

# MATR Twin Research (continued)

## Mid-Atlantic School Age Twin Study

For this study, twins between the ages of 11 and 18 and the mothers of school age twins are mailed a questionnaire. This long-term study focuses on genetic and environmental influences on adolescent adjustment and behavior, including family relationships, peer interactions, and community characteristics (such as the availability of drugs). We are still receiving questionnaires from the first phase of data collection, in which nearly 3,200 mothers and 2,000 adolescents have already participated. We recently mailed surveys to about 2,000 adolescent twins and 1,300 mothers of twins who had not yet responded or who were newly added to the registry. We will follow-up this mailing soon with phone calls to make certain the surveys arrived and to answer any questions.

Although we are still in the data collection phase of this study, we have completed some preliminary analyses. So far, we have found that adolescents' religious beliefs are primarily influenced by their environment and protect them against drug and alcohol use during this developmental period. Further, good parent-child communication is a protective factor against drug use, depression, conduct problems, and oppositional behavior. Among young twins, the factor most strongly associated with their own drug and alcohol use is whether their friends use drugs or alcohol. Future analyses on the complete data will enable us to better understand how genetic factors, family interactions, and the community environment influence the healthy development of children and teenagers.

## Seizure Study

We are continuing our study to find out if inherited factors are important in determining risk for the occurrence of seizures. The information provided by the 640 twins and more than 2,000 family members who have taken part in the study so far have allowed us to conduct some initial analyses. The results indicate that hereditary factors are indeed important in determining whether or not an individual is at risk for having epilepsy, as well as for determining whether or not a seizure, when one occurs, goes on for more than just a minute or two. These findings are encouraging and lead us to believe that it will someday be possible to identify specific genes that make people susceptible to seizures. In order to do so we depend on the participation of as many of you as possible. This is because epilepsy and seizures are very complex and rare disorders, and it is likely that there is more than one epilepsy or seizure susceptibility gene. Thus, we need to study an extreme-

ly large number of individuals in order to sort out exactly what is involved in determining risk for seizures.

If you would like more information on this research study or would like to let us know that you, a twin, or any other relative has experienced seizures that you have not already told us about, please contact Daphnee Massante (804) 828-8112 or Kristin Baldwin (804) 827-0503, or call 1-800-URA-TWIN and leave a message. If you have already told us about the occurrence of seizures in your family, but have not heard from us recently, we will be calling you soon to ask you to participate in this study. We would like to restate that any information you provide is used only for research purposes. It is also kept strictly confidential. In order to safeguard this confidentiality, we have a Certificate of Confidentiality from the National Institutes of Health, which protects any information obtained as part of our studies.

## The Virginia Twin Study of Adolescent Behavioral Development (VTSABD)

The VTSABD has completed four phases of data collection involving more than 1,400 twin families. Since the oldest twins who participated in this study are now young adults, we have recently started what we call the YAFU, the Young Adult Follow-Up Study, directed by Dr. Judy Silberg. Instead of a home visit, the twins are being contacted by telephone and asked about their behavior, lifestyle and background using a computerized interview.

Data from the first three phases of the VTSABD have been analyzed and published in major scientific journals. Dr. Lindon Eaves reported in the *Journal of Child and Adolescent Psychology and Psychiatry* that both genetic and environmental factors contribute to most aspects of adolescent behavior, including anxiety and depression, conduct problems, hyperactivity, and substance use. In a paper published in the *Archives of General Psychiatry*, Dr. Judy Silberg and her colleagues found that the increase in depression among adolescent girls may be due to the "switching on" of genes at puberty. This study also showed that the genes for depression influenced the occurrence of certain stressful life events, demonstrating a possible way depression can continue from adolescence into adulthood in women.

## Coming Soon

Be on the look-out for our latest study, the "Virginia Twin Survey", which will be arriving in many of your mail boxes soon! We are very excited about this study. We have two separate surveys, one for men and one for women, which ask how men and women think and feel about such things as body image, eating and drinking habits, as well as changes in weight. In this survey we also ask questions about the role that religion and spirituality play in your life.

When the survey arrives, we would be grateful if you could fill it out and mail it back to us as soon as you can. We would like to thank you for your help, so be sure to look inside the back of the survey cover, where we've featured our gift selections.

## Fun for Multiples and Their Families

Mark your calendars! The 5th Annual Multiples Family Day at Paramount's Kings Dominion amusement park (located between Richmond, Virginia and Washington, DC) will be held on Saturday, July 24, 1999. Don't miss out on this fun day as multiples from across the Mid-Atlantic states come together to celebrate their unique status as twins, triplets, and more! Tickets are \$20.00 for those 13 and older, and \$16.00 for children ages 3-12. For more information or questions, please contact Paramount's Kings Dominion at P.O. Box 2000, Doswell, VA 23047 or call (804) 876-5561.

## Address Changes/Questions/Comments

Please let us know if you have moved, are planning to move, or if your telephone number has changed. This will help us in our effort to send mailings and information to you in a timely manner. Your comments and suggestions are also welcome. You can leave us a message at 1-800-URA-TWIN (please don't forget to leave your name and phone number), write to us at: The Mid-Atlantic Twin Registry, PO Box 980003, Richmond, VA 23298, or e-mail us at: twinreg@hsc.vcu.edu.

## Twins of All Ages, Send us your Pictures!

Thank you to everyone who has sent in photographs. Please continue to send us pictures of yourself and your twin and remember to include full names and nicknames on the back of the photographs. We will use as many pictures as we can in our publications and website.

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# Twin Matters

A Family Newsletter from the Mid-Atlantic Twin Registry Volume III



### In this Issue:

- \* MATR Study Updates
- \* MATR Twin Stories
- \* Annual Multiples Family Day at King's Dominion

### Upcoming Issues:

- \* Twin Studies Around the World
- \* Resources For Twin Families





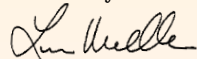
# A Message From the Directors

The MATR is growing! Thanks to a generous two-year grant from the W. M. Keck Foundation, we will be able to welcome many more twin families into the registry. This expansion will include the addition of thousands of new preschool, school age, and adult twin pairs from South Carolina, Virginia, and North Carolina. The MATR now involves the families of nearly 35,000 twin pairs and is one of the largest registries in the world.

We are devoting the majority of this issue of Twin Matters to updating MATR participants on our research activities. We hope you find this interesting and informative. For those of you who would like to learn more about our studies, we have many copies of our articles from scientific journals that we would be happy to send you. If you request any of these, please indicate what your specific area of interest is. Our contact information is on the back page of this newsletter.

If you have ever participated in any of our twin studies, we are very grateful—our success would not be possible without you. As always, if you have questions or comments, please feel free to call or write us.

Sincerely,



Lenn Murrelle, MSPH, PhD



Linda Corey, PhD



## Twin Stories from the MATR

Twins often have interesting stories to tell. Please write or call us about your unique twin stories. We hope to hear from you! *We would like to express a special thank you to Thompson Jones and Judy Anderson for sharing the following stories.*

### Twin Brothers Survived Okinawa

In World War II, Tommy and Talbert Jones, originally from North Carolina, were medical corpsmen during the invasion of Okinawa, Japan where 16,000 U.S. troops died and another 52,000 were wounded. Japan also suffered great loss of life, including an estimated 110,000 troops and civilians.

Talbert and Tommy served side by side for most of the war, being separated for only about six months. Their separation came after five brothers were killed on a sunken battleship and the military began separating siblings, to minimize the likelihood that families would lose more than one member. However, the Jones twins were very unhappy with this separation. The twins' father persuaded a congressman to "pull some strings" to get them back together. Once reunited, they served together in a makeshift hospital in the city of Naha. Tommy's job was to administer plasma and painkillers when the wounded were brought to the hospital. Talbert's job was to locate and transport the wounded. Talbert found his job very painful because he would encounter many of his friends who had died during the conflict.

The hospital, established in an old school, was the only building left standing in the city. Everything else had been leveled by bombs. Both brothers knew they were lucky to survive what they called a "nightmare."

Today, military policy does not allow siblings to serve in the same units. Tommy, now 75, lives in Rocky Point, North Carolina. Talbert resided in Jacksonville, North Carolina where he lived to be 72.



### Big Twins!

Judy Anderson is the proud mother of twin boys, Benjamin and Daniel. Benjamin and Daniel received considerable attention when they were born in Rocky Mount, North Carolina on May 1, 1997. The reason? The twins weighed 9 lbs. 1 oz. and 9lbs. 9ozs. Nearly 19 pounds of baby! The Anderson family received letters of congratulations from the Governor of North Carolina and the President and First Lady, Bill and Hillary Clinton. Mrs. Anderson said the attention they received was "grand" and very meaningful.



## The MCV Stress and Coping Twin Study

The MCV Stress and Coping Twin Study Newsletter has now joined the Mid-Atlantic Twin Registry newsletter. This will allow us to bring you updates and report progress on our projects more often and more efficiently. Twice a year you will be getting this newsletter, which contains information about the many studies in the Mid-Atlantic Twin Registry, as well as specific news about the Stress and Coping Twin studies.

Twins who participate in our studies often ask what we do with the information they give us. As with our past newsletters, we will try to answer that question in this and future editions of *Twin Matters*. This has been an exciting last year for us, with a number of important developments, as you will see.

### • Update on the Male-Male/Male-Female Study

In October 1998 we completed our second round of interviews with twins who are members of male-male (MM) and male-female (MF) twin pairs born in Virginia between 1940 and 1974. The goal of this study is to understand the genetic and environmental factors that may lead to the development of common emotional problems, including depression, anxiety, substance abuse, and eating disorders. In the first phase of interviews, completed in 1996, we interviewed more than 6,800 twins, mostly by telephone.

In the recently completed second phase, more than 5,600 of these twins participated again, this time with a face-to-face interview that lasted 2-3 hours. We have entered the data and are now beginning to analyze it. We will report the results in future editions of this newsletter. We believe the findings from this study will help scientists and health professionals to understand the causes of these conditions. Some results from the first round of interviews are reported below.

### • Alcohol Studies

Two research articles on the development of alcoholism have recently been published. The first of these is based on information collected from the first phase of the MM/MF study. This article, which appeared in the January 1999 issue of the *American Journal of Psychiatry*, reports that for men, the risk of developing alcoholism is about half due to genetic factors and about half due to experiences which are unique to individuals. We found that environmental factors shared by members of a twin pair, such as parents' use of alcohol and religious upbringing, were an important influence on whether men drank alcohol or not. However, we found little

evidence that family environment influenced risk for alcoholism among people who drink.

The second article combines data from the first phase of the MM/MF Stress and Coping Twin Study with data from our fourth interview with female-female twin pairs. This article, published in the December 1998 issue of *Alcoholism: Clinical and Experimental Research*, studied why individuals who have



their first drink of alcohol in early adolescence are more likely to develop alcoholism when

they are adults. Our results suggest that although the age at which a person first uses alcohol is correlated with (related to) later alcoholism, it does not seem to be a direct cause of alcoholism. We found that a twin's chances of having alcoholism are almost as well predicted by their cotwin's age at first drinking alcohol as by their own age at first alcohol use. If drinking age were a direct cause of alcoholism, we would expect a twin's alcoholism to be more closely related to their *own* age when first using alcohol. Clearly there are other disadvantages of alcohol use by teenagers, but it seems that factors other than age at first drink may be more useful predictors of who is at risk for developing alcoholism.

### • Depression Studies

Understanding differences between people in their risk for experiencing depression has remained a major focus of the Stress and Coping Project. Depression can affect people in many different ways. Some people have episodes that are relatively mild and still allow them to work, socialize, and do their chores around the house. For others, however, the depression is much more disabling, preventing them from completing normal daily activities. Some people have short episodes of depression lasting a few weeks from which they quickly recover. For others, the episodes last much longer. Some individuals will have only one episode of depression in their life while others will have many. In our entire Stress and Coping twin sample (including female-female, male-male and male-female twin pairs), we have tried to answer the

question, "What features of depression indicate that a person is at high genetic risk for this disorder?" We addressed this question by examining, among twins who had a history of depression anytime in their life, what features of their depression predicted the risk of depression in their cotwins. The answers were fairly clear and consistent with what doctors tend to find when treating their patients. The cotwins of twins who had had only a single episode of depression that lasted only a brief time and was not very disabling, had a relatively low risk for depression. By contrast, the risk for depression was much higher in the cotwins if their twins had had many episodes of depression in their life, these



episodes lasted a long time, and they were so severe that they greatly affected normal daily activities.

We know that episodes of depression are often set off by stressful life events. However, some researchers have claimed that the role of stress in depression declines over time. That is, for people who have had multiple episodes of depression, it takes less and less stress to cause them to go into another depression. It is as if they (or their brains) were "learning" to be depressed. Our results clearly confirm that the level of stress needed to cause depression is lower in people who have had many prior episodes of depression than in those who have never been depressed before.

### • Genes and Bulimia

Data from female twins who participated in the Stress and Coping Twin Project are playing an important role in changing our understanding of what causes bulimia nervosa. Bulimia nervosa is an eating disorder that affects mostly women. People who suffer from bulimia binge on food and then take steps to get rid of the food they have eaten, for example, by exercising excessively or by making themselves vomit.

When the twin data were analyzed, we found that genes play a major role in the cause of bulimia (between 68-97%). This was surprising, as bulimia is widely believed to be primarily due to environmental effects. However, our study's findings fit in well with data from other studies around the world. These findings do not take the environment "off the hook," however, because environmental factors, such as social pressures to be thin, also contribute to the development of bulimia. These important results from the Stress and Coping Twin Study were featured on the front page of the Richmond Times-Dispatch and in many other newspapers in the US and abroad, as well as on local and national television.

### • A New Twin Study Begins

Dr. Kenneth Kendler (director of the Stress and Coping Twin Study) recently received a grant from the National Institute on Drug Abuse to conduct a large twin study about the use and abuse of a number of legal and illegal drugs. Over the course of this three-year study approximately 1,200 male twin pairs will be asked about their drug use. The drugs covered include legal drugs (alcohol, nicotine, and caffeine) and illegal drugs (for example, marijuana and cocaine).

The study has three main purposes. First, we want to learn about the causes of drug use. Is drug use mainly due to genetic or environmental influences? Second, we seek to better understand the roles of environmental factors like the availability of drugs and peer drug use. Third, we want to determine if the mix of genetic and environmental causes of drug use is the same or different from one drug to another. Do genes influence the use of some drugs more than others? The researchers hope that this study will shed new light on this widespread problem, which affects many individuals and their families in the United States.

