

1-800-SRI-Twin (774-8946)

<http://www.sri.com/twin>

Our New Name and Logo

You may have noticed—we have a new name and logo!

We are now the Twin Research Registry at SRI International, a name that reflects our goals to be progressive, inclusive, and innovative in our research efforts.

Our new logo was designed to represent the individuals and twin pairs that are so important to our research studies. The logo originated from the symbol for “person” in Chinese characters. The design symbolizes multiplicity, connection, bridging, and networking. It also hints at SRI’s Northern California location, but it flows openly to reach out to the rest of the world. The combination of colors is meant to evoke trust, confidence, wisdom, dignity, enthusiasm, fascination, and strength.

The Twin Research Registry at SRI International is an active registry of twins of all ages and backgrounds, fraternal and identical, who are interested in learning more about twins and to participate in research studies to help advance science.

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Membership Update

2,609	Active members
83%	Adults
17%	Under age 18
66%	Adults who are identical
29%	Adults who are fraternal
70%	Adults who are female
35%	Under age 18 who are identical
56%	Under age 18 who are fraternal
53%	Under age 18 who are female
81%	Registry twins from California
<1–94	Age range of Registry members

Consumer Judgment Survey

Almost 500 of you participated in an on-line survey that focused on decision-making and we thank you! The questionnaire was developed by marketing experts at the Stanford School of Business to help determine how people make choices. They will be examining the difference/similarity between fraternal and identical twin responses to see if there is a genetic component. Stay tuned for results in the next newsletter!

Café Scientifique at SRI

On September 8, 2009, from 6:00 to 7:30 pm, Dr. Gary E. Swan, Director of the Center for Health Sciences at SRI International and the principal investigator of many research studies on twins, will be giving a talk at SRI’s Menlo Park Headquarters. He will be speaking about the role that twin research plays in health sciences and the many discoveries that twin studies have produced here at SRI and elsewhere around the world.

The talk will take place in SRI’s International Building at 333 Ravenswood Avenue, Menlo Park.

Enter SRI via the Middlefield Road at Ringwood Avenue entrance. The meeting is open to the public and free of charge. For more information on Café Scientifique Silicon Valley activities and to sign up for email reminders of upcoming events, go to www.cafescisv.org.

Recent Publications from SRI Twin Research

Conti, D. V., Lewinger, J. P., Swan, G. E., Tyndale, R. F., Benowitz, N. L., Thomas, P. D. **Using ontologies in hierarchical modeling of genes and exposure in biologic pathways** (Chapter 12). In: *National Cancer Institute, Phenotypes and Endophenotypes: Foundations for Genetic Studies of Nicotine use and Dependence, Tobacco Control Monograph No. 20*. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute. NIH Publication No. 08-6366, in press.

Swan, G. E., Lessov-Schlaggar, C. N., Bergen A. W., He, Y., Tyndale, R. F., Benowitz, N. L. **Genetic and environmental influences on the ratio of 3'hydroxycotinine to cotinine in plasma and urine.** *Pharmacogenet Genomics*, in press.

Swan GE, Lessov-Schlaggar CN. **Tobacco Addiction and Pharmacogenetics of Nicotine Metabolism.** *J Neurogenet.* 2009 Jan 19:1-10. [Epub ahead of print] PMID: 19152209 [PubMed - as supplied by publisher]

Benowitz NL, Lessov-Schlaggar CN, Swan GE. **Genetic influences in the variation in renal clearance of nicotine and cotinine.** *Clin Pharmacol Ther.* 2008 Aug;84(2):243-7. Epub 2008 Apr 2. PMID: 18388871 [PubMed - indexed for MEDLINE]

These papers report on data from the study of nicotine metabolism in twins (the PK study). Findings include: a summary of our work to date; development of a method to organize and categorize genetic data; the amount of variation in and heritability of the ratio of hydroxycotinine to cotinine; and an examination of the genetic and environmental sources of variation in clearance of nicotine and cotinine.

Why Twins Are Important to Research

Fraternal twins share 50% of their DNA and are matched on age and environmental influences. In research, fraternal twins are essential. They provide a comparison with the similarities observed in identical twins. If the rate of similarity is significantly higher in identical twins than in fraternal twins, this suggests that the excess similarity may be due to genetic factors because in doing the comparison the effects of similar age and environment has been controlled.

Involving fraternal and identical twins in research provides the opportunity to sort out the proportion of twin similarity due to genetic and/or environmental sources. On the environmental side, fraternal twins can help determine the relative importance of shared environment (e.g., similar diet) and nonshared environment (e.g., different exposure to pollutants, medication use, infection histories). Since there are few complex human traits that do not have input from genetic and environmental sources, the extent to which specific environments interact with specific genes is of interest.

Current/Upcoming Twin Studies

Opiate Efficacy: A Twin Study: Medications such as codeine and morphine are often the primary prescription medications used for pain relief. But how well they work can vary from patient to patient and no one really knows why. Some patients may require 10 times the amount of these medications to get the same level of pain relief as others. In addition, side effects such as nausea or different degrees of feeling tired can occur for some, while being nonexistent for others.

We have partnered with the Stanford University Department of Anesthesiology in a study funded by the NIH to investigate individual variations in reactions to these pain medications. We are recruiting fraternal and identical twins from SRI's Twin Registry to participate in this study. Our goal is to recruit a total of 125 twin pairs over a three-year period. The study requires twins to spend approximately six hours at the Stanford University Medical Center. To sort out individual differences in perception of pain, twins take part in several

procedures with and without a low dose of pain medication. Throughout the study, heart rate, blood pressure, carbon monoxide, and oxygen levels are monitored to determine the impact of genetics and environmental factors on the effects of medication on the pain response.

Each twin receives \$200 plus compensation for travel expenses for participation in the study.

To date a total of 68 twins have participated.

Thank you for participating!

If you would like more information or would like to sign up for the study, please call Jill at **1-800-605-3645**

Upcoming Study of Flu Vaccines

The National Institute of Allergy and Infectious Diseases recently awarded Stanford University a \$15 million, 5-year grant to study how current seasonal flu vaccines interact with the human immune system. Researchers hope to learn how the immune systems of individuals in different age groups are constituted and how they respond to *or* fail to defend against specific flu strains. Researchers expect that this work will help in developing more effective vaccines and lead to a better understanding of immunological correlates of health.

SRI will participate in this multi-faceted study by providing expertise in twin-design research. We will be responsible for the recruitment of twins from the SRI Registry. The age groups included in this study are: children 8-17 and adults 18-30, 40-49, and 70-100.

Twins will be asked to visit the Stanford University Medical Center on three separate occasions. At the first visit, twins will have a small amount of blood drawn and will then be given a flu shot. At the second and third visits, twins will simply have their blood drawn. The blood samples will then be analyzed for various indicators of immunologic activity.

We will begin recruiting in August 2009 and appointments will occur between September and November 2009. If you think you would like to take part in this study, you can call Jill at any time (you don't have to wait until August) and she will add you to her list of twins to be contacted. Jill's number is **1-800-605-3645**.

Do You Have Type I Diabetes?

Another collaboration with Stanford University is a study to identify twins in the SRI Twin Registry who have type I diabetes. This type of diabetes occurs when immune cells have destroyed the insulin-producing cells in the pancreas. Type I diabetes can develop at any age.

Stanford researchers will be examining the frequency and function of specific immune cells, called T cells that are thought to be involved in the development of the disease. It will be especially interesting to compare these results in twins to help determine how much impact genetics vs. the environment has in who gets diabetes.

If you have type I diabetes and would like to take part in this study, you will be asked to donate a blood sample, and if you're interested, you may be followed over time and provide additional blood samples for comparison. Also, if only one twin has Type I diabetes, it's possible that both twins could still participate in the study, depending on whether you meet the other enrollment criteria.

We're Going Green

You can now sign up to receive our newsletter via email. Simply call **1-800-774-8946** or send an email to sri.twin@sri.com and request to receive the newsletter via email. Please make sure we have your current email address.

You can see all of our newsletters on our website at <http://www.sri.com/twin> .

How to Contact Us

- ❖ **You can visit our website at <http://www.sri.com/twin>** for more information. Adult twins interested in registering can do so on this website.
- ❖ **You can email us at sri.twin@sri.com** to ask questions, update us with a new address or telephone number, or just to check in with us.
- ❖ You can call **1-800-SRI-TWIN (1-800-774-8946)**. We check for messages daily, and we will return your call as soon as possible.
- ❖ If you would like information about study opportunities, you can call our twin line at **1-800-774-8946** or you can call Jill at **1-800-605-3645**.

