



Our hearts go out to all those affected by the COVID-19 pandemic. We understand that this difficult time may bring unexpected challenges to you and your loved ones. We encourage you to stay informed about

COVID-19 by visiting the Centers for Disease Control and Prevention website (<https://www.cdc.gov/coronavirus/2019-ncov/>). You can read our letter to ABCD families here: <https://abcdstudy.org/families/covid-19-update/>

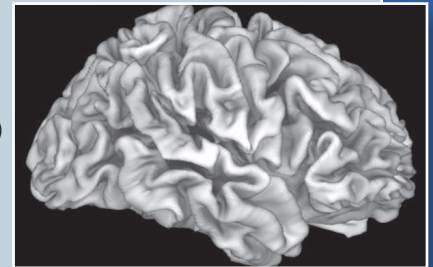
Our ABCD Team hopes that you and your families stay safe and healthy.

## ABCD Science

### ABCD Study investigators publish research about lead-exposure risk

Dr. Andrew Marshall and Dr. Elizabeth Sowell, both at Children's Hospital Los Angeles, along

with several other researchers, published a scientific article about the relationship between lead exposure risk (living in neighborhoods with older homes that may contain lead hazards) and brain anatomy and cognition. The data summarized in the article were collected from ABCD Study participants across all 21 sites. The researchers found that youth living in neighborhoods with a high risk of lead exposure had lower cognitive test scores compared to youth living in low-risk areas. Brain anatomy differences also distinguished the two groups. These early findings suggest that lead exposure risk may be associated with negative outcomes. The researchers caution that since the ABCD Study has not assessed blood lead levels in participants, these findings are still preliminary. Click here (<https://www.nature.com/articles/s41591-019-0713-y>) for a detailed summary of the research. (Photo: [www.eurekaalert.org](http://www.eurekaalert.org))



## Students' Space

### ABCD T-Shirt Design Contest

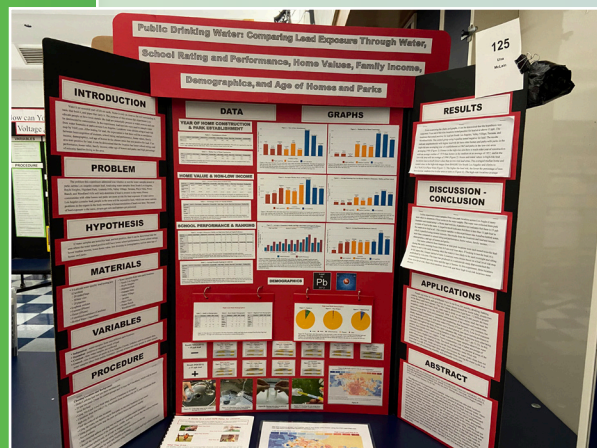
Thank you to everyone who submitted original artwork to the first ABCD t-shirt design contest! We received nearly 200 submissions from students across all 21 sites, and over one thousand people voted for their favorites. And...drum roll...here are the top two winning designs that will be featured on the next ABCD t-shirts! Congratulations to this year's winners, Ava (design on left) and Silas (on right), and to all our participants who submitted designs. We are so impressed with your talent, creativity and commitment to ABCD!



### ABCD Staff Team Up with ABCD Participant at Science Fair

After brainstorming for her school's science fair, Una, an ABCD Study participant, decided to focus her project on lead exposure in public drinking water. During one of her ABCD visits, she discussed her project with the research staff, including Dr. Andrew Marshall and Trinh Luu, and learned that her topic aligned with research underway (see ABCD Science in this newsletter), and a collaboration was born! At the science fair in January, Una presented her project, *Public Drinking Water: Comparing Lead Exposure Through Water, School Rating and Performance, Home Values, Family Income, Demographics, and Age of Homes and Parks*. She won the **Judges' Choice Award for Discoveries in Public Health Efforts and Thoroughness** and advanced to the Los Angeles County Science & Engineering Fair where she

received **First Place** in the Ecology category. Way to go, Una!



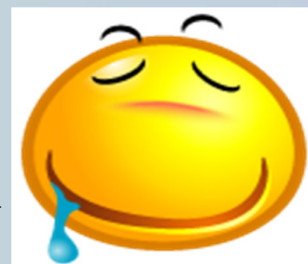


In the last newsletter, we answered a question about what we do with all the saliva we collect from participants. It turns out this is a really popular topic, so we're going to stick with that theme here!

### **"Why do you measure hormones from my spit?"**

We measure hormones that are important for puberty. Puberty is a process that everyone experiences during adolescence. During puberty, you experience physical changes that make you appear more 'adult-like'. Puberty is experienced differently by individuals born with male genetics (XY chromosomes) versus those born with female genetics (XX chromosomes). In ABCD, we measure three pubertal hormones (Dehydroepiandrosterone (DHEA), testosterone, estradiol in females only). These hormone profiles differ between males and females, with males (XY) having more testosterone and females (XX) having more estradiol, on average. Before puberty, you have such low levels of these hormones that it is very hard to measure them at all. In fact, many participants' hormone levels were almost zero the first year they participated in the study (ages 9-10 years). As you get older, your brain begins a cascade of events that causes your body to start producing more and more hormones. Saliva samplesThis increase in hormone levels starts to change your body, such as increasing hair growth and other adult-like changes in your body. At the same time, these hormones go back to your brain and can change the way you think and behave as you become a teenager. In ABCD, your hormone levels in your saliva sample are very important for helping scientists study how your hormones increase each year as you experience puberty, and see how this maps onto changes in your brain as you get older.

So far, we've seen that the age when these hormones start to increase is different across ABCD participants, with some of you showing higher hormone levels already at your first visit. Also, hormones start rising at a younger age in those with female genetics than those with male genetics. We also see that some of you have bodies that need a lot of hormone to start changes in your body, while others seem to need very little hormone for these changes to start. Even though you've given a saliva sample each year, we have only looked at the levels from your first visit. Stay tuned next year for new findings of how your hormones change as you get older!



## **Families' Place**

### **Supporting Families During the COVID-19 Pandemic**

With most schools closed, many parents/guardians are working from home, in addition to parenting and homeschooling their children around the clock. That's a lot to take on. The Child Mind Institute, a national nonprofit organization dedicated to advancing the science of the developing brain, provides COVID-19 resources to support families during the pandemic, including Facebook Live video chats with clinicians, and remote learning resources for students, K – 12. Click here (<https://childmind.org/coping-during-covid-19-resources-for-parents/#anxiety>) for more information and to get short Daily Tips for Parenting During COVID-19 delivered to your in-box.

Is there a budding scientist in your house? The latest issue of Science News for Students (<https://www.sciencenewsforstudents.org/article/here-are-some-free-resources-for-kids-and-parents-now-learning-at-home>) features at-home learning tips and resources, including articles about science topics ranging from dinosaur extinction, to satellites and black holes. Plus, Science News has compiled a collection of experiments (<https://www.sciencenewsforstudents.org/collections/experiments>) you can try at home that introduce students to the scientific method, from generating hypotheses to conducting experiments and analyzing and interpreting results. Click here to try walking on water! (<https://www.sciencenewsforstudents.org/article/try-this-walking-on-water-with-science>). (Photo: *Water striders float easily on top of the water. How do they keep from sinking? An experiment can help you find out. Science News For Kids*)



**For More Information, Please Visit:**

**ABCDStudy.org**

Copyright ©2019 ABCD Study, All rights reserved.

Adolescent Brain Cognitive Development, Teen Brains. Today's Science. Brighter Future. and logo are unregistered service marks of HHS.

\* This project is supported by grants from the National Institutes of Health (NIH), but the content of this newsletter does not necessarily reflect the views of NIH. References or links in this newsletter to an external website or any specific commercial products, processes, services, manufacturers, or companies do not constitute endorsement or recommendation by the NIH or any of the ABCD Study Sites.