



VIVA TURNS



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## ***A Note from Our Co-Principal Investigator***

Dear Project Viva family,

Every year about this time, I remember anew why I love living in New England and experiencing all four seasons. The spring is all the sweeter having made it through the cold dark winter. For reasons that are well known to us all, this year has been harder than most, as we each tried to stay healthy both physically and emotionally while coming to grips with so much loss and discord.

One takeaway from this past year is that science remains a core value of our society. Those of us who have survived can thrive by creating community. For me, Project Viva is one of those sustaining communities, as our amazing staff has come together with resourcefulness, creativity, and hard work to keep the study visits going all year, despite the many challenges. The fact that we are continuing to generate high quality science – including now on COVID's effects on health and behavior – is an added bonus.

As you might have seen in a recent mailing, the youngest Viva “child” has just turned 18! We continue to value your input and engagement moving forward, as we pivot from being a study of mothers and children to becoming a study of women, young adults, and now fathers! As you can imagine, this refocus entails so many changes – for example, instead of asking about baby foods we ask about fast food; instead of asking about morning sickness, we ask about hot flashes. Nevertheless, our scientific focus on how the time around pregnancy is a sensitive period for future health remains the same.

I hope that you and your families have managed to come through such a long year safely and can take extra pleasure in the brighter days that are surely to come.

Warmly,

Emily Oken  
Co-Principal Investigator, Project Viva



## More Than Just The 'Bare Bones': What a DEXA Scan Reveals About Your Bone Density and Body Composition



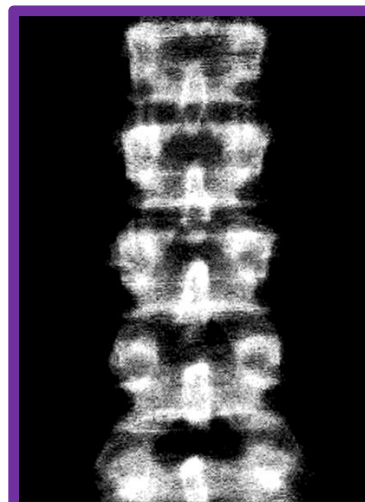
Full Body Scan

The DEXA, or Dual Energy X-Ray Absorptiometry, scan is considered a gold standard method for measuring a person's overall body composition and bone density. Throughout the years, it has been a major part of the child portion of the Project Viva visit. You may remember DEXA because of the picture Viva children received of their skeleton when they were 7 and 12 years old. Among Viva children at about 8 years of age, those with the highest amount of abdominal fat measured by DEXA (apple body shapes) [had lower bone density](#). We continue to be interested in seeing how body composition changes over time in Viva teens and are again performing the DEXA scan at the Mid-Teen visit.

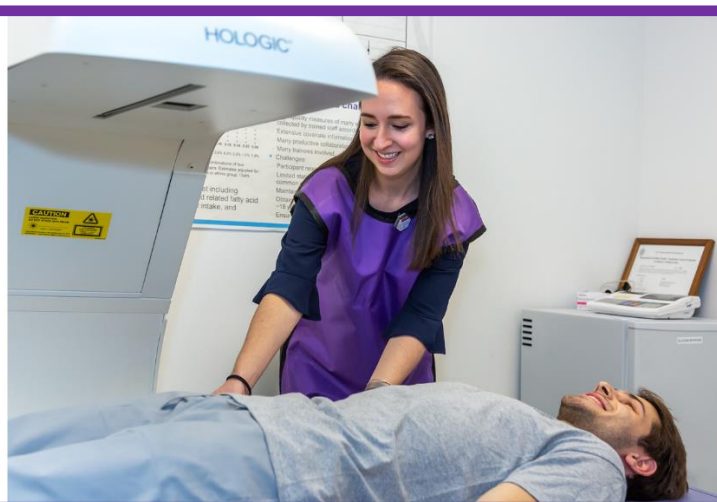
In addition to Viva teens, we are also interested in learning about body composition in Viva Moms. At the Mid-Teen visit, for the first time, Viva Moms are completing not just one but three DEXA scans: a full body scan that measures overall body composition and two additional scans to measure bone density at the hip and lower spine.

Why are we studying moms' bone density now? Bone density increases throughout childhood and peaks around age 30, which is the average age at which Viva moms enrolled in the study during early pregnancy. Across adulthood, bone density gradually declines, especially around the time of menopause, which many Viva moms may be entering now or are currently going through. Low bone density is a risk factor for fractures later in life. The DEXA machine measuring bone density that we use for Viva participants is identical to those used in doctors' offices and hospitals. As moms who already completed the visit are aware, we are thus able to return the bone density results directly to our participants as a helpful data point about their current health.

Because of the information we have collected from you since your enrollment in Project Viva, we have the unique opportunity to study how factors related to pregnancy and fertility affect bone mineral density in mid-life. We plan to analyze these results once all the scans at this in-person visit are completed. We are collaborating with bone experts at the Massachusetts General Hospital to develop helpful insights about bone health throughout the life course. We look forward to sharing the findings with you in the months and years to come.



Lumbar Spine Scan



Positioning for a DEXA Scan



Left Hip Scan

# Let's Talk ECHO!



**ECHO**

Environmental influences  
on Child Health Outcomes

A program supported by the NIH



## What is ECHO Again?

The Environmental influences on Child Health Outcomes (ECHO) Program is a research program supported by the National Institutes of Health (NIH) that includes over 70 research studies like Project Viva that have followed children since before age five. The goal of ECHO is to enhance the health of children for generations to come by seeking to understand the effects of early development on birth outcomes, airways health, obesity, neurodevelopment, and positive health.



## ECHO Facts

ECHO includes 50,000 children, young adults, and family members from 44 states in its research.

ECHO has already published dozens of research studies.

For example, did you know that silicone wristbands can be used to measure exposures to environmental chemicals? Or that children are less likely to be infected with rhinovirus, one of the common viral causes of the common cold, as they get older?



## What is to Come for Viva & ECHO?

Look out for the Age 19 Questionnaire and COVID-19 2021 Survey if you have not yet completed them. All the studies participating in ECHO are asking their participants the same questions, so if you agreed to share your Viva data with ECHO, we will be combining your responses with those from families across the country. This will allow us to study relatively rare conditions and examine how health varies across the country.

In response to COVID-19, ECHO has joined researchers around the world to contribute to understanding how COVID-19 affects pregnant women, children, teenagers, and young adults. This research includes a range of topics, from racial and social inequalities in response to the pandemic to the impact the pandemic has had on obesity-related behaviors. Stay tuned to future Viva Views for more updates on this groundbreaking research!

**For more about ECHO, visit <https://echochildren.org/>**







# THANK YOU



To everyone who participated in our Age 19 survey winter raffle! We were able to award \$100 prizes to 7 young adults who completed our Age 19 survey. This raffle was such a success that we have decided to continue to offer monthly raffles for all of our Viva surveys.

Look out for new opportunities to win money (and maybe some other fun prizes) when you complete our Age 19 and COVID-19 surveys.

## Exposure to Violence, Chronic Stress, Nasal DNA Methylation, and Atopic Asthma in Children

Exposure to violence affects stress responses in the body and may affect risks for diseases such as asthma. Project Viva researchers partnered with investigators in two other studies - the Epigenetic Variation and Childhood Asthma in Puerto Ricans study (EVA-PR) and the Prevention and Incidence of Asthma and Mite Allergy (PIAMA) study in the Netherlands, to examine this question. Investigators in EVA-PR used questionnaires to measure the level of exposure to violence and chronic stress among 487 teens aged 9-20. They found that gun violence exposure was related to differences in methylation of genes in cells taken from inside the nose. Methylation levels tell genes when to turn off and on. In both Viva and PIAMA studies, these same methylation differences were also related to risks for asthma. This is one example of how we have been using the nasal swab samples we collected from Viva teens at the Early Teen visit to better understand how the environment can affect health.



### Thanks for Reading!



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