INTERNATIONAL ADOPTION PROJECT Spring 2012

Attention Training Study

etween ages six and eight, children enter formal schooling and start forming a greater number of social relationships outside the home. This transition period presents children and their families with a host of new challenges, most of which require children to be more self-controlled than when they were in preschool. Controlling attention is key to self-control. If you don't want to eat that last cookie, turn your attention to something other than cookies. If you want to walk on a balance beam, focus on the task and don't get distracted by what is happening around you. We often think that paying attention is only important in the classroom, but being able to regulate attention is critical for success on the playground and in friendships, as well.

Our studies show us that children who lived in institutions before adoption often struggle with attention regulation and self-control. We find evidence of attention problems both in behavior and in our brain imaging studies.

It is time to stop studying the problem and see if we can do something about it.

This summer, for the first time, the MnIAP will be testing two training programs to see if either or both improve attention regulation and self-control in 6-8 year old children who experienced institutional care prior to adoption. Families interested in participating will be randomly (flip of the coin) assigned to either a program that attempts to directly train attention, one that uses mindfulness techniques to train attention and emotion regulation, or a no-training comparison group.

Both the Direct Attention Training and Mindfulness Training will involve 2 classes a week for 6 weeks of the summer. Each class will last about an hour. Parents also will be asked to work on fun activities at home with their children to strengthen the effect of the training. Before and after the 6 week class period, children will be assessed on a variety of behavioral and brain measures that allow us to determine whether the classes improved attention and self-control.

The Direct Training class focuses on three major areas: self-control (stopping oneself from performing impulsive or automatic actions), selective attention (learning to pay attention to certain parts of a situation while ignoring others), and creative thinking (using imagination to understand possibilities and alternatives). Children will practice all of these skills by playing fun games like "Simon Says," "Sound Bingo," and "Imagination Island." The Mindfulness class uses meditation techniques to train children's ability to consciously direct and maintain focus on their breath, body sensations, and experiences. Children will also learn to identify and attend to thoughts and feelings. By cultivating awareness of bodily, mental, and emotional states as well as teaching children relaxation strategies, this training program aims to provide children with the tools to monitor and adjust their own behavior.

Six months after the end of the training, we will be asking families to answer some questionnaires about their children's functioning. This will allow us to see whether the training programs have long-reaching effects. It will also help us understand the extent to which the skills children learned and practiced over the course of the program transferred to the school setting. We can then use the information to tailor these programs so that they best fit the needs of internationally adopted children and their families in the future.

For more information about this study, please contact Jamie Lawler or Elisa Esposito at attentiontrain.umn@ gmail.com.

Greetings from Professor Megan Gunnar

his newsletter is being sent to all families of internationally adopted children who have participated in our research and/ or are on our participant registry. It is also being sent to all the parents who have participated in our research with their children who were born and raised in Minnesota. We want to thank you all for giving your time so generously to this work.

The Minnesota International Adoption Project (MnIAP) started in 1999 with a grant from the National Institute of Health (NIH). That grant funded a survey of all of the families who had adopted internationally through Minnesota agencies between 1990 and 1998. It is hard to believe, but many of the children from that survey are teenagers or young adults now. From the survey we continued on with studies on brain and behavioral development in internationally adopted children. The NIH has provided the funds for all the studies we have conducted. Richard Lee, our colleague in the Psychology Department, has devoted considerable efforts to understanding how internationally adopted children who are ethnic/racial minorities in this country deal with discrimination and the role that families play in supporting their coping efforts. The NIH has also supported some of his work.

We are now focusing on two critical periods in the lives of children who enter their families through international adoption. First, through the Transition Study (see story on p. 4) we are focusing on pre- and post-adoption factors that influence how the child makes the transition into the adoptive home. Second, in several studies we are examining factors that influence the adjustment in adolescence, a challenging time for most children, but especially for many internationally-adopted children. We also focus a good deal of work on better understanding the



attention and self-control problems that children with difficult early life histories often have.

"Will we receive results of studies our children participated in?" This is a question we are often asked, and we understand the interest parents have in seeing how their children "did". Most of our work looks at behavior in the normal range. Rarely do our studies capture any clinically diagnostic information, and we are ethically bound not to release individual results that have no meaningful context. Instead, we send out this annual newsletter to give families a sense of our research findings and ongoing work. We hope you find it informative. Thanks again for all you do to make our work possible! We could not do this without you.

—Regents Professor Megan Gunnar & the Minnesota International Adoption Project Team

Peer Relationships, Bullying, and Victimization in Internationally Adopted Children

e know from decades of research that peers have important effects on children's development. We also know that some children adopted from institutions struggle in their relationships with peers. However, we are not as clear on whether their problems stem from being more aggressive with peers, or from poor social skills that put them at risk for being victimized. In the following study, we focused in on peer relationships to try to answer this question. We also paid particular attention to two types of bullying and victimization: Overt aggression, such as hitting, pushing and name calling and Relational aggression, such as threatening to exclude a child from the group, making up nasty stories about a child or in other ways ruining their relationships.

As part of a large study we did on genes (the Gene and Resilience Study on page 8), we asked adoptive parents of 575 children who were 9- to 14-years old to complete a questionnaire that covered all sorts of aspects of children's functioning, including their relationships with peers. The children came from 24 different countries, were adopted between 1.5 and 86 months of age, and had been in their families for at least 6 years.

In this analysis we were not interested in the BDNF gene, but in whether age at adoption and time spent in an institution would be related to the peer bullying and victimization. We found that longer periods of institutional care predicted that the adopted children would engage in more overt aggression, but not more relational aggression. Relational aggression may require a more sophisticated understanding of relationships, and this may explain why it is not being used more by children with greater histories of deprivation prior to adoption. Also, when we compared the behavior of children in this sample to the behavior of nonadopted children, the adopted children were no more aggressive. Thus, being overtly aggressive does not seem to be a big risk for children with a history of institutional care.



A much bigger risk was that children who experienced more institutional care prior to adoption would be less accepted and more victimized by bullies. Parents reported that their children suffered from both more overt and relational victimization. This was the case despite reports that their children were no less positive in their social behavior towards peers.

Across many studies, we know that being bullied increases the risk of children becoming anxious and depressed. We found this to be true in this study as well. Parents who described their children as being bullied more often also reported more symptoms of anxiety and depression.

We will be continuing this line of research and considering the types of interventions that might be useful to help reduce the bullying of postinstitutionalized children.

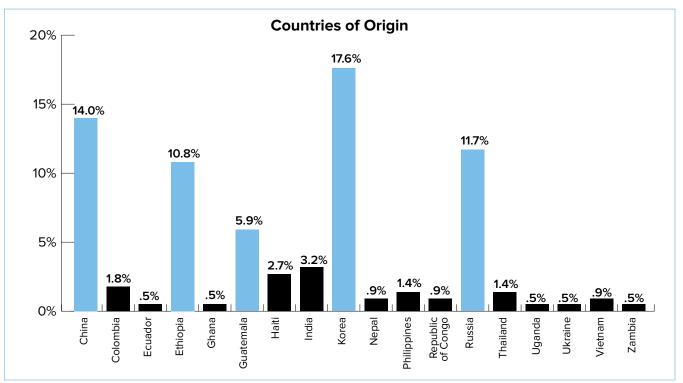
Transition Into the Family Study

he goal of the transition study is to follow children intensively, seeing them every 8 months, for the first two years that they are in their families. These first two years are a period of rapid recovery from pre-adoption deprivation for children who lived in orphanages or other institutions. We are following patterns of change in emotions, relationships, growth, thinking/learning and physiology over these two years and using these changes to predict children's functioning at the cusp of entering kindergarten and then in the kindergarten classroom. Our goal is to determine ways of identifying children who may need extra help early, before they get to school.

Who is in the Study: The Transition Study began enrolling families in August 2008 and has completed recruitment with 211 families. Overall only 11 families who initially started the study have decided not to continue. Of 211 participants, 161 (109 PI and 52 EA) are children who were adopted internationally and 50 were born into their Minnesota families. Our internationally adopted group of children represents several countries (see Figure 1.) How Far Along Are We: All of the families have completed sessions 1 and 2, 81% have completed session 3, 50% have finished session 4, and 25% have completed session 5. Only a few children have started kindergarten.

What Have We Learned So Far? Recall that the development of children adopted between 18 and 36 months from institutions is the focus of much of this study. We are comparing their development to children's adopted earlier with little to no institutional care prior to adoption and to children's development who were born and raised in their families in Minnesota. Because all of the children have completed sessions 1 and 2, we can begin to draw some conclusions about how the children are doing during their first year in the family.

Indiscriminate Friendliness: When children arrive in their families, many are extremely friendly with strangers. They approach them readily and show little to none of the wariness that is more common for toddlers who have been raised in family settings. However, most of the children pretty quickly decrease in their



indiscriminately friendly behavior. In fact, if we only look at approaching (but not touching) and interacting with strangers, by 8-9 months after adoption, we cannot tell the children adopted from institutions apart from the early adopted or non-adopted children. In all three groups we have some very sociable children, some very shy children, and many children in between. What is different about the post-institutionalized children is that more of them will actually initiate physical contact with the stranger. This actually doesn't change much from session 1 to 2.

Stress and Indiscriminate

Friendliness: We have been examining how much stress hormone children produce by taking samples of their saliva. We expect that the children who had higher cortisol (a stress-sensitive hormone) levels during session 1 (see Figure 2).

Stress and Stable Family

Routines: Of course, session 1 was already 1–3 months after adoption and children's stress systems are likely already beginning to adapt to the family. One aspect of family life that we have been tracking is family routines. Parents who adopt are sometimes told that it is critically important to maintain a very stable family routine so that children who lived in structured institutional settings will be able to adapt more easily. Families vary, however, in whether they prefer a more structured or more spontaneous life style. We found that at session 1, cortisol levels were lower the more structure the

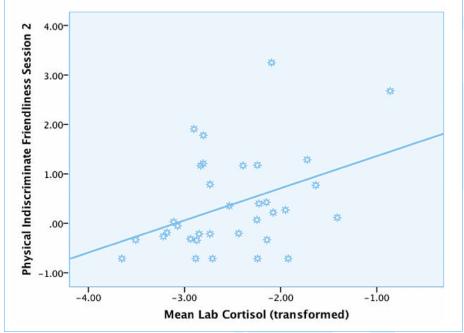


Figure 2

children whose stress systems were altered more by their pre-adoption experiences will be the ones who struggle more during the transition into the family. We think we are seeing a hint of this. We found that children who show more physical contact with strangers at session 2 were the parents said they made in their family life and the more they valued structure and routine. The association was only there at session 1. We think it means that family routines help the children adjust to all the new experiences, including the new experience of coming to the lab for testing.



Fearful Temperament: Children adopted from institutions are more likely to be anxious and fearful. We and others have mostly studied this in children who are 8 years old and older. In fact, by the time postinstitutionalized children are in the teen years, they are at a somewhat greater risk of depression than are other children. What we don't know is whether this means that the whole fear and negative emotion system has been shifted by their early experiences. If so, we would expect that soon after adoption, post-institutionalized children would score higher on standard tests of fearful temperament.

At both their first and second visit, children saw some strange electric cars and odd creatures that moved erratically and made noise. The noise, movement and oddness were designed to elicit a wariness reaction in more anxious, fearful children and

Transition, to page 6

Transition, from page 5

an exuberant approach in temperamentally bold children. They did. We saw a range of reactions. Importantly, this was true in all groups. The children adopted from institutions were no more likely than children in the other groups to be frightened by these toys.

However, there was one difference that we think is important. When children are frightened they can try to actively cope by doing something to make the situation better. For example, some children kicked the toys, others tried to bring them to their parent, one child handed her mother her purse, pointed at the door and said "go". In contrast, passive coping means freezing, shutting down, or otherwise doing nothing (perhaps as a way of not being noticed). More of the post-institutionalized children engaged in passive coping than did the other children. Passive coping tends to decrease with age as children develop more skills, and we saw a decrease in passive coping from session 1 to session 2. But, the difference between postinstitutionalized children and other children was still there. We do not yet know what the session 3 data will show when the children have been in the home for 16 months. Actively coping with threat comes from expecting that what you do makes a difference. In many institutions, children are taken care of on a schedule; their own actions don't matter very much in whether or when they get fed, changed, or played with. Now that they are in families, they are learning that what they do does matter; but under stress it is possible that the old learning will dominate for at least some children.

Believing that we know how to effectively control important outcomes is critical for reducing fear and anxiety. It is possible that the anxiety that post-institutionalized children report grows out of their early helplessness more so than out of effects of institutionalized neglect on the stress and fear systems. We will be trying to sort this out as we follow these children into kindergarten.

There is more to come: We have only had all of session 1 and 2 completed for a short time and we still are busy coding the videotapes. Thus there will be much more to come. In the meantime, new sessions are coming on line.....

Session 5 is Critical: We just started seeing children in session 5 when they are 5 to 5.5 years old. This is a critical session because we plan to use what we learn in the first 4 sessions to predict how the children do on the brain and behavior tasks of this session. In session 5, children wear a sensor net while we examine the brain waves they generate when solving problems. We also examine attention, memory, and other cognitive skills that are important for their success in kindergarten. And for the first time, we actually ask the children to tell us about themselves. Five year olds cannot fill out personality questionnaires, but they can do the puppet interview. In this interview, two puppets, Iggy and Ziggy tell the child about themselves. The puppets have opposite takes on things. For example, one says he really like to play with other kids, the other says he likes to play by himself. Then the puppets ask the child to say whether he or she is more like Iggy or Ziggy. We also interview the parents and have them complete questionnaires. Families in the Transition Study



will be contacted for session 5 when your child is between 5 -5.5 years old. If you would like to contact us sooner please call Meg at 612-624-9322 or email at IAP@umn.edu

Kindergarten assessment: It is hard to believe that some of the Transition children are already in kindergarten! The final funded phase of the Transition Study is a school visit when the children reach kindergarten. Seeing the children in kindergarten lets us examine how what we saw as they transitioned into the family predicts how they do when they enter formal schooling. It should give us ideas about how soon after adoption problems can be identified that are not transient but predictive and thus warrant early intervention. And on the positive side, it may show us that some behaviors that might seem to be problematic are just transient issues that don't need to be of any real concern.

In the kindergarten assessment, parents and teachers complete reports online (paper versions are also available). These reports deal with the child's behavior, relationships, and performance at school and home. We also visit the classroom and sit quietly recording the child's behavior,

Join the IAP Registry!

We currently have over 3500 families who joined. Enrolling on the IAP registry provides future opportunities to participate in adoption research.

It is important that we continue to gather families who have recently welcomed home a child so that our registry represents the current international adoption community.

Families do not have to live in Minnesota, nor do they have to have adopted in Minnesota in order join our registry. Any family with a child up to the age of 18 is welcome.

To learn more, please contact us at 612-626-8949 or email IAP@umn. edu or visit us online at www.cehd. umn.edu/icd/IAP/ including how much they are on task, how engaged they are in the activities, how much they play with others during play time and how other children treat them. We also obtain measures of saliva for stress hormone analysis.

Nineteen of the Transition children reached kindergarten age in the 2011-2012 school year. We contact all of the families. Four of the families from this school year chose to home school and so cannot be included in this phase of the project. Both the parents and the school have to agree to the study, and we were not sure how the schools would react to the project. But of the 15 eligible families, we got agreement from 13 parents and schools. The 13 children came from 10 different school districts, as close as 3 miles from the University and as far as 247 miles. We have been graciously welcomed into

public, private, and charter school kindergarten classrooms. Four of the classrooms were language immersion programs in Chinese, German, French, and Spanish. Twelve out of the thirteen were full-day kindergarten programs.

For the next 2012-13 school year we anticipate approximately 90 children from the Transition Study will be ready for the Kindergarten Assessment. We will begin contacting these families this fall!

Sincere thanks to the families, teachers, and schools that have already participated in the Kindergarten Assessment and thanks in advance to those of you we will be contacting this fall! If you have any questions, please feel free to contact us at 612-624-4351 or newma039@umn.edu.

IAP Parent Board

Much appreciation to the IAP Parent Board for their continuing contribution and involvement of our research projects:

Stacy Anderson Diane Benjamin Patti Bower Kate Brady David Casey

Jamalee Desmond Amy Kusber Cari Lee Marc Markell



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Stay In Touch

We want to be sure that we maintain current information for all of our registry families so that we can keep you appraised of new studies and results.

If you've recently moved or have a new e-mail account address, please update your registry info by e-mailing IAP@umn.edu, calling 612-626-8949, or completing the enrollment form online at: www.cehd.umn.edu/icd/IAP/

Gene and Resilience Study

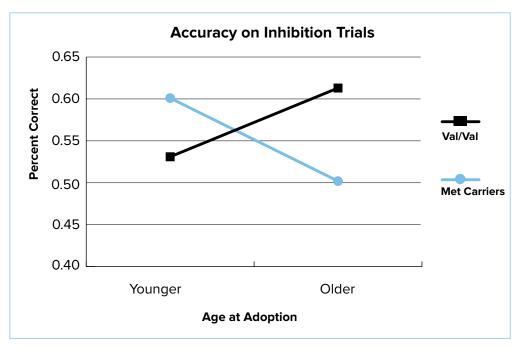
hildren adopted from depriving situations often are quite delayed at adoption but show remarkable capacities for recovery in their adoptive homes. Nonetheless, some recover more than do others. We are examining whether genetic differences contribute to patterns of resilience in internationally adopted children. This is a study that we are doing in collaboration with Professor Kathleen Thomas' lab here in Minnesota and Professor BJ Casey's lab group at the Cornell-Weil Medical Center in New York.

The gene we are studying regulates the availability of something called, "brain derived neurotrophic factor" or BDNF. BDNF is important in brain growth and repair. There is a common mutation in the BDNF gene that results in the gene coding for a methionine when it should code for a valine in just one spot on the "recipe" for the BDNF protein. The result is a less efficient trafficking of BDNF in the brain. This mutation, which is very common, was once thought to produce risk for learning problems and depression. However, as with many common mutations, we are now finding that it improves functioning under some conditions, impairs it



under others, and is probably better described as making the person more sensitive to variations in the quality of care they receive during development.

Last year we told you that youth who carried at least one copy of the MET version of the gene



and were adopted early were less likely to have problems with attention according to their parents, while those with the MET version of the gene who were adopted later (after 12 months) were more likely to have attention problems compared to those with two VAL versions.

This year we can report on some of the findings from the laboratory part of this study. Not all of the children who gave us DNA were seen in the laboratory. When the children were

Figure 3

12 and 13 we randomly selected children based on the sex, countries of origin, and genotype so that we have equal numbers from different parts of the world, of each sex, and of each genotype. The children then came into the lab twice. Once for a series of cognitive assessments and then once when they were tested in an MRI machine so that we could examine brain structure and function. So far we have seen 182 youth in this phase of the study.

One of the things we are doing in this phase is to confirm the findings that we had based only on parent report. So, we are studying attention control in relation to the BDNF genotype. The particular attention task we are using examines attention under low and high emotional arousal conditions. Many of us are okay at controlling our attention when we are calm, but when we get emotionally aroused, our attention control really suffers.

To test this in the laboratory, we had the youth doing a "go-no go" task in which they push a button to every letter (go) except the letter X (no go). To add emotion, a student of Professor Thomas' devised the following change to the standard go-no go task. She put the letters on pictures and used a set of pictures previously graded on whether they were neutral (picture of a fork), positive (a kitten) or negative (a crime scene like on a detective show). The youth did more poorly whenever there was an emotion-evoking picture in the background, whether positive or negative. But how much worse they did was a function of both their genes and when they were adopted (see Figure 3).

Youth adopted before 12 months made fewer errors on the no go trials (when they should not push the button) if they had at least one of the MET versions of the gene, while youth with this genotype did worse if they were adopted over 12 months of age. This is exactly the pattern we saw using parent report and confirms this finding rather dramatically.

We are continuing to collect data in this study, especially brain images, and will be getting more results out to you in the next year.

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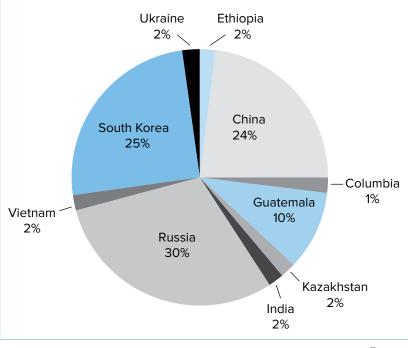
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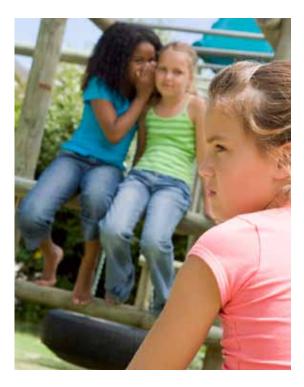
The Emotion Regulation Study

Marsha came home from school looking sad and dejected. All day, her friends had been talking excitedly about the pretty invitations they had received in the mail to attend a classmate's birthday party. Marsha was the only girl in her class who had not been invited.

hroughout childhood, children are exposed to these kinds of emotionally charged situations on a regular basis. In this example, Marsha may feel a mixture of sadness due to being rejected, anger at not knowing why, and fear about being excluded from future parties. When she gets home, she may take out her aggression on siblings, or she may calmly talk about her feelings with her parents. The thoughts, feelings, and behaviors children express in response to difficult situations will influence their ability to handle problems.

The goals of the Emotion Regulation Study are to: (1) better understand how early life experiences may impact how children cope with negative experiences, keep their bodies regulated, and display socially appropriate behavior and to (2) examine how parents' responses to children's emotions may indirectly teach and therefore influence children's emotional competence.





Participants

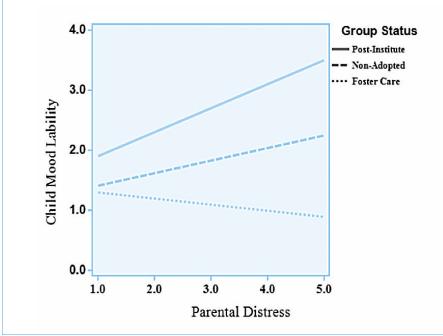
So far, 90 families have participated in this study. Parents (mostly moms) and their 8-to 9-year old children fit into one of three groups: 1) nonadopted and born and raised in their Minnesota family, 2) adopted internationally from foster care

> before 8 months of age, and 3) adopted internationally between 12 months and 5 years of age, having spent the majority of their pre-adoptive life in institutional care. Figure 4 shows the distribution of country of origin for international adoptees.

Methods

- Parents reported on their child's emotion regulation abilities.
- Children reported on the intensity and frequency of negative and positive emotions, and their ability to control emotions when they occur.
- Parents reported how they would react in hypothetical situations in which their child is upset or angry.

Figure 4



Preliminary Results

Most children in this study, regardless of early care history, reported being more likely to experience excitement and happiness and less likely to experience anger and sadness. However, there remained a trend for post-institutionalized children to report experiencing more intense and frequent bouts of anger and sadness when compared to non-adopted children. Girls, regardless of group, reported experiencing greater ability to change how they feel as opposed to boys.

On average, parents endorsed being *more likely* to have emotion- and problem-focused reactions to their children's displays of negative emotion (e.g., parent helps child solve the problem or responds with strategies that try to make the child feel better like giving hugs and distraction). Parents endorsed being *somewhat likely* to accept the child's emotional display (e.g., parent says "It's okay to cry when you feel sad"). They reported being *more unlikely* to use unsupportive reactions such as using punishment to Figure 5

control the child's emotions, becoming distressed themselves and flying off the handle, or discounting the seriousness of the child's problem.

How a parent reacts to their child's negative emotions was unrelated to whether the child was in the postinstitutionalized, foster care, or non-adopted group. Parents who reported being more likely to feel frustrated, sad, or anxious when their children display negative emotions, also reported that their children had more intense mood swings and excessive displays of anger and sadness. This relationship only appeared for the post-institutionalized children and not for the non-adopted or foster care groups (Figure 5). Additionally, children were most likely to have problems regulating negative emotions when they had a combination of more time spent in an institution and a parent who had difficulty staying calm in upsetting situations.

Parents are children's most important teachers; when parents are confronted with emotionally-charged situations,

their reactions often teach children about the different strategies available to cope. This preliminary data suggests that children with histories of institutional care are at a higher risk for experiencing intense and frequent bouts of anger and sadness. In these situations, children may benefit most when parents are aware of their own feelings of agitation and use strategies to help stay calm and focused on the child's needs. We are further investigating how parent-child interactions, the child's physiology (heart rate, cortisol, and perspiration from hand), and early experiences impact emotion regulation.



How can you help?

We are still recruiting families for this study. If you have a child between the ages of 8 and 9 years, please contact us for more information at emotion. umn@gmail.com or 612-624-0234.

Thank you for your support!

—Adriana Herrera, Anna Johnson, Megan Heise, and Megan Gunnar

Additional Research Opportunities

There are many studies going on in the MnIAP. In addition to the ones described above, some of the following may be of interest to you or you many know other families who would like to participate. These studies do not yet have results to share so we describe them here.

Social Support Study

What? The purpose of this study is to examine whether different early life experiences influence how our bodies react to challenging situations, like public speaking, and how social support and emotion regulation strategies impact children's reactions to such challenging situations.

Why? When people have strong emotional reactions, the brain tells the body to increase its production of a hormone called cortisol. For this study, we measure cortisol in saliva samples collected from children and adolescents after they give a speech and perform arithmetic problems in front of a double-sided mirror. Participants are told that there will be an audience of several adults behind the mirror. This study mimics the kinds of public speaking activities that children experience at school. We also use questionnaires to measure how children manage challenging situations and assess experiences that may influence their coping strategies.

Who? So far, nearly 150 children and adolescents have completed our study! We are in the final stretch with this project and are working hard to recruit adolescent boys aged 15-16 years who have spent a major part of their early years in an orphanage or institution before being adopted in the United States.

How can you help? If your child or someone you know fits into this group and would like to participate, please contact us at speechstudy2010@gmail.com and someone from our team will contact you about participation. This is a paid study, and we offer appointments Monday-Sunday between 3:30-6:30 pm. The first visit is a two-hour time commitment and a one-hour second session needs to be scheduled within a week of the first visit.

What's next? We plan to complete the Social Support Study this year, and we look forward to sharing our findings in the next newsletter. Thank you for your support of this research!

INTERNATIONAL ADOPTION PROJECT

University of Minnesota 51 East River Road Minneapolis, MN 55455

RETURN SERVICE REQUESTED

Childhood Language Project

How do early childhood experiences impact adult language development?

Participant Requirements: Korean Adoptees between the ages of 18–30 who have not had extensive Korean language experiences.

Time Commitment: Three separate visits to the University of Minnesota campus (parking provided):

First session = ~2.5 hours
Second Session= ~3.5 hours (with rest breaks)

•Third Session= ~2 hours

Compensation: \$200 for all three sessions. Interested? Want more information? Email koradopt@umn.edu

Online Expressive Writing Project

How does writing impact the way we think and feel?

Participant Requirements: Korean Adopted Adults between the ages of 21–50

Time Commitment: Total of 2 hours 15 min. Completion of an online survey packet (30 minutes) three separate times and completion of a writing exercise (three times over three consecutive days) for 15 minutes each session. This study is completed online.

Prizes: Randomly selected participants will win Amazon gift cards: 20 for \$20, 10 for \$50, and 6 for \$100! Interested? Want more information? Email us at: Berar005@umn.edu.

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