

## Twin Facts

- In 1980, 1 in every 53 babies born in the US was a twin. By 2009, that number rose to 1 in 30, which means that the twin birth rate rose 76% in 3 decades.
- Fraternal twin women have twice the chance of giving birth to twins than non-twin women.
- Nigeria has the highest rate of multiple births in the world. More identical than fraternal twins are born in this country.
- If a pair of male identical twins marries a pair of female identical twins, their children will be cousins in terms of their social relationships. But genetically, they are siblings, as they share 50% of their genes with each other!
- The easiest way to tell identical twins apart is by their belly buttons, as the umbilical cords leave different scars!

## Celebrities who are also twins:

- Mary-Kate and Ashley Olsen
- Scarlett and Hunter Johansson
- Ashton and Michael Kutcher
- Cisele and Patricia Bundchen

## Introduction

Welcome to the 10<sup>th</sup> edition of the Michigan State University Twin Registry (MSUTR) Newsletter! This edition includes research findings from our studies, articles on physical differences in twins, as well as information about participating in our current twin studies.

First, we would like to share with you a few of the recent milestones reached by the MSUTR:

- Over 24,000 twins have now participated in the Michigan Twins Project (MTP) study.
- We've added a study called the Children of Twins Project (COT) that assesses 30-55 year-old twins and their families. Over 4,200 twins have participated to date!
- The Twin Study of Behavioral and Emotional Development in Children has reached its goal of assessing 2,000 twins and their parents during the five-year span of the project!
- The Twin Study of Hormones and Behavior across the Menstrual Cycle also has reached its goal of assessing 590 female twins.

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 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 MSUTR)

## Research Findings from Our Studies!

The MSUTR researchers were interested in continuing to explore how similar identical twins and fraternal twins are in personality traits. Previous studies conducted through the MSUTR have shown that identical twins may be more similar than fraternal twins in their personalities (e.g., how impulsive they are, how shy they are). The current study explored whether identical twins were more similar to each other than fraternal twins in their levels of perfectionism (i.e., a tendency to set excessively high standards for oneself and/or others). We examined a sample of 386 female identical twins and 390 female fraternal twins (ages 8-16) from the *Twin Study of Mood, Behavior, and Hormones during Puberty* to

answer this question. We found that identical twins were more similar to each other in their levels of perfectionism than were fraternal twins (see Figure 1). It is important to note that these findings do not suggest that identical twins are more perfectionistic than fraternal twins. In fact, there were no differences in levels of perfectionism between identical and fraternal twins (see Figure 2). What the study does suggest is that genes likely influence one's level of perfectionism, since identical twins share twice as many genes as fraternal twins. Moving forward, we hope to be able to continue investigating perfectionism and other personality traits using data collected from the MSUTR.

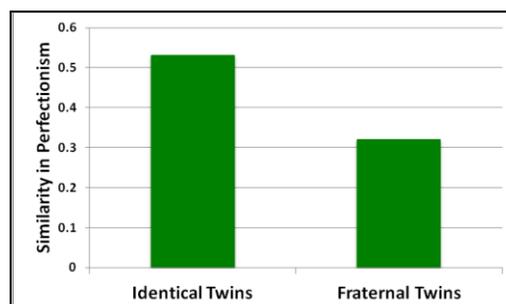


Figure 1. Twin Similarity in Perfectionism

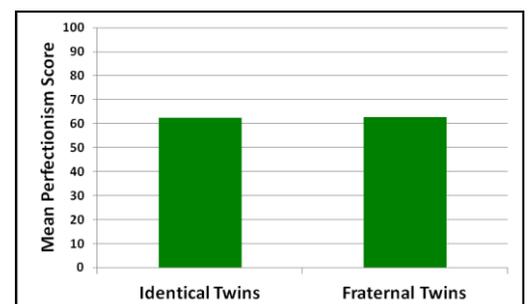


Figure 2. Mean Perfectionism Level

"Twin Facts" sources:

# Effects of Exercise on Twin Development

A recent study, described in *The New York Times*, found that twins who differed in their exercise habits as adults developed quite different bodies and brains, regardless of shared physical activity as children. Researchers at the University of Jyväskylä, and other institutions in Finland, utilized their twin database (FinnTwin16) for this project. This study collects information about twins' health and medical conditions, starting at age 16 and repeating once every few years thereafter.

Researchers focused on young adult, identical twins, in their early-to-mid-20s, whose exercise habits had changed as they left their childhood homes. Researchers invited the twins to their lab and measured different physical traits, such as endurance capacity and body composition. The researchers were then able to determine that while the twins were genetically identical, they "looked surprisingly different beneath the skin and skull"! Twins who exercised less than their co-twins had lower endurance capacities and a higher body fat percentage. Interestingly, these same twins had similar diets, so their food choices were unlikely to have contributed to the health differences. The twins' brains were also found to be very different. Twins who were more active had significantly more grey matter (i.e., brain tissue that processes information from sensory organs), "especially in areas of the brain involved in motor control and coordination".

According to the article, Dr. Urho Kujala, a professor of sport and exercise medicine who oversaw the project, noted that "genetics and environment 'do not have to be' destiny when it comes to exercise habits". This study shows that while upbringing and genes may influence one's tendency to be physically active or inactive, individuals are able to overcome that legacy well into adulthood.

Reynolds, G. (2015, March 4). One Twin Exercises, the Other Doesn't. In *The New York Times*. Retrieved March 12, 2015, from [http://mobile.nytimes.com/blogs/well/2015/03/04/one-twin-exercises-the-other-doesnt/?emc=edit\\_hh\\_20150310&nl=health&nid=63484465&r=0&referrer](http://mobile.nytimes.com/blogs/well/2015/03/04/one-twin-exercises-the-other-doesnt/?emc=edit_hh_20150310&nl=health&nid=63484465&r=0&referrer)



Twins are a biological phenomenon that are fascinating to all! It therefore is no surprise that individuals are often shocked to meet twins who look nothing alike. Many people think that in order to be twins, individuals must look exactly alike.

Lucy and Maria Aylmer (pictured right) are sisters, and yes, they're twins too! Due to a rare scientific quirk, the girls have different skin colors, among other contrasting physical traits. The girls' mom, Donna, is half Jamaican and the girls' father, Vince, is White.

While Lucy and Maria's physical differences may seem surprising, it is actually quite common for fraternal twins to vary in their appearance. Fraternal twins can differ in their skin tone, hair color, eye color, and even their height.

For example, Hussain Bisad and twin sister Khardra have one of the biggest height differences ever

## Physical Differences in Twins



recorded. Hussain stands at 7 foot 9, while Khardra stands at 5 foot 5. The pair has a 28-inch height difference between them!

In addition to physical differences, it is also possible for twins to have different birthdays. Maricica Tescu, a Romanian woman, gave birth to her sons on different days, in different calendar years! Her first son, Catalin, was born in December, two months premature. However, her second son, Valentin, was born 59 days later, in February. Nonetheless, both healthy baby twin boys were released from the hospital on the same day.

While individuals often think of twins as being extremely similar, in reality, many twins differ greatly in behavioral traits and physical appearance.

References:

<http://www.mirror.co.uk/news/real-life-stories/black-white-twins---10-5265383>

[http://www.oddee.com/item\\_96625.aspx](http://www.oddee.com/item_96625.aspx)

## Our Current Studies

**Study 1. Female Twin Study of Hormones and Behavior:** This project investigates changes in hormones and behavior across the menstrual cycle in female twins ages 16-25. The study includes three meetings and one phone interview, scheduled around the twins' availability. Two of the three appointments can take place in-person at a location near one's home or via Skype. Participating twins are paid up to \$140 for completion of the study.

**Study 2. 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 questionnaire that assesses family composition and health status. The questionnaire may be completed using our online system or via the mail. Participating twins/families are sent a Meijer gift card to thank them for their participation and are given the opportunity to be contacted about future twin studies.

If you are interested in Study 1, or know someone who is, please contact us at: [msutr@msu.edu](mailto:msutr@msu.edu) or call (517) 432-3665

If you are interested in Study 2, or know someone who is, please contact us at: [msutr@msu.edu](mailto:msutr@msu.edu) or call (517) 432-5604