

# Viva Views

Dear Project Viva Participants,



Since last summer we have been extremely busy preparing for Viva's Age 7 Visits. And now they are underway! Please see the story to the right for what to expect when you bring your child to the visit.

Age 7! It's sometimes hard to believe that we first met some of you almost 8 years ago. And we are still going strong. Because of our track record in producing important research results, we have received several federal grants to keep Project Viva going until at least 2011. It's only thanks to you that we continue to be so successful.

A few months ago we completed our last Age 3 Visit. We have already completed many analyses based on your fantastic participation in that visit, including more than a dozen new scientific articles published since the last Viva Views (see page 3 for examples). Using these results, our Viva investigators continue to advise the federal government and other agencies that set health policies for women and children.

With your help we can continue to learn more and more about the earliest origins of obesity, diabetes, asthma, allergies, and childhood development, with the goal of making all children as healthy as possible. Thanks to each of you for your long-term commitment to Project Viva.

Yours sincerely,

Matthew W. Gillman, MD, SM  
Principal Investigator

## Project Viva Starts the Age 7 Visit

Project Viva is proud to announce the start of the Age 7 Visit. We have developed protocols and data collection forms, programmed our data management system, gotten approval from Harvard Pilgrim Health Care's Human Studies Committee, trained our staff, and practiced the numerous visit components.

Although it takes a lot of work to prepare and conduct a visit, we wouldn't be able to do any of it without your participation. We know it takes a lot on your part too!

The in-person Age 7 Visit is very much like the Age 3 Visit. The major differences between the two visits are that at Age 7:

- We will do less with Viva moms and more with Viva children.
- We are introducing some new wrinkles, for example
  - collecting hair and urine samples
  - doing a DEXA scan for body composition (see page 2 for more information)
  - doing a lung function test called spirometry.

Our research assistants look forward to working with your 7-year-old. We are excited to see the difference 4 years makes, and we have some new ways to keep your child engaged and having fun during the visit!

Soon after your child turns 6½ we will send you a "Welcome Letter." Then we will contact you by phone to schedule your child's Age 7 Visit, and mail you an information packet. The packet will include instructions on how to prepare for the visit, what to bring, and what to expect. Here's a sneak preview of what to expect—

Plan on the visit taking 3 hours or just a bit more. Here's what we would like to do with your child:

- measure your child's height, weight, waist and arm sizes, skinfold measurements on

the arm and back, and blood pressure

- play developmental games
- measure your child's heart rate during a stepping activity
- do a breathing test using a machine called a spirometer
- draw about 4 teaspoons of blood
- take a small hair sample from the back of your child's head
- get a urine sample (have your child pee in a cup)
- do a scan—called DEXA (see page 2)—that measures how much fat, muscle, and bone your child has

If your child is not yet 7 years old—or you haven't completed the most recent yearly mail survey—please fill out and return the survey. These surveys help us get all the needed information in the "in-between" years as your child matures.

### Current Project Viva Visits

Child's Age	Visit Type
5	mail survey
6	mail survey
7	in-person*
8	mail survey

\* If you live outside of New England and visit Boston we'd love for you to schedule a Project Viva visit when you're in town. If you cannot visit Boston we will ask you to participate by mail.

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# Dual Energy X-Ray Absorptiometry (DEXA)

## What is DEXA?

DEXA is a fun test for kids, because they get to lie on a table that moves around like a spaceship in slow motion. In fact, we've decorated our DEXA room with a space theme.



DEXA machine

DEXA itself is a technology which uses very low dose x-ray to distinguish between bone and soft tissues, giving an accurate measurement of the body's composition. The amount of radiation is about the same you would get just by flying from Boston to California (1/1000 of the amount of radiation from a CT scan or less than 1/10 from a chest x-ray).



DEXA print out

## Why we are doing DEXA scans

A DEXA scan provides a tremendous amount of information about how much muscle, bone, and fat there is in different parts of the body. It is the gold standard to measure body composition, so we are fortunate to be able to use it for Project Viva.

## What your child can expect

The scan is a painless and non-invasive test. Your child will lie still on a padded open table as the table moves slowly and the arm moves over him/her. The scan itself takes only about 3 minutes.

## What your child will wear

We will ask your child to change into a cloth pediatric gown, like what children wear at the doctor's office. Having your child wear a pediatric gown allows us to get the most accurate reading possible.

## What your child will get

We will give your child a printout of his/her skeleton. Most kids really like getting their DEXA scans, and we hope your child does too!

## Spotlight: Jane and Alison, Viva Mother and Daughter



Jane and Alison  
The Skating Club of  
Boston's  
2007 Ice Chips

### Jane:

**You and Alison just completed the Age 7 Visit, what advice do you have about the visit for Viva moms?**

It was fun. Your child will have fun.

### Alison:

**What did you like about the Age 7 Visit?  
What would you tell Viva kids?**

The food. Good food, especially the peaches. It is fun getting the body scan but you have to wait until the very end. The nose plug [for spirometry, a lung function test] is weird looking and you have to blow out for a long time. The machine [spirometer] might say "don't hesitate." When they take your blood pressure it's not really a game. They say it's a game but it isn't.

**What do you like about being a Viva participant?**

I like the newsletter and the body scan. The body scan is cool.

**What's your favorite subject in school and why?**  
Math. Just because I like math.

**What do you and your family do for fun?**

I like to figure skate. I have been in The Skating Club of Boston's Ice Chips show with my mom for the past 5 years. This year's show was March 31-April 1, 2007 and Sasha Cohen was in it too. I skated with Sasha Cohen. I like to swim and I am a great swimmer. My family goes on bike rides and sometimes I bike on the trailer behind my dad around the Charles River. I play soccer and my dad is the coach.

*"It is fun getting the body scan but you have to wait until the very end."*

*Project Viva children range in age from approximately 4 to 7½ years old. The first Viva child was born October 30, 1999, and the last was born March 22, 2003.*

If you or your Viva child would like to be featured in the **Spotlight** section of Viva Views, please contact us. We would love to share your Viva story.  
Project\_Viva@hphc.org or 1-800-598-4247 x86067



# Recent Findings from Project Viva

## Maternal Intake of Vitamin D and risk of childhood wheezing

Vitamin D deficiency and asthma are common in New England. Although vitamin D has important effects on the immune system, which is related to infections and allergies, the relation of vitamin D with asthma is unknown. To investigate this topic, we studied 1,194 mother-child pairs in Project Viva. We measured maternal intake of vitamin D during pregnancy by questionnaire. By age 3, 186 children (16%) had recurrent wheeze. Compared with mothers with low levels of vitamin D intake, those with higher intakes (e.g., approximately 800 IU/day) were less likely to have a young child with recurrent wheeze. We observed the same results whether the vitamin D was from dietary sources (e.g., fortified milk, fish) or vitamin supplements. Our findings suggest – at least among women in New England – that higher maternal intake of vitamin D during pregnancy may decrease risk for recurrent wheeze in early childhood. We do not know yet if this will translate into lower risk of childhood asthma. If yes, increased maternal intake of vitamin D during pregnancy may become a new, safe, and inexpensive way to prevent childhood asthma. Doing a breathing test with Viva kids at age 7 will help us to answer this important question.

*Camargo CA Jr, et al. Maternal intake of vitamin D during pregnancy and risk of recurrent wheeze in children at age 3 years. Am J Clin Nutr 2007;85(3):788-95.*

## Women who get more physical activity before and during pregnancy are less likely to develop diabetes during pregnancy

Diabetes during pregnancy, which has been on the rise in recent years, can cause problems during pregnancy such as birth trauma and stillbirth, and also increases both the mother's and child's later risk for developing diabetes. We studied whether physical activity before or during pregnancy could reduce a mother's risk for developing diabetes during pregnancy ("gestational diabetes"). Obstetricians at Harvard Vanguard screened mothers for gestational diabetes at about the 7th month of pregnancy by testing their blood sugar after they had a drink high in sugar. Among the 1805 Project Viva mothers studied, about 5% developed gestational diabetes. Mothers who participated in vigorous physical activities before pregnancy, such as jogging, swimming, cycling, or aerobic class, had a lower risk of developing gestational diabetes compared with mothers who did not do any vigorous activities. Mothers

who reported doing at least light/moderate physical activities during early pregnancy, such as yoga, bowling, and stretching classes, also had a lower risk of developing gestational diabetes, whereas mothers who were sedentary during pregnancy (less than 30 minutes a day of any physical activity) had an increased risk. These results support advice for all women to participate in regular vigorous physical activity, and to continue at least light to moderate activity after becoming pregnant.

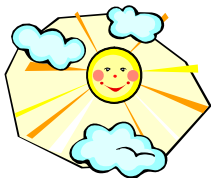
*Oken E, et al. Associations of physical activity and inactivity before and during pregnancy with glucose tolerance. Obstetrics and Gynecology 2006;108:1200-07.*

## The more weight a woman gains during pregnancy, the heavier her 3-year-old is to likely to be

Currently used guidelines for weight gain during pregnancy were published in 1990, before the modern obesity epidemic had taken hold. These guidelines advise that women with a normal weight before pregnancy should gain 25-35 pounds throughout pregnancy, and women who are overweight before pregnancy should gain 15-25 pounds. We have known for some time that mothers who gain more weight while they are pregnant have babies with higher birth weights. However, it is not clear if higher weight gain during pregnancy has any effects on children after birth. In this study, we followed 1044 Project Viva mothers and their children for 3 years after birth. Approximately one-third of mothers were overweight before pregnancy, and about 10% of children were overweight at age 3 years. Half of all women gained more weight during pregnancy than is recommended, 35% gained weight in the recommended range, and 14% gained less weight than is recommended. Compared to children of mothers who had gained less than the currently recommended amount of weight, children of mothers who had gained either within the recommended range, or above, had about 4 times the risk of being overweight at age 3 years. Women with gain below the recommended range did not have any increase in birth complications such as having a baby born at low birth weight. We suggest that current recommendations for pregnancy weight gain should be reconsidered to help prevent childhood obesity.

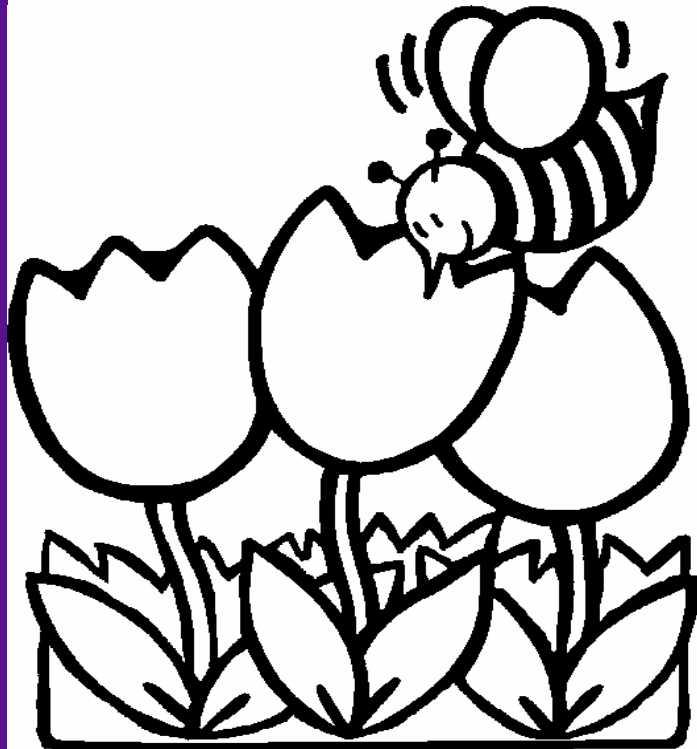
*Oken E, et al. Gestational weight gain and child adiposity at age 3 years. Am J Obstet Gynecol 2007;196(4):322.e1-8.*





# Viva Kids

Spring/Summer 2007






## Word Search

S G U B B K Y  
 T R L O R E F  
 U A E N E C F  
 O I K W E I U  
 K N I E O N P  
 O B B W O L O  
 O C O O A A F  
 C E R Y B L C

## Rain Painting

The rain doesn't have to be ALL bad- Enjoy it!  
 Try this fun activity to express yourself with the weather!

### Materials:

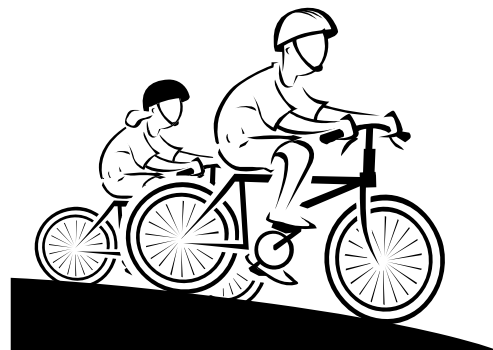
-  Paper Plate
-  Food coloring
-  White crayon

Time needed: Under 1 hour

1. Sprinkle a few drops of food coloring on a paper plate.
2. Get into rain gear and walk outdoors with the plate for about a minute and watch as artistic designs appear.
3. For a batik effect, try drawing a white crayon design on a new plate. Then add some food coloring and head out.

Get more fun activities from [familyfun.com](http://familyfun.com)


- Bike
- Bugs
- Cookouts
- Flowers
- Rain
- Play





## Fun Facts About Weather!


Now that it's spring, we're bound to see some crazy weather, so know your fun weather facts!

Did you know.....?

 Crickets can actually measure temperature! Count the number of times a cricket chirps in 15 seconds and add 37, which should be close to the temperature! The temperature actually affects how active they are.

 Most people can smell rain coming, since the moisture in the air makes our noses more sensitive.





 During a thunderstorm, count the number of seconds between a flash of lightning and a rumble of thunder, then divide by 2 and you will know how many miles from the storm you actually are!

 Storm clouds are dark because their large number of ice crystals make it hard for light to come through. When the clouds become too heavy, the ice crystals fall to the earth as snow or rain.



## Ladybugs on a Stick

Ingredients:

-  Red Grapes
-  Strawberries
-  Mini Chocolate Chips
-  Honeydew Melon

1. Push half of a red grape onto a trimmed wooden skewer for the head.
2. Next, push on a hulled strawberry body and score the back to create wings.
3. For the spots, use a toothpick to gently push the mini chocolate chips tip down into the strawberry.
4. Arrange the skewers on a honeydew melon half.

*Get more great healthy recipes and fun facts from [Familyfun.com](http://Familyfun.com)*

# About Project Viva

Established in 1998, Project Viva—“A Study of Health for the Next Generation”—is a groundbreaking longitudinal research study of women and children based in eastern Massachusetts. The aims of the research are to examine how factors during pregnancy and after birth may affect the long-term health of a mother and her child. Project Viva follows more than 2,100 mother-child pairs from pregnancy until the child is at least 7 years old. Matthew W. Gillman, MD, SM, is Project Viva’s Principal Investigator. He and his colleagues conduct the study out of the Department of Ambulatory Care and Prevention, jointly sponsored by Harvard Medical School and Harvard Pilgrim Health Care. Project Viva is funded primarily by the National Institutes of Health (NIH), with additional funding from the March of Dimes Foundation, the U.S. Centers for Disease Control and Prevention (CDC), and other agencies. The ultimate goal of Project Viva is to improve the long-term health of children by ensuring the well-being of their mothers. For more information about Project Viva visit [www.dacp.org/viva/index.html](http://www.dacp.org/viva/index.html).



## *Thank You!*

Thanks to **The Clay Center Observatory, BJ's Wholesale Club, Costco Wholesale, Katherine Hohman, & Harvard Vanguard Medical Associates** for their generous contributions.



Moving? Please call us with your new address and phone number at 1-800-598-4247 ext. 86067 or email us at [Project\\_Viva@hphc.org](mailto:Project_Viva@hphc.org)



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