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Twin Matters

Fall 2017 Volume XXXIV

A Family Newsletter from the Mid-Atlantic Twin Registry

Greetings MATR Participants!

Researchers who study MATR twins for health-based research discover new findings all the time. We wanted to take a minute to bring you some of those results so you can see how your participation is shaping our knowledge of health and behavior. Also included are updates about our ongoing studies and pictures from this year's Multiples Day at Kings Dominion. We send our gratitude to you for your participation in twin research and hope you enjoy the updates in this newsletter!

Warm Regards,

Judy Silberg, PhD
MATR Scientific Director

In This Issue

- Study Opportunity for families with 9 & 10 year old same-sex twins—(ABCD) Study
- Text 4 Thoughts (T4T) Study (16-21 year old female/female pairs)
- Study Results Summary From Publications

Adolescent Brain Cognitive Development (ABCD) Study Update

The MATR is excited to be part of this groundbreaking study which is poised to help promote deeper understanding of brain and cognitive development. Part of what makes this such a uniquely impactful study is that it will involve the combined efforts of 21 academic institutions – in fact, it's the largest study of its kind on long-term brain development. Making this a successful study depends upon the efforts at each study site as well as that most essential ingredient... the participants! Out of the 21 institutions involved only four are inviting twin participants and the MATR is one of those crucial twin sites. The twin participants are critical because they will allow the researchers to better understand how genetics and environment influence brain and cognitive development. Thus far, there has been an impressive commitment by participants to help make this study a success, but the work isn't done yet. The MATR recruitment window for this study is relatively short – only about two years – and we have completed the first year of recruitment. Some of the feedback we have received from participants that have completed the study appointment is that despite being a relatively involved study visit, participants found it interesting and engaging. Twins particularly seem to like the MRI task that allows them to “win” money while “playing” a computerized game where they try to “hit” a target.

For more information, see go.vcu.edu/twinstudy. The MATR recruitment step can be completed by phone, mail, or online. We look forward to continuing to find twin families who want to take part in this exciting and one-of-a-kind project!

New Info?

Remember to let us know if your name, address, email, or telephone number changes by going to: go.vcu.edu/twinupdate, sending an email to us at: matr@vcu.edu or calling our toll free number 1-800-URA-TWIN (800-872-8946).

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AYATS Update

The AYATS staff plans to continue scheduling Wave 2 appointments at VCU through Dec 2017. That means there is still a little time to complete your Wave 2 appointments at the study site!

Study requests for completing Wave 2 follow up surveys online may continue well into 2018.

Text 4 Thoughts (T4T) – Study Update

MATR recruitment for the *Text-4-Thoughts (T4T)* study began approximately a year ago, starting with adolescent twins ages 16-17 and it expanded to include young adult twins ages 18-21. This age range represents the timeframe of intense and rapid growth and development that coincides with key transitional life events, like getting ready for college or moving out of the home. These life events oftentimes occur along with intense social, academic, and familial pressures. It is in this context that adolescents and young adults are often establishing decision-making patterns which can have positive or negative impacts on their current and potentially future health outcomes. The T4T study staff hopes to better understand the factors that drive these decision-making patterns as well as refining strategies for improving how teens make choices that will likely go on to influence their lives well into their adulthood. We are currently inviting female twin pairs to take part in this attempt to help researchers identify some of the dynamics of teen and young-adult decision making! The MATR recruitment step can be completed by phone, mail, or online.



If you have not already, please take a minute to like our page to stay up to date on studies, twins in the news and events for twins! Check us out at www.facebook.com/twinsmatr or by searching “The Mid-Atlantic Twin Registry of VCU.”



How well do you know your twin?

Two sets of twins here at VCU pair off to test just how well they know their co-twins in this fun video: go.vcu.edu/twinnews

Building a Puzzle... Your Participation = Results

Did you ever purchase one of those 1000-piece puzzles thinking that putting it together would be a great family activity?...and, months or sometimes, even a year later, after trying to find the same ocean-blue pieces that actually fit together, you still haven't finished? If so, then you have an idea of what doing research is like. A request we sometimes hear from our participants is “What were the results of the study I did?” And oftentimes, unlike what media tends to portray as “scientific discoveries,” research results are very rarely like that, so this can be a difficult question to answer easily. Instead, what a particular analysis typically finds is a clue to putting together the next few pieces of the puzzle. And slowly but surely, those individual puzzle pieces begin to fit together in a manner that hints at what the ultimate image might be. Sometimes, the pieces of the puzzle may lock together in a way that results in a new method for analyzing the data that was collected. Other times, it could be narrowing the focus from broad “factors” that influence a behavior or condition, to just a few specific factors that are likely to be the most significant and thus will narrow the focus of future research and analysis to those factors. You may wonder what this means in terms of your participation in a study. One of the great things about much of the twin research done through the MATR is the data sets that are produced can often be used for years to come, and numerous analyses and publications typically come from each study. This is because the design of the study, along with your participation, creates robust data sets that help researchers fit together, one and two pieces at a time, a beautiful “1000 piece” puzzle.

For this newsletter, we have selected to share just a few of the recently published findings or “matched puzzle pieces” that MATR twins helped make possible (shown on the right).

Study: Virginia Twin Study of Adolescent Behavioral Development (VTSABD) and the Young Adult Follow Up (YAFU)

Study PI and Institution

VTSABD - Dr. Lindon Eaves, Judy Silberg; YAFU - Virginia Commonwealth University

Twins' contribution to the study

A series of three interviews that took place at the twin family's home or by phone

Topic of this analysis

Bullying victimization

How twins' data was analyzed

Bullied twin's data was compared to their non-bullied co-twin to determine whether being bullied caused more likelihood for certain psychological conditions.

Findings

Bullying victimization in childhood is a significant environmental trauma and should be included in any mental health assessment of children and young adults.

Journal Article

Psychiatric outcomes of bullying victimization: a study of discordant monozygotic twins. Silberg JL, Copeland W, Linker J, Moore AA, Roberson-Nay R, York TP. *Psychol Med.* 2016 Jul; 46(9):1875-83. doi: 10.1017/S0033291716000362. Epub 2016 Mar 16. (PUBMED Link: <https://www.ncbi.nlm.nih.gov/pubmed/26979565>)

Study: Virginia Adult Twin Study of Psychiatric and Substance Use Disorders (VATSPUD)

Study PI and Institution

Dr. Kenneth Kendler, VCU

Twins' contribution to the study

Series of face-to-face and phone interviews from 1987-1998

Topic of this analysis

Insomnia

How twins' data was analyzed

Identical and fraternal twins were compared to each other and to other twin pairs as well as analyzing potential differences between men and women.

Findings

“Genetic factors influence insomnia symptoms in adults, more so for females than males, and these influences are largely stable over time....Unique environmental factors continue to account for a large amount of variance in insomnia symptoms.”

Journal Article

A Longitudinal Twin Study of Insomnia Symptoms in Adults. Lind MJ, Aggen SH, Kirkpatrick RM, Kendler KS, Amstadter AB. *Sleep.* 2015 Sep 1; 38(9):1423-30. doi: 10.5665/sleep.4982. (PUBMED Link: <https://www.ncbi.nlm.nih.gov/pubmed/26132482>)

Study: Adolescent and Young Adult Twin Study (AYATS)

Study PI and Institution

Dr. Roxann Roberson-Nay, VCU

Twins' contribution to the study

Phone, paper, and in-person interviews and a series of anxiety testing measures between 2014 –Dec 2017

Topic of this analysis

Differences in anxiety response to breathing CO2 enriched air

How twins' data was analyzed

Twins' responses to breathing CO2 enriched air were compared to answers given to survey questions regarding anxiety traits.

Findings

The researchers found three distinct categories based on responses to the CO2 measure in correlation with anxiety symptoms (overall low, high, or acutely increased anxiety). Using this information as a guide will help researchers further clarify the enriched CO2—hypersensitivity anxiety association. Doing so, will allow researchers to continue to use this task as a potential indicator of anxiety and panic risk factors.

Journal Article

Clinical characteristics of latent classes of CO2 hypersensitivity in adolescents and young adults. Rappaport LM, Sheerin C, Savage JE, Hetttema JM, Roberson-Nay R. *Behav Res Ther.* 2017 Jun; 93:95-103. doi: 10.1016/j.brat.2017.03.015. Epub 2017 Mar 30. (PUBMED link: <https://www.ncbi.nlm.nih.gov/pubmed/28395158>)

Study: Juvenile Anxiety Study (JAS)

Study PI and Institution

Dr. John Hetttema, VCU

Twins' contribution to the study

Phone, paper, and in-person interviews and a series of anxiety testing measures between Fall 2012 - Spring 2016

Topic of this analysis

Eye gaze patterns and pre-pubescent anxiety

How twins' data was analyzed

Twins' eye gaze patterns were compared to each other as well as anxiety symptoms.

Findings

Past research suggests that adults demonstrate an association between anxiety and avoidance of eye contact, but there had not been many attempts to explore the potential development of this association during childhood. This analysis indicates that children's eye gaze patterns can be shaped by conditioning (in this case by a fear-

Study: The Genetic Epidemiology of Seizures: A Twin Study (and related twin seizure/epilepsy studies)

Study PI and Institution

Dr. Linda Corey, VCU (Combined with data from Norwegian & Danish Twin Registries)

Twins' contribution to the study

Questionnaires and medical record information (late 80's – early 2000's)

Topic of this analysis

Epilepsy after febrile seizures

How twins' data was analyzed

Fraternal twin pairs were compared to identical twin pairs for occurrence rates of both twins having febrile seizures (FS) of simple FS, complex FS, or FS status epilepticus (prolonged FS lasting more than 30 minutes).

Findings

Their findings suggest a genetic influence on the development of epilepsy after a history of febrile seizures. Furthermore, those with a history of FS status epilepticus were at the highest risk for the developing epilepsy.

Journal Article

Epilepsy After Febrile Seizures: Twins Suggest Genetic Influence. Seinfeld SA, Pellock JM, Kjeldsen MJ, Nakken KO, Corey LA. *Pediatr Neurol.* 2016 Feb; 55:14-6. doi: 10.1016/j.pediatrneurol.2015.10.008. Epub 2015 Oct 31. (PUBMED Link: <https://www.ncbi.nlm.nih.gov/pubmed/26638777>)

response stimulus) regardless of an individual's innate anxiety levels; whereas, similar to adults, children with higher levels of anxiety are more likely to avoid eye gaze. With further analysis, this information may have bearing on using eye-gaze patterns to help predict the progression of anxiety development. These findings also suggest that pediatric anxiety symptoms may be impacted, possibly in a positive manner, with conditioned-response learning.

Journal Article

Anxiety symptoms and children's eye gaze during fear learning. Michalska KJ, Machlin L, Moroney E, Lowet DS, Hetttema JM, Roberson-Nay R, Averbeck BB, Brotman MA, Nelson EE, Leibenluft E, Pine DS. *J Child Psychol Psychiatry.* 2017 Jul 24. doi: 10.1111/jcpp.12749. [Epub ahead of print] (PUBMED Link: <https://www.ncbi.nlm.nih.gov/pubmed/28736915>)

Disclaimer: Findings from these studies can be applied generally to the population. Readers should not apply this information to an individual, or use this information for self-diagnosis. As with all scientific endeavors, replication of the results may be needed in order to validate these findings.