find some skiers or boarders taking huge jumps and then barreling through the trees at supersonic speed without a helmet. Meanwhile, on the “green slope” there are those with their skis positioned in a wedge, crisscrossing the hill at a turtle’s pace.

Many factors determine how someone skis the hill. Experience, health, confidence, or even peer pressure can change a skier’s style. Another important factor, and one that researchers at IBG are interested in studying, is risk taking behavior.

Risk taking behavior can be seen in many aspects of everyday life, such as how fast you drive, whether you drink or use drugs, or whether you spend money impulsively or save it for a rainy day. All of these decisions are made partially based on the perceived risk and reward. For example, the reward for speeding is that you arrive at your destination more quickly. The risk for speeding is that you might get a ticket, or worse, get in an accident. For some



people, or depending on the situation, the potential reward is worth the risk. For others, the risk outweighs the reward.

At IBG, we are especially interested in studying risk taking behaviors that might have serious consequences, like drug use, gambling, and disregard for rules and laws. All of these behaviors can have serious negative outcomes not only for an individual, but also for society as a whole. Why are some individuals prone to taking these risks, and others are not?

If our current proposal is funded, we will be studying the genetic and environmental factors that influence risk taking behavior. This study will include several on-line questionnaires as well as an in-person interview for twins and their brothers and sisters. We will keep you updated as we find out more information. Thank you again for your participation in our research studies!