Twins, including KIRO reporter, help UW solve genetic riddles

BY LIBBY DENKMANN, **KIRO Radio Reporter** | April 7, 2015 @ 5:23 am

KIRO Radio's Libby Denkmann and her sister, Jillian Denkmann, are members of the UW Twin Registry. (KIRO Radio/Libby Denkmann)

Twin NASA astronauts Mark and Scott Kelly are now serving as guinea pigs in a first-of-its kind experiment to test the effects of zero-gravity on the human body.

The data gleaned from the Kelly brothers may one day help astronauts on missions to Mars, and beyond.

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While we have yet to launch into space, my twin sister and I are part of a twin study much closer to home.

Since 2002, The University of Washington Twin Registry has collected approximately 9,000 pairs of twins to help unlock the nature-versus-nurture debate for all kinds of medical conditions.

Dr. Glen Duncan, an associate professor of epidemiology who also directs the Twin Registry at UW, studies how people's environments shape their health.

But the Twin Registry provides data for all types of research.

"This could span from pain to eating disorders to asthma, cardiovascular disorders, diabetes and so on," Duncan said.

While identical twins are virtually genetic replicas of one another, fraternal twins like Jill and I share no more than 50-percent of their DNA.

Twin studies benefit by comparing data from both fraternal and identical sets of twins who each experienced the same environmental factors growing up.

"When you look at a condition that we know is highly heritable, it has a strong genetic component, the correlation in identical twins is very high. The correlation in fraternal twins is going to be lower," Duncan explained.

"Based on those differences between and within twin pairs, we can come up with estimates of the heritability of that condition."

Dr. Duncan said it's also possible to see identical twins' genes respond to environmental stimuli differently. In part, epigenetics explains how people with identical DNA and similar surroundings could end up looking slightly different.

"Even though they might have the same genes, genes might be behaving in different ways. That's a new area of research for us."

Worldwide, twin studies have helped show the influence of genes on conditions like autism, schizophrenia, and obesity.

So far, the UW Twin Registry has shed light on the genetic link to various sleep disorders, the connection between depression and migraines, as well as the heritability of developing eating disorders like anorexia or bulimia.

Researchers at UW want to grow the registry to be one of the largest in the United States. They hope more twins of all ages will sign up to be a part of finding the causes, and hopefully cures, for all kinds of conditions.

"We do see that a lot of the twins are very altruistic about science," Duncan pointed out.

"A lot of people are interested in twins for research ... That power of both identical twins and fraternal twins."

While the twin astronauts seem happy to follow identical career paths, I'm beginning to question the heritability of being a radio personality.

My sister, Jillian, was very hesitant to lend her voice to this KIRO report.

"I'm not the radio twin," she laughed.

"Is your twin your worst interview ever?" Jill asked. "My goal all along was to sabotage your twin story ... Don't put that in there."

If you are a twin or a parent of twins, visit UWTwinRegistry.org to learn more.