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MID-ATLANTIC MATR TWIN REGISTRY VCU

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Twin Matters

A Family Newsletter from the Mid-Atlantic Twin Registry (MATR)

In this Issue

- Research Spotlight:

Psoriasis and Psoriatic Arthritis Twin Study

Female Microbiome Study Findings

Adolescent and Young Adult Twin Study

- New Research Project: Twin 360

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Twin Matters

A Family Newsletter from the Mid-Atlantic Twin Registry (MATR)

Greetings MATR Community!

As we head into the winter months, we are glad to bring you news of ways in which your participation in MATR studies is advancing our knowledge of human health! In this newsletter, we highlight a few of the findings that twins like you have helped to promote. For example, studies with MATR twins recently led to findings about the female microbiome as well as the genetic and environmental factors that influence e-cigarette use and smoking. In addition, we recently launched Twin360; a new project studying ways in which the pandemic has impacted our twins as well as aiming to learn about why some twins develop long-COVID and others do not. We thank each and every one of you for being a part of the MATR and making our research possible!

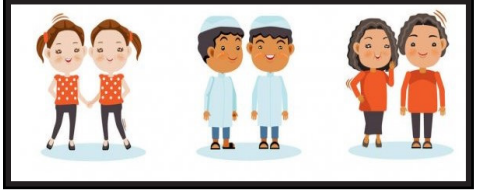
Sincerely,

Judy L Silberg

Judy Silberg, PhD
MATR Scientific Director

Know Twins?

We are always looking for new twins and higher order multiples to join the MATR community. If you have family or friends who are multiples or are the parents of multiples please invite them to visit our website ***matr.vcu.edu*** where they can read about the MATR and join online.



New Research Project Underway - Twin360

We are pleased to unveil a new MATR effort which you may have heard about in the news. The MATR Twin360 study is a research effort by scientists at VCU who want to get the full picture of the impact of the COVID-19 pandemic on the health of twin families. Since everyone was impacted by the pandemic in some way, Twin360 needs twin participants whether or not they had COVID-19. In addition to wanting to gain insight about the broader impacts of the pandemic, these scientists are also very interested in understanding why some of those infected with the virus experience long-term or recurring symptoms or sometimes develop brand new symptoms months later. Studying twins who had the virus, as well as those who did not, is a powerful way to expand our knowledge of the COVID-19 pandemic and ideally improve our ability to support those impacted. The MATR Twin360 project aims to provide a pathway for twins (ages 18 and older) to take part in this innovative and important research.

We began emailing invitations to MATR twins in September so please check your inbox or contact us to make sure we have your most recent email address.

"Since starting...twin studies early in my career and continuing as MATR Scientific Director, I have gained such a deep appreciation for the importance of twin participants and the pivotal role they play in helping us disentangle the combined influences of heredity and environmental factors on human health. Twin participants are vital for providing this same type of insight in order to answer questions about COVID-19, particularly the ways it will impact our long-term health...."

~ Dr. Judy Silberg, MATR Scientific Director

Please share your email with us at **go.vcu.edu/matrupdate** to receive invitations for upcoming MATR surveys. Sharing your email enters you into a raffle for $10 Target gift cards.

We Value You: The Mid-Atlantic Twin Registry (MATR) values our participants. If you have feedback regarding your experiences with MATR staff or research staff for any study, please do not hesitate to send us an email at matr@vcu.edu, call 1-800-URA-TWIN (1-800-872-8946), or call our Participant Coordinator, Carol Williams, directly at 804-828-8116.

Research Spotlight

MATR Twins Contributing to Advancing Wellbeing through Research Participation

Twins & Microbiome Studies

The microbiome (all the microbes that live on and in us) is increasingly becoming part of conversations about health – from probiotic supplements to yogurt to skin products, awareness of our microbiome is on the rise. But, you may be wondering, can our microbiome make a real difference in our daily health and wellbeing? And the answer to that question is - yes! But, there is still more to learn about exactly "how" it impacts our health. This has been the focus of certain research and will remain so for some time because the more the research community learns about the microbiome, the more apparent it is that it's a critical part of our lives. Two of the study summaries we provide in this edition of our newsletter highlight ways in which the microbiome may influence our health. This in turn can change the way we approach prevention and treatment of certain health conditions. Please read on to learn more…

Twins Provide Insight Into What Might Drive the Development of Psoriatic Diseases

Psoriasis (PsO), which is an autoimmune disorder causing inflammation and discomfort of the skin, affects approximately 3% of the global population.(1) Previous studies by the scientific community have demonstrated that psoriatic disease has a genetic component. PsO is often accompanied with other health conditions, such as psoriatic arthritis (PsA). However, twin studies have shown that many identical twins do not both have PsO or PsA. This suggests that the environment is also influencing the development of psoriatic conditions. Drs. Julia Manasson & Jose Scher (NYU Grossman School of Medicine) wondered about why this might happen. Their knowledge of the microbiome led them to consider if one of the environmental drivers of psoriatic disease might be based in microbiome differences. They knew that continuing with twin participants was the best way to answer this question so in 2019 they partnered with the MATR to help support their *Psoriasis & Psoriatic Arthritis in Twins Study* (PATS). They are pleased to share preliminary results that indicate there may be some differences in the gut and skin microbiomes of those twins with PsO and the unaffected cotwins.

In twins with psoriatic conditions, there was less of the microbe, *Ruminococcus bromii,* found in the gut. *R.bromii* can break down certain starches and helps make a chemical called butyrate, which plays a role in regulating the immune system. Additionally, comparisons of skin samples from the scalp, *hint* at differences in microbe diversity between those with and without PsO. It is important to keep in mind that this is early information and the findings need to be carefully validated. Also, the number of participants in this study was not large. Currently, these findings just point to areas of interest for continued, in-depth study so *this information should not be used to inform your healthcare decisions.* We look forward to Drs. Manasson and Scher continuing to expand our understanding of how the microbiome influences human health and wellbeing. Studies like these demonstrate just how impactful twins are to these research discoveries.

Acknowledgement: The MATR would like to thank Drs. Julia Manasson & Jose Scher for their input on this article.

(1) Greb JE, Goldminz AM, Elder JT, et al. Psoriasis. Nat Rev Dis Primers 2016;2:16082. DOI: 10.1038/nrdp.2016.82.

Female Microbiome Findings

Several years ago over four hundred MATR twins took part in a study that aimed to learn more about the female vaginal microbiome. These twins graciously traveled to a VCU clinic, completed a brief survey, and provided microbiome samples. Researchers then analyzed the samples and data to learn more about genetic and environmental factors that influence vaginal health. Their findings indicate that a certain type of microbe, *Lactobacillus crispatus,* is genetically favored by women of European ancestry. This particular microbe is known to be helpful at shielding from certain sexually transmitted diseases and is often included in probiotic supplements or interventions to help increase the presence of *L. crispatus* in a person's microbiome community. But the discovery that there may be a genetic predisposition to favoring this microbe indicates that attempts to increase its presence may not be as effective in some women depending upon their genetic composition. The scientists suggest that a personalized approach should be taken to ensure vaginal health for all women, such as identifying protective features of other microbiome communities. We are happy to announce that results from the research team's analysis was recently published in Nature's Communications Biology, and can be found here: https://www.nature.com/articles/s42003-021-02394-6 (tinyurl.com/ukcmbvne).

For an interesting "behind the paper" blog post that summarizes the study findings further, we recommend: tinyurl.com/2fb58wj9

What Twin Studies Suggest about E-Cigarette Use and Smoking

Approximately five years ago, the MATR collaborated with Dr. Roxann Roberson-Nay on recruitment for the Adolescent and Young Adult Twin Study (AYATS). This study produced a valuable, robust dataset that can be used to help promote our understanding of health behaviors for some time. For example, electronic cigarette (e-cigarette) usage is on the rise, particularly in adolescents and young adults. The negative health consequences of conventional and e-cigarette use is well documented as is the connection between the two behaviors. Previous studies have demonstrated that people who use e-cigarettes are more likely to go on to participate in conventional smoking.(1) Researchers at VCU wanted to understand how genetic and environmental factors might influence the start-up of e-cigarette usage in adolescents and young adults. They were also curious how this might compare to the initiation (or start-up) of conventional cigarette smoking habits. The AYATS twin data was a powerful tool in helping them shed light on the genetic and environmental factors influencing these behaviors. Similar to past research studies, the data indicated the same strong connection between e-cigarette use and conventional smoking. It's not necessarily surprising that for both e-cigarette and conventional cigarette use behaviors resembled family-use. This likely accounts for both genetic and shared environmental factors that influence initiating behaviors. Additionally, both types of use showed significant similarity of unique (or non-shared) environmental factors driving the initiation of conventional and e-cigarette use. Examples of non-shared environmental influencers are friend groups, peer perceptions of nicotine products, as well as marketing. This suggests that these non-shared environmental factors also play a significant role in someone deciding to start use of (or not) e-cigarettes and conventional cigarettes and highlights this area as one of potential focus for ways to reduce start-up behaviors. The research team hopes that additional studies are possible to expand upon our understanding of factors impacting conventional and e-cigarette initiation and usage. (See article: Prom-Wormley EC, Clifford JS, Cooke ME, Cecilione J, Maes HH, Do E, et al. The Genetic and Environmental Influences Contributing to the Association between Electronic and Conventional Cigarette Initiation. Nicotine & Tobacco Research. 2020. pmid:33017842 - https://pubmed.ncbi.nlm.nih.gov/33017842/).

Acknowledgement: The MATR would like to thank Dr. Elizabeth Prom-Wormley for her input on this article.

(1) Soneji S, Barrington-Trimis JL, Wills TA, et al. Association between initial use of e-cigarettes and subsequent cigarette smoking among adolescents and young adults. JAMA Pediatr. 2017;171(8);788–797.