



River Valley Current

October 11, 2016 No. 455

"The principal goal of education in the schools should be creating men and women who are capable of doing new things, not simply repeating what other generations have done; men and women who are creative, inventive and discoverers, who can be critical and verify, and not accept, everything they are offered." --Jean Piaget

School Calendar

This Week

Thursday, October 13

EC Enrichment Evening

– Celebrating Diversity in Early Childhood 6:30 pm

PC Meeting at the Ship Inn 6:30 pm

Looking Ahead

Wednesday, October 19

2nd Grade Class Play

9:00 am

Thursday, October 20

2nd Grade Class Play

9:00 am

Board Meeting

6:30 pm

Friday, October 21

2nd Grade Field Trip to Solebury Orchards

Saturday, October 22

6th Grade Workday

BoT Halloween Costume Ball

7:00 pm

Thursday, October 27

Fall Assembly

6:30 pm

Friday, October 28

No School – Faculty In-Service

Monday, October 31

In-School Ancestors' Day/Harvest Celebration

How to Contact Us

info@rivervalleyschool.org

lc@rivervalleyschool.org

bot@rivervalleyschool.org

pc@rivervalleyschool.org



More photos from the Michaelmas Celebration at the end of this week's Current

Next Parent Council Meeting:
Thursday October 13th @ 6:30pm at
The Ship Inn, Milford, NJ

Festive Attire Clothing Swap - October 14-18

Please bring your child's outgrown or unwanted festive attire/concert attire to the All Purpose Room Friday, October 14th through Tuesday, October 18th. While you are there, please check out what others have brought and take something (or some things) home. While finding a new family for items within our community would be lovely, all leftovers will be collected by Big Brothers Big Sisters.

Our Fall Assembly is coming up on Thursday, October 27th. Children are asked to wear Festive Attire, described in the Parent Handbook as clothes that are "nicer than their everyday school clothes." This means no jeans or cargo pants, clean clothes with no pictures, text or glitter, skirts or dresses no shorter than 4" above the knee, button down shirts for the boys, no torn clothing and no sneakers. The clothing swap will be a great place to find your festive attire for the coming year.

Save the Date! Winter Fair!! Saturday, December 10th, 11-4

Winter Fair is a beautiful festival celebrating the coming of King Winter. It is a time of magic and celebration for children of all ages - a time to get together with friends and loved ones before the deep freeze and great snows of King Winter set in and we turn towards the coziness and warmth of our hearth and homes.

The success of the festival depends on the creativity and cooperation of River Valley's parent body. Each class hosts an activity and works to make the magic of Winter Fair happen for our children. Your Festival Coordinator will shortly let you know your activity so that you may begin preparations.

Secret Garden is one of the most magical places at the festival and one the children look forward to with anticipation. Many count on this beautifully prepared activity for the gifts they present their loved ones. Each family at RVWS is asked to make 20 Secret Garden items to aid this feeling of awe and wonder. These items can be small and homemade. A list of potential items can be found in the Parent Handbook. Also Mary K Till, our handwork teacher, usually has craft workshops for parents to come and make some treasures for Secret Garden (dates and times will be found in the Current).

In addition, parents will be asked to bake one batch of gingerbread cookies for our Gingerbread Tea House, which greets our children with warm tea and a sweet snack after visiting King Winter. Recipe and instructions will be forthcoming.

Please contact this year's Winter Fair committee with any questions you may have.
Brenda Schaufele, Stephanie Smith, Paul Smith and Ron Ferguson.

RVWS Ski Club

The Ski (and Snowboard) Club is an inexpensive way to enjoy 6 weekend-night visits to the mountain (Fri, Sat or Sun 4pm to 10pm). Children any age can sign up but they must be at least 8 years old to participate in the group lessons. Parents are responsible for their children's transportation to and from the mountain and supervision while at the mountain.

All are welcome to join Ski Club. Invite your friends. They don't need to go to River Valley to be a part of our group. There are no paper forms this year. **To sign up for Ski Club use the link below.** You will need to copy and paste the link into your browser. The web site will walk you through the process. It is really simple! **Link:** <http://bit.ly/2dE4iM7>

For 6 visits:

Lift ticket only \$145

Lift ticket and Rental \$200

Lift ticket and Lesson \$200

Lift ticket, Rental and Lesson \$240

You will need to be signed up by October 24th.

Questions? Please contact Christine Aherne, cmaherne@epix.net, 267-614-5021

From Administration

Vendors Wanted for the 2016 Holiday Bazaar and Café

We are seeking vendors of hand-made items for our 2016 Holiday Bazaar and Café. Our festive event offers indoor display spaces, optional table rental, delicious food offerings and entertainment. We would like to show hand-made items such as jewelry, ceramics, fabric arts, visual arts, etc...

The sale will be held at the school on November 12th from 10:00 to 5:00. We extended the sale by 2 hours to allow for more shopping time!

If you are interested in vending, please fill out the vendor agreement available in the rack next to the office. You may leave it in my mailbox in the office or mail it to school to my attention. If you sign-up by October 10th, your name will appear on the event advertisement.

Stephanie Spencer

Development Coordinator (sspencer@rivervalleysschool.org)

Waldorf School of Princeton Welcomes Kim John Payne

Loving Limits in a Digital Age: Not Anti-Screen but Pro-Connection to Nature and People

Monday, November 28, 7 p.m.

Waldorf School of Princeton is delighted to host Kim John Payne, author of *Simplicity Parenting* and *The Soul of Discipline*, for a public lecture that resonates this season and all year round!

"Loving Limits in a Digital Age: Not Anti-Screen but Pro-Connection to Nature and People" offers parents resources for navigating some of the greatest challenges facing our society today: How to maintain loving limits, warm, firm and calm discipline and strong family connections in a world where increasingly "screens are supreme." How to build focus, grit and good judgment so that our kids do not become overwhelmed with media-driven images but can shape their own self-esteem, hopes and dreams. How to encourage respect when negative images of adults pervade pop culture. Fitting in with friends ("Won't my kids be disadvantaged if I limit screen media?"). Aloneness vs. Loneliness: Helping kids know the difference. The alluring world of no boundaries that screen use develops and how this makes discipline difficult.

A consultant and trainer to over 110 U.S. independent and public schools, Kim John Payne, M.ED, has been a school counselor, adult educator, researcher, education and a private family counselor for thirty years.

Tickets are \$10 online / \$15 at the door; sales begin Tuesday, October 11, through Eventbrite.
Waldorf School of Princeton, 1062 Cherry Hill Road, Princeton, NJ

High School Open Houses

Beginning in October many high schools in our area and beyond are holding Open Houses. Here is a list for parents and students who are interested.

Gwynedd Mercy Academy Open House: Sunday, October 9. 12-3 pm.

Princeton Learning Cooperative - Open House: Monday, October 10, 8:30-10:00am, Princeton, NJ Experience a self-directed learning cooperative while in session. Talk with teen members and staff mentor/teachers.
info@PrincetonLearningCooperative.org 609-851-2522

Solebury School - Main open house: Sun. Oct. 16 - 1-4 pm. Register online. Mini open house: Thur. Dec. 1 2:30-4

High Mowing Waldorf School Open House: October 17

Bucks Learning Cooperative - Open House: Wednesday, October 19th, 7:00-8:30pm, Langhorne, PA Hear from teen members, parents and staff mentor/teachers what it is like to be part of a self-directed learning cooperative. Tour our center. info@BucksLearningCooperative.org 215-512-0707

Abington Friends School - Open House: Saturday, October 22, beginning at 12:30

Kimberton Waldorf School Open House: October 23, at 1 pm.

George School Open House: Sunday, October 23, 2016

Registration and refreshments 1:30 p.m. The program will begin promptly at 2:00 p.m.

Registration is required. Please allow time to register at the George School Meetinghouse; registration will open at 1:30 p.m. You may also register for the event through the website at <http://www.georgeschool.org/admission/meet-us-in-person/admission-events/> Parking is available at the Fitness and Athletics Center on Farm Drive, across from the Meetinghouse. If you have any questions, please call us at 215.579.6547.

Lehigh Valley Charter High School for the Arts Open House: Tuesdays, Oct. 25, Nov. 15, and Jan. 5 at 5:45 pm. The program begins promptly at 6:30 pm.

Mercersburg Academy Admission Office cordially invites you to attend one of our Open House events on Monday, October 10 or Monday, December 12 from 9:00 a.m. to 1:00 p.m.

Moravian Academy Open House: Saturday, October, 22, 9-12 pm at the Athletic and Wellness Center on the Merlse-Smith Campus.

Bethlehem Catholic High School Open house Sunday, Nov. 6. email Jpetruzelli@becahi.org

Thank you

Many thanks to Patrick Janssen for graciously assembling our new folding chair rack and to Tom Bell for fixing the door to the cord wood shed. We are grateful for your help.

From the Faculty

What the Children are Learning:

First Grade – Arithmetic

Second Grade – Class Play/Math

Third Grade – Farming

Fourth Grade – Fractions

Fifth Grade – Ancient India & Persia

Sixth Grade – Physics

Seventh Grade – Algebra

Eighth Grade – History-Revolutions

From the Board

Board of Trustees 80s Halloween Costume Ball 7.00 pm, Saturday, October 22

Come Grave-Dance the Night Away With All of Your Favorite Fiends!

Costume and Dance Prizes! Food, Drink & DJ Andrew McIntosh!

Join Us for a Devil of a Good Time!

\$30/person \$50/couple/Faculty Free!

For tickets, please visit

<https://rvws.ejoinme.org/MyEvents/2016RiverValleyWaldorfSchoolAuctionGala/JointheFun/tabid/809084/Default.aspx>

or email Ron Ferguson at rsferg@gmail.com

From the Students

The Waldorfian

The first issue of this year's Waldorfian is underway. If any students have articles, artwork, puzzles, games, etc. to contribute, please give them to 7th graders Mary Aherne or Dylan Smith.

From Leadership Council

Leadership Council Open Visit Time

Leadership Council would like to announce Open Visit time at 3:30 – 4:00 every Tuesday. If there is a concern, conversation or suggestion that you would like to bring to the LC, this time is available each week. LC prefers that you make your intention to visit known beforehand, but it is not necessary.

Who is the LC? Annie Porter, Christina Hummel, Kathy Bernhardt and Cindy Schretlen. The LC works in the classroom/pedagogical side of RVWS governance.

From the Parent Council

Please join our new initiative! The RVWS Welcoming Committee

PC is seeking members for this committee to meet and brainstorm ideas for fun, creative and effective ways to welcome new members into the RVWS community. Do you have a great idea for how our community can connect? Then please email pc@rivervalleysschool.org and let me know about your idea or whether you would be willing to meet up and brainstorm with us. Your help and experience would be very much appreciated by PC and the school!

Parent Council Meeting Agenda 10/13/16

Welcome and check in

Leftovers from last month

- Listening Council
- B2SN
- Parent evenings—School Volunteer forms

Pedagogical Chair report

Upcoming events

- Holiday Bazaar
- PTCs
- Auction

Committee reports

- Winter Fair
- Diversity
- Welcoming
- Vice Chair reports and news from the classes

Open floor for items from attendees.

From the Community

Benefit Concert with Kira Willey and Friends

Join Kira Willey and her band for a benefit children's concert for Donegan and Freemansburg Elementary Schools, with a special guest appearance by kids' music superstar Laurie Berkner! River Valley students Maia Jarrett, Callie Miles, Sawyer Wesp and Tristan Willey will be performing, as well as RV alum Sophia Carpenter on fiddle! Other performing groups will include children's choruses and Irish dancers. The full-band event will be highly interactive with lots of singing, dancing, and fun, musical Yoga Breaks. Food and beverages will be available for purchase. All proceeds benefit the academic and enrichment opportunities for these two elementary schools in low-income communities on Bethlehem, PA's South Side.

Saturday, October 22: Lobby Show 2 PM, Concert 3 PM
Zoellner Arts Center at Lehigh University
420 E. Packer Ave, Bethlehem, PA
Tickets: \$18 adult/\$12 child, 5-Pack Tickets \$50
zoellnerartscenter.org or 610-758-2787

Move-Making!

An Introduction to the world of creative theater for 8-12 year olds

Join Muck and Gold and discover how our clever, funny, thinking body leads us to new worlds of creativity as we explore the elements of dance and theater improvisation to create our own mini works of art.

10 Tuesdays, October 11th - December 13th
4:30-6pm, Stockton, NJ at Paperboat and Bird studio
for details and registration, visit muckandgold.com

Healing Opportunities with Saharra White-Wolf

Saharra White-Wolf is offering private healing sessions Wednesday, Thursday and Friday mornings after drop off until 1 pm in Milford, NJ. A Discount of \$50 is available for the River Valley Community until the end of this year. Call Saharra 973 902 5737 if interested: Private healing sessions can include (besides Reiki): past life regression work, journey work, soul retrieval work or Chakra balancing with Andara crystals. Remote healing sessions are available for children as well.

Saharra would also love to start a bi-monthly shamanic drum journey circle for parents on Fridays from 8:30 to 10:30 am in Milford, NJ Please contact Saharra if you want to join or find out more:
saharrawhitewolf@gmail.com. Thank you

Family Meditation with Felicia Ruth

Learn to Move from Anger to Devotion
Sunday October 22, 3-4PM. Ages 8 and up
7360 Tohickon Hill Rd, Pipersville PA
For more information and to reserve space, please contact felicia@lighteducator.com

Yellowberry Holiday Bazaar Booth

Peyton Kovach, 6th grade, will be selling Yellowberry at the Holiday Bazaar. Check out this company - their mission is to empower girls and young women, inspire them to be comfortable with their own bodies, and to celebrate youth.

<https://www.yellowberrycompany.com/>

German Club in Milford

Dear River Valley Families,

Thanks to help from Lizette Tynan and Tracy Fly, German Club will start up again this Thursday afternoon, 3:45-4:45, at the Milford Presbyterian Church, just a few minutes' drive from River Valley. We will be starting this Thursday, October 13th. As always, we will have songs, stories, conversation, games, Schuhplattler dancing and a light snack that will make learning about German culture and language a delightful experience.

The cost is \$16-\$19 per class depending on the number of students, and this year I am asking families to pay in advance for a 10 week round to minimize administrative work. Thursday's German Club will be geared for 3rd-6th graders. I also have a class for 7-8 year olds in Buckingham on Thursdays, 1:45-2:45, and other classes can be arranged for older students or families who want to brush up on their German conversation, perhaps to prepare for a trip to Europe. The minimum class size is 3 if in Buckingham and 6 or more if it requires me to travel.

If you are interested in German Club/lessons/tutoring for your child, please contact Tracy Fly (tlkf@me.com) or Lizette Tynan (toothangelfairy@yahoo.com), or you may contact me directly. Feel free to call me anytime if you have any questions.

Sincerely,

Peter Ray 215-794-5816

Eagle Scout, Ethan Liebross, is Renovating the Frenchtown Park Bathroom

My name is Ethan Liebross. Over the past couple of months, I have been working diligently on my Eagle Scout project, which is to renovate the Frenchtown Park bathroom. I have been working with mayor Brad Myhre, as well as Mike Reino, head of the parks department, to make this happen. The projected start date for the renovation is November of 2016. Currently, the bathroom has rotted stalls, outdated appliances, and, overall, is in very bad shape. Many families who use the park are in need of an acceptable bathroom.

The plan is to create two unisex bathrooms, one of them being ADA compliant. With the help of Bill Carr (electrician), Alfie Grillo (plumber), Anthony DeSapio (contractor), and Martin DeSapio (architect), new plastic partitions, two new toilets, two new sinks, a baby changing station, and all new bathroom appliances will be installed. The total estimated cost for the project is \$5000. The municipality will be covering half the costs, but I will still need \$2500 in donations from our community. I'm trying to enlist the support of Frenchtown Park users as well as Frenchtown's businesses. I've gone around town and I am very grateful to have gotten offers of support from Frenchtown Hardware, the Book Garden, the Cycle Corner, Dalla Terra, What's Brewin' At Maria's, and Olive With A Twist. Any amount that you are able to provide will help and will be very much appreciated. If you have any questions about the project, please feel free to ask. Thank you in advance for your support, Ethan Liebross,

Please make checks payable to Boy Scout Troop 251 and mail them to the following address:
Boy Scout Troop 251 c/o Ethan Liebross 1170 County Rd. 519, Frenchtown, NJ 08825 – thanks for your support!

Myeong Shim Gum Do 明心劍道

Zen sword - meditation - mind training - clear mind, clear action

Shim Gum Do is an original Zen Art that integrates the practice and principles of Zen Buddhist meditation with the "action meditation" of martial art practice. The sword practice of Shim Gum Do comprises 330 forms, choreographed sequences of blocking and attacking movements. Each form is unique and generates a specific energy and a beautiful, athletic physical expression. The practice of Shim Gum Do emphasizes attaining a clear mind, clear thinking, and clear action.

Classes: Tuesday 4:30-6 pm 85 Sherman Rd, Ottsville, PA 610-297-1175 and Sunday 4:30-6 Dig! Yoga Lambertville, NJ
Very affordable! Fees vary slightly with location

Peter J. Ryan, Sabom Nim, M.Sc. is a certified instructor in this remarkable martial art who has deep experience with all ages and all types of learners. Group and individual instruction. 12 years study with Great Zen Master Chang Sik Kim. Each class will consist of individual and group instruction in Zen Sword and meditation, as well as guidance for creating a strong spiritual practice at home and at work.

Peter is a third degree black belt in Zen Sword and one of three certified American teachers of the martial art Shim Gum Do. This remarkable practice is the fruit of the Great Zen Master Chang Sik Kim's enlightenment more than fifty years ago, an extensive and fully integrated program of sword forms as well as moving and sitting meditation techniques that bring the student to "clear mind and clear action." Shim Gum Do helps bring body, mind, and spirit together in unique and surprising ways. Peter is a psychotherapist and an experienced and well-regarded teacher, who studies closely with the master. In 1998, he co-founded Tincum Art and Science, the very first high school in the United States based upon the practice of mindfulness, and has served as principal and lead teacher there for many years. TAS closed this past June, and Peter launched a more ambitious successor, The Lotus School of Liberal Arts, which opened in September.

Help Wanted

"Dirty Girl Gardening, based in Pipersville, PA & working all throughout Bucks County & beyond, is looking for full or part-time Gardening help (for the remainder of the Fall season & hopefully into next Spring)!

Must love the outdoors, enjoy hard (satisfying) work, & possess the stamina, strength & physique to work long, full days. Ideally, looking for someone with prior horticultural or landscaping experience or education, but willing to train the right candidate.

Contact Leslie Guli for more information: 267-372-4884 or email: lulucat1474@gmail.com

Yoga Loka

Introduction to Yoga Level 2 with Deb
Mondays 7pm-8:15pm. Begins Monday 10/17-11/14
Learn as much as you can in this workshop format.

Family Yoga 4 week session with Alli
Fridays 11:15am-12:15pm. Begins 10/14
When we practice with our family we get to share our super powers with the people we love.

Sound Meditation with John Muraco
Saturdays 6:30pm-7:45pm. Begins 10/22/2016
A guided breathing practice will be followed by the sounds of crystal singing bowls.

TRE and Meditation
Sunday 11:45-12:45, 10/16/2016 and 10/30/2016.
Wednesday 11:00am-12:00pm 10/19/2016
Tension and Trauma Releasing Exercises de-stresses your body and quiets your mind.

For more information please visit www.Yoga-Loka.com

Singing Workshop with Mia Bertelli

Wednesday, October 12, 6:00 - 7:30
7:30 - Song and Tune Jam at Ottsville Traditional Arts Center, 250 Durham Road, Ottsville, PA

Mia Bertelli is a New Mexican-born singer, fiddler, and dancer with a love for satisfying harmonies and a penchant for playful nuance. With roots in traditional American folk music and many years spent singing traditional polyphonic world music with Village Harmony and Northern Harmony, she brings a wealth of experience in diverse styles to her teaching and performing. From ballads to country harmony, or lullabies to shape note, Mia brings an attentive ear, a joyful sense of playfulness, and a library full of songs you can't help but want to sing. Everyone who wants to sing is welcome!!!

VAXXED Screening in Easton, PA

The movie, VAXXED, will be shown in Easton on Monday, October 24, 2016 at 7:30 pm. Go on the website: <http://gathr.us/screening/17840> to reserve tickets. If they do not get enough reservations, the movie will not be shown. You can also order the movie on Amazon or the website: vaxxedthemovie.com.

A Weekend Retreat

Let Your Life Speak, Listen to the Sound of Other Lives
October 14, 2016 6:30 PM until October 16, 2016
Location: KirkrIDGE Retreat Center. Contact: KirkrIDGE <http://www.kirkrIDGE.org/>

The weekend will inspire us toward embracing important life transitions and deepening dialogue with friends, colleagues and family. The work of Rudolf Steiner and Parker Palmer, *Courage to Teach*, are bridged this weekend. Human beings experience life cycles, reflecting nature's rhythms of day, week, month, year, decade, and century. Tune into seven year phases to get a deeper understanding of your destiny, mapping the encounters of your life, seminal meetings, transformative experiences, and important, perhaps forgotten stories from childhood, adolescence, early and late adulthood. At the same time, learn about creating Circles of Trust, by practicing the art to listen to others. Artistic exercises will engage us in conversation in new ways, growing meaningful relationships in a short time. Listening to what your life tells you is filled with surprises. Treat yourself! Get closer to nature, how it walks inside you and how you walk in nature's woods. Join us, you will not regret it!

KirkrIDGE Retreat Center in the Pocono Mountains, Bangor PA, provides a beautiful setting for study, great food, and as it located on the Appalachian Trail, walking paths are plentiful. <http://www.kirkrIDGE.org/>

Patti Smith, Ed. D., *Courage and Renewal* Facilitator, Center for Biography and Social Art, Board Trustee where she develops programs for using biography as a source of meditation and self-discovery. She is the co-editor of *More Lifeways: Changes in Family Life in the '90's* and *Service Learning: Students at the Heart of Learning*, as well as the documentary, *Taking a Risk in Education: Waldorf Education in Public Schools*. She is a devotee of walking and hikes in nature every day to restore her sense of humor.

Jennifer Brooks-Quinn is an adult educator and a biographical counselor with a private practice in Spring Valley, NY and New York City. She is also a Waldorf teacher. She has been the director and co-director of Foundation Studies in Anthroposophy at Sunbridge College, in NY and the Brooklyn Waldorf School. She offers courses workshops and retreats in Latin America, China and the US.

See more at: <http://www.kirkrIDGE.org/index.cfm?e=event&eventId=24745&rDate=1476424549#sthash.X7u9JlqZ.dpuf>

Grade School
Michaelmas Celebration



From The Wall Street Journal, posted on Waldorftoday.com

Get Your Children Good and Dirty

Researchers are discovering how crucial microbes are to our health and to avoiding a range of newly common diseases. So it's time to get dirty, eat better and stop overusing antibiotics

By B. Brett Finlay and Marie-Claire Arrieta

Our friend Julia moved to a small free-range pig and poultry farm when her first child, Jedd, was a preschooler. When her second baby was born, she would strap him on her back every morning so that she could go to the chicken coop to pick up eggs. Jedd would chase and ride the chickens—and sometimes taste their feed and touch the fresh eggs. A couple of times, she even caught him chewing on something he had picked up from the ground.

At first, all of this caused Julia to freak out. But once she realized that Jedd wasn't getting sick from these encounters with the chickens, she relaxed a bit. Her second child, Jacob, soon followed suit and never hesitated to get dirty on the farm. She once found him knee-deep in a cesspool of pig waste. Her early worries that her children were going to contract diseases from all this messiness dissipated, and she was pleased to see that they remained healthy. Was Julia being an irresponsible parent—or might we all have something to learn from her example?

For most of the past century, we have considered microbes bad news, and for good reason: They cause disease, pandemics and death. Most human communities have experienced the benefits of medical advances like antibiotics, vaccines and sterilization, which have radically reduced the number and severity of infections that we suffer throughout life. Dying from a microbial infection is now a very rare event in the Western world, and, in the U.S., lifespans have increased by some 30 years since 1915—in large part because of success against infectious diseases.

Unfortunately, this progress has come with a price, as news reports have been telling us for some years now. Our anti-microbe mission has been accompanied, in industrialized countries, by an explosion in the prevalence of chronic noninfectious diseases and disorders. Diabetes, allergies, asthma, inflammatory bowel diseases, autoimmune diseases, autism, obesity and certain types of cancer are at an all-time high. The incidence of some of these disorders is doubling every 10 years, and they are starting to appear sooner in life, often in childhood.

All of these diseases have a genetic component, but their alarming growth cannot be explained by genetics alone. Recent studies find a direct link between the presence and absence of certain bacteria and all of the chronic diseases mentioned above. It turns out that the microbes within us are much more than quiet residents; they are an inherent part of our physiology, and altering them leads to disease.

Our own 2015 study (published in the journal *Science Translational Medicine*) found, for example, that 3-month-olds who had four particular microbes in their feces were much less likely to get asthma later in life. When those four microbes were introduced into mice, they protected against experimentally induced asthma, showing for the first time that alterations in gut microbes can drive the development of the disease. Lab experiments also have found that obese mice lose weight when they get a transfer of gut microbes from lean mice (and the reverse holds true as well, with lean mice growing fat after a transfer from obese mice). The practical upshot of all this research is clear: Our health depends to a large degree on maintaining a robust and diverse community of microorganisms in our bodies—and establishing good gut-health as children is especially important.

During the first few months of life, the microbe community in our bodies is considerably less established and stable than later in life. Any drastic changes to it have a much higher chance of permanently altering our microbiota (as specialists call this world of tiny organisms within us) and our long-term health. From the moment we are born, we begin getting colonized by bacteria, which kick-start a series of fundamental biological processes, including the development of our immune system. Before birth, the lining of our gut is full of immature immune cells. When bacteria move in, the immune cells react to them, changing and multiplying. They even move to other parts of the body to train other cells with the information they have acquired from these intruders. If deprived of this interaction, the immune system remains sloppy and immature, unable to fight off diseases properly.

(Continued on next page.)

Scientists haven't figured out exactly how microbes do this at the molecular level, but we do know that most bacteria will teach these immune cells to tolerate them, whereas some bacteria—the pathogens that cause diseases—prompt strong resistance. The result is to make the intestine a relatively controlled and harmonious place. Another fundamental function of microbes is to aid in the regulation of our metabolism. Like other animals, humans obtain energy from food that is digested and absorbed in the intestines. Besides helping us digest certain foods that the intestines can't handle on their own, bacteria produce compounds that help to define how we use or store energy in our bodies. New research also shows that our microbiota plays an important role in neurological development and even in the health of our blood vessels.

Such discoveries have led scientists to call our microbiota a “new organ,” perhaps the last human organ to be discovered by modern medicine. Most of this knowledge is still relatively new and many pieces of the puzzle remain unsolved, but protecting the initial developmental stages of our microbiota clearly has a significant impact on our health.

Inflammatory diseases (such as asthma, allergies and inflammatory bowel disease) and metabolic diseases (such as obesity and diabetes) are characterized by alterations in our immune system and our metabolic regulation. Knowing what we do now about the role of the microbiota, it is not surprising that these diseases are being diagnosed in more children. They are, to a great extent, a consequence of relatively recent changes in our lifestyle—modern diet, oversanitization, excessive use of antibiotics—that have altered the specific microbes that affect our metabolism early on. We urgently need to find ways to modify our behavior so that our microbes can function properly. Never before in human history have babies and children grown up so cleanly, and our diets have lost many of the elements most crucial to the health of our guts. We have become very bad hosts to our microbes.

What to do about it? The U.S. Food and Drug Administration took one helpful step earlier this month when it banned some chemicals used in antibacterial soap, but the most important changes need to take place in our everyday routines. Parents can expose their children to an array of microbes by encouraging them to spend time outside, like our friend Julia on her farm (but not necessarily with chicken and pig waste). Today children spend much less time outside than they did only 20 years ago. Babies and toddlers often aren't allowed to play in the dirt or sand, and when they are, they are wiped clean immediately. Phrases like, “Yuck! Don't play in the mud!” or “Don't touch that bug, it's dirty!” have become second nature.

We need to unlearn these habits. By preventing babies and children from following their innate impulse to get dirty, we shield them from the microbial exposure that is essential for the development of a healthy immune system. Parents can also promote good gut-health in their kids through diet. It is well established that the Western diet—high in fats, sugars and highly refined grains—is very strongly associated with a number of diseases, especially obesity and the closely linked disease of type-2 diabetes.

Our ancestors grazed on a variety of foods, which ensured a variety of microbes in their intestines: Eating a range of different foods provides a hospitable environment for a range of different microbes. Today, 75% of the world's food comes from just 12 plant species and five animal species. Amazingly, just three species—rice, corn and wheat—account for 60% of the calories that humans obtain from plants. Except for regions where a lack of economic development has preserved older farming and dietary practices, more people are eating refined white sugar, white flour and processed fats, instead of our ancestral diet of vegetables, fiber, fruit and nuts.

A 2010 study in the Proceedings of the National Academy of Sciences compared the microbiota of children living in rural Burkina Faso in West Africa to the microbiota of urban, city-dwelling children in Italy. The African children ate a high-fiber diet of vegetables, grains and legumes, with no processed foods, whereas the diet of the European children was full of sugars, animal fats and refined grains. The gut microbes of the children from Burkina Faso were very different from—and much more diverse than—those of the Italian kids.

We wouldn't want to say that children in Burkina Faso have a healthier lifestyle than Italian children. They are more likely to suffer severe infections and malnutrition, and they have a lower life expectancy than children born in Western Europe. But they also have a decreased risk of suffering from the immune diseases that are epidemic in the Western world.

In an ideal world, children would harbor a rich and diverse community of microbes without the threat of severe infectious diseases, but our current practices only address half of this equation. Given how well bacteria

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respond to diet, eating a variety of foods is perhaps the best way to increase microbial diversity, and there's no better time to do this than during the first few years of life.

As a practical matter, this means that we shouldn't feed a baby only rice cereal for weeks until the package is finished. We should offer a variety of grains, including oats, rice, barley and quinoa. It's also important to offer whole grains instead of refined ones. The Western diet is extremely low in fiber, and refined grains contain very little of it. Protein-rich legumes, such as lentils, beans and peas, have an abundance of fiber and can be easily mashed for babies. Also try nontraditional starchy vegetables such as sweet potatoes, parsnips or cassava (tapioca) rather than just sticking to low-fiber veggies such as potatoes. For older children, add fermented foods, such as yogurt, kefir, sauerkraut and other pickled vegetables.

Most people in developed societies won't crave these foods the same way that they crave the texture of macaroni and cheese or the like, but infancy is the best time to introduce good dietary practices. For children, eating healthy foods becomes a habit in the same way as cleaning their room does: by doing it frequently. Food isn't the only way that we have altered our microbiota, however. Our microbes have perhaps taken the biggest hit from one of the best things humanity has ever invented: antibiotics. These wonder drugs have saved millions of lives and will save millions more in the future. But antibiotics aren't targeted missiles that kill only the bad bacteria causing infections; they are carpet bombs that kill good and bad bacteria indiscriminately. Research now suggests a link between the use of antibiotics in early childhood and problems such as obesity, diabetes, asthma, allergies, autism and inflammatory bowel disease.

We ought to become more restrictive with the use of antibiotics in children. Parents shouldn't assume that all infections have to be treated with these drugs. Upper respiratory tract infections and colds are often caused by viruses, so antibacterials won't cure them. Most sore throats, especially if the child also has a runny nose and cough, are caused by viruses and don't need antibiotic therapy. If a child has a mild ear infection, it's reasonable to watch and wait for a few days to see if it gets better on its own before starting antibiotic therapy. Also, parents should consider giving probiotic supplements (with live bacteria and yeasts) to a child if he or she is being given antibiotics.

With the scientific information now available, parents can make informed choices about helping their children to develop a thriving microbiota. We are still years away from learning the whole story of how microbes contribute to our physical well-being, but what we know today is pretty convincing evidence that they are crucial, especially early in life.

For much of the past century, we have ignored, and often destroyed, the microbes that keep us healthy. It's time now to correct the balance.

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