Update from the Data Coordinating Center at Mount Sinai

Thank you so much for your continued participation in TIDES. We have several updates to share with you for 2019 and beyond!

We are continuing our participation in the National Institutes of Health (NIH) national collaboration called **ECHO (Environmental Factors Affecting Child Health Outcomes)**. To recap, ECHO will examine the relationship between environmental exposures during pre-conception and prenatal life in relation to four main outcomes: perinatal outcomes, neurodevelopment, airway health, and obesity. We are collaborating with two centers within the ECHO project: **PATHWAYS**, based at the University of Washington, Seattle, and **NYU-ECHO**, based at NYU School of Medicine in New York City.

Our 6-year visits are nearly complete! There are 696 families eligible for the 6-year visit and as of June 30th, 2019, all had reached 6 years of age. A total of 522 visits were “closed” by that date, including 434 women and children with both office visits and surveys, 88 survey-only participants. Of these, all but 7 moms agreed to participate in ECHO. Thank you for your participation! Once the last 6-year data and samples are collected for this visit (anticipated August 31), we will begin to analyze the data.

With results from TIDES and ECHO, we will be able to look at possible links between exposures to the mom during pregnancy or the child after birth and the children’s behavior, growth, and airway health.

Included in this newsletter are updates from our four study centers, some of our newer TIDES publications, and summaries of some of our exciting findings. I hope you will continue to participate in TIDES, as your participation is integral to our success in carrying out this important work.

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[icahn.mssm.edu/about/departments/environmental-public-health/research/tides]
Update from University of Rochester Medical Center

Happy summer from Andrea, Tye, and Annabel at the Rochester TIDES center! It has been great reconnecting with over 125 TIDES families in Rochester this year as your kids turned 6. We have loved hearing how school is going and talking with the kids about their favorite sports, hobbies, and TV shows. One participant even wrote a story at school about her TIDES visit, telling her teacher all about the brain games and peeing in a cup. If you haven’t scheduled a time to come in for a 6 year visit, it’s not too late! Just call or e-mail us as soon as possible to set up a time.

Later this year, we’ll be starting to send age 7 questionnaires to all of the TIDES families. You can complete these questionnaires online, on paper, or over the phone with our team. These questionnaires are really important because the results will help us to understand how the health of kids in Rochester compares to kids all around the country who are participating in the ECHO study. Thank you for continuing to support TIDES and an extra special thank you to all of the participating kids! You are a really important part of the science and we couldn’t do it without you! Have a terrific summer!

Contact URMC:
Andrea Hart
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585-275-9165
Update from University of Minnesota

Our entire team at the University of Minnesota had a lot of fun seeing everyone for our busy 6-year old visits! We have completed these TIDES age 6 visits and we would not have been able to hit this major milestone without the dedicated participation of our wonderful TIDES families! We know the visit was busy, but it was so fun to watch the kids warm up to the TIDES staff (usually while doing the spit test!). Your participation has allowed us to gather very important data that will contribute to improving children’s health.

In order to help TIDES results be more generalizable to different groups of people, we have been conducting an ancillary TIDES study and enrolling Asian families with a 6-year old child. You may remember an email sent by Stacey Moe, our Study Coordinator, in mid-June about this effort. Our goal is to compare these exposures in Asian mothers and children to those measured in the currently enrolled TIDES cohort at the same ages and using the same methodology, ultimately allowing us to expand the generalizability of exposure measures and study outcomes obtained in TIDES to underrepresented communities. If you know of anyone who may qualify for this study, please ask them to contact Alexandra Gowdy-Jaehnig at gowdy006@umn.edu or 612-393-4700.

Our TIDES staff are working hard to get our future visits up and running. For those of you who have agreed to be contacted for participation in future visits, we would like to say, “Thank you!” . We will be contacting you when your child is 7 years old and asking you to complete questionnaires online. Around the time when your child turns 8 years old, we will contact you to discuss a future clinic visit, which will once again be held in the building where the age 4 and age 6 visits took place.

Thank you again for your wonderful partnership as we address this very important area of research! Have a wonderful rest of the summer and please expect to hear from us soon!

Note: Participation for use of photo was provided by the child’s mother.

Contact UMN:
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Update from UC San Francisco

It has been wonderful to reconnect with the UCSF site TIDES families! We are so thankful that so many of you responded to our outreach for the Age 4 visit—80% of our original participants completed an Age 4 visit! We’re nearly done with age 6 visits, which have been a lot of fun now that kids have so much to say and are growing so much. Soon we’ll be sending age 7 questionnaires to all of the TIDES families whose children have turned 7 by now. You can complete these questionnaires online, on paper, or over the phone with our team—whatever is easier for you. We know we ask families a lot of questions—your answers are really important because we are using information from your pregnancy through now to advance our understanding of child development and the factors that promote or impair optimal health. The National Institutes of Health (NIH) is continuing to fund TIDES follow up visits because the study data is so valuable for this purpose! We will also be starting age 8 visits soon, so please keep an eye out for our emails and calls. We look forward to connecting with all of you! Thank you for continuing to support TIDES and an extra special thank you to all of the participating kids--you are a really important part of the science and we couldn’t do it without you! Have a terrific summer!

Contact UCSF:
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(628) 234-4194
http://bushlab.ucsf.edu/tides-infant-development-and-environment-study
Update from Seattle Children’s / University of Washington

We will be wrapping up our TIDES II Age 6 visits in Seattle this summer. Thank you to all our TIDES families who responded to our outreach and completed an office visit and questionnaires. Because of you, we were able to reconnect with over 85% of our families we saw at Age 4 as well as many families who we have not seen since the pregnancy phase of the study! Sadly, our Study Coordinator, Katy Garrison, recently left to pursue an exciting opportunity in the clinical research field. Jennifer Powell has taken over Katy’s role as the TIDES Study Coordinator and works alongside Research Associate Sarah Wang. The Seattle team is also supported by Center Director Sheela Sathyanarayana, Psychologist Brent Collect, Research Scientist Drew Day, Project Manager Trina Colburn, and Research Associates Nora Byington and Madison Grady.

We have enjoyed working with all our TIDES kids at their visits. They had fun navigating their treasure map as they finished each task. Many kids were often curious about the science behind why are collecting things such as their saliva and asked wonderful questions. We are excited to announce that our Age 8 visits will begin this Fall and will take place at Seattle Children’s Hospital main campus at the Pediatric Clinical Research Center (PCRC)! We greatly appreciate the time moms take to participate in this ground-breaking study and we look forward to seeing you again at the next study visit!

Contact Seattle Children’s:
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Highlights from some of our recent TIDES publications

**Association between prenatal psychological stress and oxidative stress during pregnancy**

*We examined prenatal psychological stress reported by the mother during pregnancy in relation to a urinary biomarker of oxidative stress and found that this marker is elevated in pregnant women who have higher psychological stress in pregnancy and are at a sociodemographic disadvantage.*

**Anogenital distance in newborn daughters of women with polycystic ovary syndrome indicates fetal testosterone exposure.**
Barrett ES, Hoeger KM, Sathyanarayana S, Abbott DH, Redmon JB, Nguyen RHN, Swan SH.

*This paper examined the length of the perineum (the anogenital distance, or AGD) in daughters of women in TIDES who had polycystic ovarian syndrome (PCOS) and found that these daughters have longer AGD, suggesting that during PCOS pregnancies, daughters may experience elevated testosterone exposure. This may help in identifying the underlying causes of PCOS which may help doctors intervene early to minimize risk.*

**Association of Prenatal Phthalate Exposure with Language Development in Early Childhood**

*We looked at the responses to the language development questionnaire that many TIDES mothers completed (as well as many mothers in a very similar Swedish study (SELMA)) in relation to the concentration of phthalates in the urine sample moms provided in the first trimester. Higher concentrations of some phthalates (particularly two commonly found in household products -- dibutyl phthalate and butyl benzyl phthalate) were associated with an understanding of fewer words when the child was 3-4 years of age.*

**Phthalates and Phthalate Alternatives Have Diverse Associations with Oxidative Stress and Inflammation in Pregnant Women**
van T Erve TJ, Rosen EM, Barrett ES, Nguyen RHN, Sathyanarayana S, Milne GL, Calafat AM, Swan SH, Ferguson KK.

*Oxidative stress occurs when there is an imbalance between unstable molecules (known as free radicals) and antioxidants (such as vitamin E and beta-carotene) in your body. We examined the concentration of phthalates in the mother’s prenatal urine sample in late pregnancy in relation to measures of oxidative stress. We found that most of the phthalate metabolites we measured were associated with a significant increase in one important marker of oxidative stress, which may be a signal for increased inflammation.*
Predictors of Steroid Hormone Concentrations in Early Pregnancy: Results from a Multi-Center Cohort

We studied which demographic and life style factors were related to measured hormones (testosterone and estrogens) in blood samples TIDES mothers gave in their first trimester. We found that younger moms and moms with no prior pregnancies had higher levels of most hormones. Moms with higher body mass index (BMI) had higher testosterone and lower estrogens, while Black moms had higher testosterone. Surprisingly, these hormones did not differ significantly between moms carrying boys and girls.

Maternal urinary phthalate metabolites in relation to gestational diabetes and glucose intolerance during pregnancy

We looked at markers of diabetes of pregnancy (including glucose tolerance) in relation to the average concentration of phthalate metabolites across pregnancy. The strongest relationship was between the phthalate found most often in personal care products (diethyl phthalate, or DEP).

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If your contact information has changed, please tell your study coordinator. Thank you!