Michigan State University

TWIN REGISTRY

2022 ANNUAL NEWSLETTER, 16TH EDITION

A letter from Dr. Alex Burt & Dr. Kelly Klump

Greetings,
The past few years have been a tumultuous time due to the COVID-19 pandemic. We at the MSUTR continue to take all of the necessary precautions to prevent the spread of COVID-19 within our research spaces. First, we would like to share with you a few of the recent milestones reached by the MSUTR:

- *Over 32,500 twins have now participated in a Michigan Twins Project (MTP) study, including over 4,800 twins who participated in the Children of Twins Project (COT).*
- *Over 355 twins have completed the Michigan Twin Neurogenetics Study.*
- *Over 1,165 twins have participated in the Twin Study of Hormones and Behavior across the Menstrual Cycle Study.*
- *Over 400 twins have participated in A Twin Study of Mood, Behavior, and Hormones in Males.*

This research would not be possible without the generosity of the twin participants, their parents, and the 100+ research assistants who dedicated over 60,000 hours of their time to the projects! Thank you for making our research possible and for making a difference in our quest to understand the origins of major medical, psychological, and social strengths and difficulties! As always, feel free to contact us about anything in this newsletter or any of our studies!

Sincerely,
Drs. Alex Burt and Kelly Klump, Directors of the Michigan State University Twin Registry

MSU Twin Registry

Did you know?

TWIN FUN FACTS

- *Twins can have different fathers; this is a one-in-a-million occurrence!*
- *Sometimes conjoined twins can feel or taste what the other one does.*
- *Identical twins that have asymmetric features (e.g., one twin has a birthmark on their left arm while the other has the same mark on their right arm) are called mirror image twins. They're reflections of each other.*

Sources: https://www.huffpost.com/entry/twin-facts_n_4959012

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Our Recent Study's

RESEARCH FINDINGS

Given the stressful impact of the COVID-19 pandemic, the MSUTR researchers were interested in investigating how the COVID-19 pandemic has affected levels of worry.

To answer this question, we examined a sample of 402 female twin pairs aged 16-26 years from the Twin Study of Hormones and Behavior Across the Menstrual Cycle. The participants completed daily measures on worry over a period of 49 days. We compared their responses across the following COVID-19 groups.

Group 1 participants completed the study before the 1st case was reported in the USA on January 21st, 2020. Group 2 participants began the study before the 1st reported case, but they didn't finish the study until after the 1st reported case (i.e., their data collection spanned the date of the 1st USA case). Group 3 participants completed all of the study after the 1st reported USA case.

We found that worry differed across these groups, whereby Group 1 had the lowest ratings of daily worry scores and Group 3 had the highest ratings of worry (see Figure 1). We also examined changes within Group 2 participants to investigate how the announcement of the 1st USA case impacted individuals' daily levels of worry. In these analyses, we compared worry scores on the days before the 1st case was reported versus the days after the 1st case was reported. We found a similar increase in worry across these days (see Figure 2).

These results suggest that the onset of the COVID-19 pandemic was associated with increased levels of worry, potentially due to concerns about contracting the illness or about the safety and well-being of family and friends. Moving forward, we hope to continue the investigation of the impact of COVID-19 on worry and other measures of mood and behavior using data collected from the MSUTR.

Figure 1. Average daily worry scores across groups.

Figure 2. Average daily worry scores among Group 2 participants in the days before versus after the after the 1st COVID-19 case was reported in the USA.

OTHER TWIN STUDIES HAVE FOUND...

Largest US twin study probes whether nature or nurture makes us sick

Twin studies are often used to determine how much something is caused by genetic factors and environmental factors. In this study, researchers used a private insurance agency's (Aetna) database that had medical data of over 56,000 twin pairs to study more than 500 disease related traits. The researchers found that cognitive diseases (e.g., Alzheimer's) were influenced the most by genetic factors, while environment had a large influence on eye diseases (e.g., myopia). They also found that almost a quarter of the diseases were influenced by the environment in some way (Lakhani et al., 2019).

Source: https://www.theverge.com/2019/1/16/18185613/health-genetics-environment-nature-nurture-science

Identical twins aren't always 100% genetically identical, new study finds

It is often assumed that the difference between fraternal and identical twins is that identical twins are genetically identical. However, that is not always the case. Researchers in Iceland conducted a four-year study that measured differences in genetic mutations among 387 identical twins, their parents, children, and spouses. In approximately 15% of twin pairs, one twin carried a higher number of genetic mutations than the co-twin. When studying the early embryonic development of identical twins, they found that twins differed by approximately 5 mutations in early development (Johnson et al., 2021).

Source: https://www.cnn.com/2021/01/08/health/identical-twins-genome-study-scn-scli-intl/index.html

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Check it Out

JOIN OUR CURRENT STUDIES!

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Twin Study of Hormones and Behavior across the Menstrual Cycle

This project investigates changes in hormones and behavior across the menstrual cycle in female twins ages 15-30. Participating twins are paid up to $250 for completion of the study. Currently Screening: Female twin pairs ages 15-30 in which one or both twins are taking hormonal contraceptives. If you are interested or would like more information:
E-mail: klumptr@msu.edu
Phone: (517) 432-3665

A Twin Study of Mood, Behavior, and Hormones in Males

This study investigates differences in hormones and behavior across puberty in identical and fraternal male twin pairs between the ages of 7 and 17. At least one parent/caregiver is required to participate with the twins, and participating families are paid up to $300 upon completion of a virtual assessment. Currently Screening: Male twin pairs ages 7-17, with one parent/caregiver willing to participate. If you are interested or would like more information:
E-mail: klumptr@msu.edu
Phone: (517) 432-3665

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Michigan Twin Neurogenetics Study

This study investigates brain and behavior development in twins ages 12-17 that have previously participated in The Twin Study of Behavioral and Emotional Development in Children (TBED-C). The study includes an MRI session and takes place at the University of Michigan. Participating families are paid up to $375 for completion of the study. Currently Screening: Twin pairs that previously completed TBED-C and are now 12-17. If you are interested or would like more information:
E-mail: burtlab@msu.edu; Phone: (517) 355-6878

Michigan Twins Project & Children of Twins Project

These related studies are focused on developing a registry of twins ages 3-55 born in Michigan. To participate, adult twins and parents of child twins complete a brief 30 minute questionnaire that assesses family composition and health status. The questionnaire may be completed using our online system or via mail. Participating twins/families receive a $15 gift card for completion of the questionnaire and are given the opportunity to be contacted about future twin studies. Currently Screening: Twins ages 3-55. If you are interested or would like more information:
E-mail: msutr@msu.edu; Phone: (517) 432-5604

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