



Happy holidays from your ABCD Team!!

We hope everyone had a productive fall and a wonderful winter break!

access that the world has to these data for exploration and discovery of new findings about child and adolescent health. Such a feat would be unimaginable without our partnership with all our ABCD families!

There were several other ABCD study presentations at the meeting that included preliminary findings examining the brain and mental health, the relationship between screen time and cognitive functioning, and links between family history of substance use and brain function. One study examined the brain circuits underlying obsessive-compulsive symptoms in youth and found new linkages between these symptoms and brain connectivity that may inform new treatments. Like other ABCD research at this early stage, the data were collected at a single point in time, so the findings are preliminary. Be on the look out for updates as these findings and their significance are further established.

ABCD Science

The ABCD Study was highlighted last month at the 58th annual meeting of the American College of Neuropsychopharmacology in Florida. This organization promotes best practices for research and medicine through the dissemination of emerging scientific and clinical discoveries to support mental health. The packed room of attendees from around the world heard about the ABCD Study and the unprecedented

Students' Space

Calling All ABCD Students! We need your creativity! It's time for the next round of ABCD Study t-shirts.

This year our ABCD students are the designers! If you'd like to submit a design, just email a picture of your art to adolescentbrain@mail.nih.gov by January 31st (.jpg format preferred). Include your first name and the ABCD site where you participate in the email. Vote for your favorite design between February 14th and February 28th at <https://tinyurl.com/ryq4gtf>. Have fun!



Here is a recent question from a student participant about saliva!
"What do you do with all the spit that you collect from the kids?"

If you've participated in the ABCD Study, then you've been asked if you want to volunteer to provide a **biospecimen** (BY-oh-SPEH-sih-men). A biospecimen is a sample of biological material, such as saliva, urine, hair, baby teeth or breath. Each biospecimen gives unique information about your biology.

The art of collecting spit. One of the ABCD Researchers asked you to 'spit' into a tube. Before doing so, they asked you when you last ate food, if you drank anything with caffeine (like caffeinated tea, soda or coffee) and if you have any injuries in your mouth. Then you rinsed your mouth out with water before 'spitting'. All of these steps are essential for getting a good saliva sample because they give us information about the environment inside your mouth. We need a clean environment in your mouth, including making sure there are no food chunks, no leftover caffeine and no infections. A clean mouth is important for being able to measure molecules (tiny atoms that are held together by chemical bonds) in your saliva. The researcher likely asked you to let your spit collect into your mouth and gently push it into a **saliva collection aid (SCA)**. This collection aid is made out of a special material (polypropylene) that lets molecules easily slide down into the tube. This is important because ABCD researchers want to measure how many molecules are in your saliva. The more saliva we get in the few minutes of collection, the more molecules we can measure! Your body has thousands of molecules, all serving critical functions. ABCD researchers are especially interested in the molecules involved in growth and development (hormones). Your tube had a sticker with a barcode on it. Only the researcher collecting the sample knows that this is your sample, and everyone working with your sample will only see the barcode. This is one way we protect your privacy, and it is called de-identifying your biospecimen. *(continued on the other side)*



Figure. The saliva collection aid (SCA) and the tube used to collect saliva in the ABCD Study. They are both made out of special material that will not bind to the molecules scientists are trying to measure in your saliva. The tube is then stored in a freezer and shipped on ice to a central testing lab in southern California.

(continued from the other side)

Where does your spit go? Once you're done spitting into the tube, the researcher's job is to protect the cold chain and get it to a central lab for testing. The cold chain is a term that refers to all efforts made by researchers to make sure the saliva sample remains below a certain temperature. Staying cold is very important because bacteria living in your saliva sample (and we all have A LOT of bacteria in our mouth!) will continue to grow in warm temperatures. Bacteria interfere with our ability to accurately measure molecules, so the cold chain is very important in science. This means that the researcher immediately places your tube into a cooler for initial freezing, and then stores it inside a large freezer in the local lab. Every couple of months, the researcher places everyone's saliva samples into a cooler with dry ice and ships the frozen saliva samples to a central lab in southern California. The dry ice allows the saliva samples to stay frozen from the time you finish spitting, to the time the lab takes them out of their freezer and measures your molecules!

Families' Place

Developing Persistence in Children and Adolescents

GRIT. It's the ability to persist on tasks towards long-term goals, without being easily distracted or discouraged by obstacles. Scientific research has shown that early persistence can even predict outcomes in adulthood, such as performance in school, sports, the work place, and the military.

What if a child does not naturally demonstrate "grit"? Can parents help? Luckily, persistence is not a fixed trait, but rather one that can be shaped over time. Dr. Alan Kazdin (Professor of Psychology and Child Psychiatry at Yale University and Director of the Yale Parenting Center) describes four concrete techniques parents can use to help build persistence in their kids:

- **Modeling** – Show persistence during effortful tasks in the presence of your child (for example, trying to get an object out of a tight container, and narrating out loud what you are doing to overcome obstacles);
- **Systematically Praising Effort** - Keep a lookout so you can catch your child showing effort and staying with a task, and then enthusiastically praise them for their persistence;
- **Practicing Behaviors and Consequences** - Provide opportunities where your child can practice persistent behavior, and use modeling to begin the process;
- **Mental Contrasting** - Increase the likelihood of completing a goal by moving through these steps with your child: 1) **Wish** - select a goal, 2) **Outcome** - visualize the best outcome, 3) **Obstacle** - identify potential obstacles, and 4) **Plan** - develop a concrete plan to overcome each obstacle.

Watch Dr. Angela Duckworth's TED talk - *Grit: The power of passion and perseverance*:

https://www.ted.com/talks/angela_lee_duckworth_grit_the_power_of_passion_and_perseverance

For More Information, Please Visit:

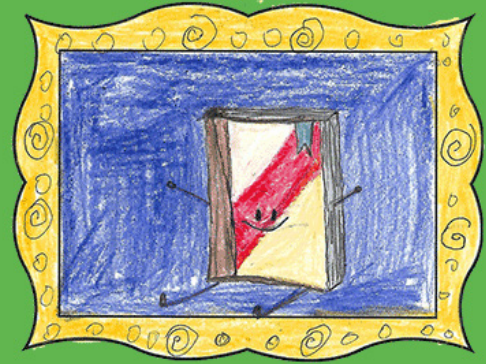
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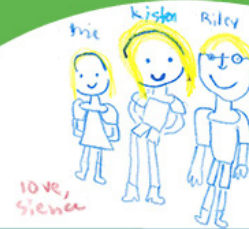
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ABCD PARTICIPANT ART!



- Drawing "Book Person" by Kenzie, Age 11



Drawing:
"The Best Coworkers"
by Siena, Age 10

Want to see your art featured in the ABCD Newsletter?
During your next visit, submit a drawing or quote
to staff at your ABCD Study Site!