



Health Hunters Newsletter

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Brain Health: How to Keep Your Mind Healthy Your Whole Life

by Dr. Anne Zauderer

Our mind is a precious thing. On a very basic level, it is what keeps us alive by regulating our basic functions: our hunger, our breath, our digestion, our heartbeat. However, on a more personal level, it is our memories, our personality, our knowledge, and our drive. It truly is a precious thing. Protecting the health of our mind should be a lifelong endeavor.

In this article, I want to give you some tools that you can use to keep your mind healthy and young. This sort of an endeavor is a marathon, not a sprint. It involves stepping outside of your comfort zone and trying new things. In fact, what you are doing right now (reading this article) is great for your brain health! So keep up the good work...

In order to survive, our brain needs two basic things: **fuel** and **stimulation**. We fuel our brains with oxygen and the right nutrients (we'll talk more about the nutrients you need for brain health later in the article). **Stimulation** to the brain comes from our sensory system: smell, sight, touch, taste, and sound. It's all of the stimulation that the brain receives that causes it to grow. Having the right stimulation, new stimulation, and frequent stimulation are the keys to maintaining a healthy brain.

We are born with all of the brain cells (called neurons) that we will ever need over a lifetime. However, as an infant, we only have basic connections between those brain cells. As a child acquires more and more skills, more connections develop. Kids will make upwards to 90% of the connections in their brain by the age of 5, so a lot of learning happens early in life! However, we all know that we are able to learn new skills throughout our entire life. So how do we learn those new skills?



Brain Health continues on page 2...

Contact the Editor

Please send any comments or suggestions to newseditor@riordanclinic.org.

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Editor

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Health Hunters Newsletter

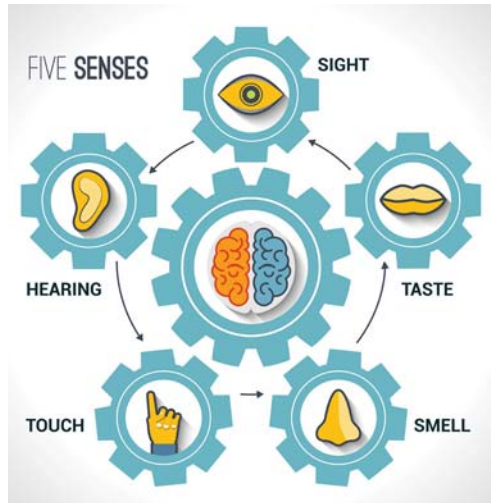
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Brain Health continued from page 1...

By making more brain connections! We make these connections by stimulating the brain.

To understand how important **stimulation** is to the brain, you want to think about the brain like a loop. The brain initiates certain actions in the body. Some of those actions are voluntary, such as walking and talking; however, some of those actions are involuntary such as breathing and digestion. These are critical functions for

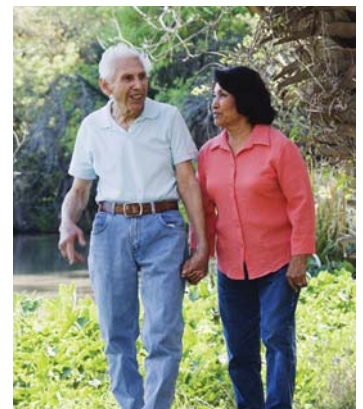


the body; however, they are only half of the story. The other part of the “brain loop” is the sensory information that the brain receives. Our brain is constantly gathering information about how the body is moving and about our environment. With all of the information the brain gathers, it then can appropriately tell the body how to respond. But it’s this “gathering of information” that stimulates new connections in the brain. **The brain makes the body move, but it’s the movement of the body that fuels new connections being made in the brain.**

Here are a few ways you can provide sensory information to the brain to build or strengthen connections in the brain:

- 1. Move your body!!** I can’t stress this one enough. Find an activity that you enjoy and get out and do it! Whether it’s swimming, Tai Chi, aerobics, Crossfit, yoga, biking, walking, or playing pickleball (trust me, it’s a real sport), find new and different ways to challenge the movement of your body. The key with physical movement and building brain connections is to constantly be changing it up and frequently trying new things.
- 2. Stimulate your senses intentionally.** Our sensory system is a powerful thing. Our brain is constantly gathering information about our environment. The smell of fire can cause our body to leap into action, the smell of cookies can make our mouth start watering, and the sensation of heat on our skin can cause us to withdraw our hand from a hot stove. Interestingly, a lot of sensory information our brain is collecting is mostly unconscious. However, we can consciously choose to stimulate our senses in very powerful ways. Here are a few ideas for you to stimulate your senses:

- Turn down all the “noise”. Turn your TV off, put away your smart phone, and be aware of your senses. Meditation is a great way to calm the mind and practice sensory awareness.
- Go for a walk in nature—be aware of what you are hearing, smelling and seeing. This will make your senses more acute.
- Play classical music. Classical music can have a calming effect on the brain.



Brain Health continues on page 3...

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11 Spring Fruits and Veggies to Boost Your Metabolism

1. Radishes



2. Asparagus

3. Strawberries

4. Artichokes



5. Fava Beans

6. Apricots

7. Dandelion Greens

8. Sugar Snap Peas



9. Kale

10. Broccoli

11. Blood Oranges



The two different brain hemispheres are attuned to different musical qualities. For instance, the right hemisphere processes harmony, interval, quality, timbre and patterns. The left hemisphere processes pitch, timing, rhythm, lyrics, familiar sounds, and rapid variance in volume. Listening to a variety of music and being aware of these qualities can provide powerful stimulation to the brain.

- Prepare food at home using a variety of spices. Using fresh, whole food ingredients in your meal preparation and being aware of all of the food and spice combinations can be a powerful sensory experience! Ditch the packaged, pre-prepared foods that are high in salt and preservatives (they use these chemicals to mask the flavor of poor quality food). For an easy recipe, whip up a fresh cucumber dill salad (recipe below!) and enjoy the ingredient combination.

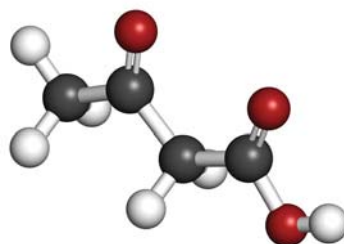
- Get a chiropractic adjustment or massage to stimulate proprioception and touch.

3. Activate your mind. Do this continually by challenging your mind to do new things. You can easily do this by reading new books, trying challenging crossword puzzles or Sudoku, learning a new language, auditing a college course, finding a new hobby or skill, or even doing regular “brain games” through companies such as Luminosity or CogniFit.

Now that we have addressed the first half of maintaining a healthy brain (stimulation) what about the other half, **fuel?** What fuel does the brain need to stay healthy? There are two very basic sources of fuel that the brain needs: oxygen and energy/nutrients.

Oxygen is critical for brain function. Without oxygen, brain cells will die within a matter of minutes. The best way to improve oxygenation to the brain is ... exercise! Exercise will work the heart muscle to help it pump and transport oxygen in the blood more efficiently. Also, the better shape you are in, the better your body inherently gets at transporting oxygen (think about how hard you huff and puff when you haven't been to the gym in a while).

The second source of fuel that is critically important is the right nutrients/energy.



The brain is fueled by glucose (this is why we are biologically programmed to love the taste of sugar). However, the body also has a back-up mechanism if glucose isn't present (think of our ancestors that hunted and gathered their food—they would have periods where food wasn't always readily available). If glucose isn't present to burn as energy, the body will break down fat

CUCUMBER, RED ONION, AND DILL SALAD RECIPE

While English cucumbers are generally seedless, if any seeds remain, simply scoop them out by dragging a spoon down the length of the cucumber.

INGREDIENTS

- 1/4 cup white wine vinegar
- 2 teaspoons sugar
- 1/4 teaspoon salt
- 2 English cucumbers, peeled and cut in half lengthwise, sliced into half moons
- 1/2 red onion, thinly sliced
- 2 tablespoons chopped fresh dill

DIRECTIONS

In the bottom of a large bowl, whisk together the vinegar, sugar, and salt. Toss in the cucumbers, red onions, and fresh dill. Cover and chill for at least 15 minutes.

Source: marthastewart.com

PATIENT PROFILE

by Chris Brannon RN, BSN

If depression, anxiety, and bi-polar disorder were all weighing heavily on your daily life, how far would you look to find a possible answer to your causes? What if the answer involved specific nutrient testing and dietary changes that would lead to lifestyle changes for the rest of your life, could you do it? Your answer should be “YES!”

A co-learner came to our clinic in October 2013 looking for direction on how to make the necessary changes to control her mood changes. Since 1998, she has been on several different medications for her mood disorders that were not solving the problems, but slightly lessening the outbursts. The initial plan was to have a variety of nutrient and cytotoxic food sensitivity tests performed, and to then get a baseline of what we could change.

Once the results of these tests came back there was some work to do. Several vitamins, such as C, D, and B12, were “basically zero”. The food sensitivity testing showed that dairy and wheat were an issue for her as well. After about 6-9 months of supplementing these vitamin deficiencies and changing her “standard American diet” to cut out dairy and wheat, great changes were being noticed. She is now completely off of medications and is proud to say that she has a much happier, healthier mind that is well noticed by her husband and children.

This leads to her extended success. With the strides in her improvement, she wanted to help her daughter by seeing if she could get off of her anxiety medication that she had been on for over a year. After eliminating dairy from her daughter’s diet, improvements were seen as quickly as the first week. Over the course of a single month, she was able to stop the medication all together.

Nutrient testing and dietary changes helped this family, and may help you as well!

Brain Health continued from page 3...

and convert the fatty acids into **ketones** for energy. New research is showing that these ketones have a very protective effect on the brain. Additionally, research is also showing that the over-consumption of carbohydrates and sugar can have a negative impact on the brain, and lead to neurodegeneration (some sources are now calling Alzheimer’s “Type III Diabetes”).

So here is a short list of ways to **fuel** the brain for optimal performance:

- 1. Consume coconut oil**, which is high in Medium Chain Triglycerides (MCTs). MCTs are very readily converted by the liver into ketones. This can have a very protective effect on the brain. I recommend using coconut oil as much as possible in cooking. You can also purchase straight MCT oil and add it to smoothies or your coffee in the morning.

Side Note: The morning is a great time to consume MCTs because, overnight, your body has already switched into “fat burning mode” while you were asleep. Eating good, quality fats in the morning will promote the burning of fats for fuel.

- 2. Decrease your intake of sugar and simple carbohydrates.** Not only will this help protect against diabetes, elevated triglycerides, inflammation ... etc., this is also extremely protective for the brain. Do a **30-Day Food Challenge**. Give up all grains and sugars for 30 days and see your cognitive performance and mood improve!

- 3. Eat high antioxidant foods that decrease inflammation.** Inflammation in the brain can lead to “brain fog”, memory changes, and neurodegenerative changes. Protect your brain with foods and nutrients that decrease inflammation. Here are a few of my favorites:

- Turmeric (curcumin)—use as a spice in cooking and take it as a supplement
- Garlic
- Leafy greens (spinach, kale, swiss chard)
- Berries
- Nuts and seeds
- Coldwater fish
- Colorful vegetables (bell peppers, beets, sweet potatoes...)

The key to optimal brain health is making a lifestyle out of all of these recommendations. All of these things, combined with getting the right amount of sleep and developing a low-stress lifestyle, will keep our brains active and healthy!





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Autism Spectrum Disorders: *The Brain Connection*

by: Dr. Anne Zauderer



If you were to profile two children who were diagnosed with “Autism”, chances are, each case would look very different. Some children with Autism are verbal, others are not. Some have hyperactivity or obsessive compulsive tendencies, others do not. What is it that makes this condition appear similar, yet so different in children? All of the conditions on the Autism Spectrum have one similarity: *functionally, the child's brain is not operating correctly.* It would be like having all of the appropriate hardware to run a computer, yet not all of the software has been downloaded correctly.

The brain is the only organ not fully formed at birth. Children are born with only about 25% of their total brain volume. Otherwise, babies wouldn't fit out of the birth canal! Most of that volume is made up of neurons, which are the cells that make up our brain. As babies start to grow and learn new skills, they are not forming new neurons; they are making **connections** between their existing neurons. This is known as **neuroplasticity**. This phenomenon is what allows us to constantly learn new skills throughout our lifetime. However, in the early stages of development, babies are in hyper-drive as far as developing connections in their brains. Children will develop 90% of the connections between the two hemispheres of their brain by the age of 5. This is an extremely important time, developmentally, and the most important time to be vigilant in providing the proper diet and nutrition, stimulation, and activity as well as avoiding toxins for children.



So what happens if the brain doesn't connect correctly? The connections our brain makes are extremely important. In fact, 85% of our genetic code is responsible for how our brain connects, it's that important! Children who are on the Autism Spectrum, the “hardware” of their brain is completely normal, but they haven't downloaded the appropriate software or “connections” to operate it appropriately. Each child's brain connects a little bit differently. This is why there are a wide variety of combinations of symptoms associated with Autism.

Since the idea of neuroplasticity holds true for everyone, the good news is, there are always things you can do to stimulate a child's brain to form those connections appropriately. The first step is to prepare the environment of the brain to heal. This includes identifying and eliminating any neurotoxic and/or inflammatory triggers and supplementing with the right doses of nutrients to support the body to heal. The next step would be to work with a healthcare provider who can give the child brain-based activities that will stimulate the brain to form the appropriate connections. The combination of these two things will put the child on track to achieve a more functionally balanced brain, which can help relieve some of the symptoms associated with Autism Spectrum Disorder.

For more information on nutrient testing, toxic metal testing, food allergies and brain-based exercises, contact **Dr. Anne Zauderer at the Riordan Clinic. 316-682-3100**

SHARE your STORY



As Riordan Clinic celebrates its 40th year we would love to hear stories of your experiences! Do you have a story about a particular staff member that touched your life? A service or therapy that impacted you in a positive and lasting way? Maybe a story of an event that you attended or a note about the campus?

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Source: www.orthomolecularproducts.org



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Mega Mondays

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| B12 | Lipoprotein (a) |
| C | Triglyceride |
| C, Urine | Glucose |
| D | Estimated Average Glucose |
| E | Hemoglobin A1c |
| Boron | Insulin |
| Calcium | Basic Cytotoxic |
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METHYLATING – MAKES YOUR BODY CHEMISTRY WORK

by Karen Wheeler APRN

Methylating. What the heck is that and why is it so important?

When you set out to make a cake, you have to put together the right ingredients in the right amounts and process it just so to make the cake taste right. So you follow a recipe that has all the steps, ingredients and instructions. In our bodies, we need the right nutrients in the right combinations and amounts in order for our bodies to feel good and work right. It takes many steps in the right order to make things function well.



Our bodies are made up of genes that read the recipes of the chemical reactions that keep us alive. Each gene has a part that comes from our mother and another part that comes from our father. It is the combination of these parts that determines how well the body measures and mixes our nutrients. If both parts are strong, things get put together better than if one is weak and one is strong. However, the process gets really slowed down when both parts are weak. Each step in the recipe is controlled by a gene, so getting through the entire recipe means that each one has to do its job to get the end product to turn out right.

One of the recipes that our body has to follow is methylation. This is the process of adding a methyl group to another chemical which changes the properties of both the donor and receiving chemical. For example, when two methyl groups are added to mercury, it makes the mercury more soluble and easier to have the kidneys remove it from the body. This is called detoxification. However, detoxification is just one of the processes helped by methylation.

The methylation pathway is connected to the folate cycle which is how your B vitamins are used. The folate cycle is connected to the neurotransmitter cycle which makes your brain chemicals such as dopamine, serotonin, and norepinephrine. But it is also connected to the Transulfuration cycle which makes homocysteine that affects the lining of the blood vessels. Each step in each of these cycles is controlled by an enzyme which, in turn, is determined by your genes.

Methylating continues on page 8



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NUTRIENTS ESSENTIAL FOR BRAIN DEVELOPMENT AND FUNCTION

by Charles T Hinshaw, Jr, Director,
BioCenter Laboratory

Below are listed the nutrients necessary for optimal brain health- excesses or deficiencies will adversely affect brain function. When a balanced diet of certified organic vegetables, fruits, meats, dairy products and grains is consumed, your body will absorb and properly utilize the needed nutrients, discarding those not needed. Consuming such a diet in today's world is quite difficult; proper supplementation will restore balance. All of the nutrients below can be measured at the BioCenter Laboratory at Riordan Clinic. Following the listing of essential nutrients you will find an abbreviated list of substances which should be carefully controlled or eliminated from your diet, as advised by your Riordan Clinic physician.

THE GOOD

- **Vitamins:** A, B1, B2, B3, B6, B12, pantothenic acid, choline, C, D, E, folic acid
- **Minerals:** Calcium, magnesium, zinc, selenium, iron, copper
- **Amino Acids:** Phenylalanine, cysteine, glutamine, tyrosine, tryptophan, leucine, isoleucine, valine, threonine, proline, lysine, arginine
- **Fats:** Linoleic acid (omega-6), alpha-linolenic acid (omega-3)

THE BAD AND THE UGLY

Substances/conditions to be avoided, eliminated or carefully controlled: Aluminum, Mercury, Fluoride, calcium-magnesium imbalance, vitamin D excess or deficiency, protein-calorie malnutrition, disorders of carbohydrate nutrition.

Methylating continued from page 7

The MTHFR gene plays an important role in the methylation process. If you have a MTHFR gene mutation, your methylation cycles may not be working as well as they could if this gene was normal. When methylation takes place in your DNA, it is a KEY factor that determines how your genes respond to your environment. This is where your body makes proteins, hormones and enzymes. This is what determines whether your genes get turned off or on, and if you end up having diseases such as autism, birth defects, mental illness, cardiovascular disease, cancer and diabetes. So you may be born with a set of genes but what you do with your lifestyle and nutrition really does make a difference in how healthy you are.

Each step in the Methylation cycle, as well as the others, is connected with required nutrients and cofactors in order to work properly. This is why it is so important to have a healthy diet to make sure that these essential ingredients are available to keep the system moving well. Likewise, avoiding toxins and pesticides lessen the body's burden of having to detoxify and overall keeps you feeling better.



Now there are genetic tests available that can be combined with nutrient testing to get to the "root" of a person's health condition. Come and see us and find out how you can get these tests and let us help you interpret this vital information.



Health is... 2015 Contest Winners

1st Place

Art: Rebekah R, 6th grade, Central Christian Academy
Technology: Cael S, 5th grade, Discovery Intermediate
Essay: Kristin W, 7th grade, Central Christian Academy

2nd Place

Art: Ariana D, 5th grade, Bostic Traditional Magnet
Technology: Merina M, 5th grade, Bostic Traditional Magnet
Essay: Julia B, 6th grade, Derby 6th Grade Center

3rd Place

Art: Morgan B, 5th grade, Central Christian Academy
Technology: Brooke E, 5th grade, Central Christian Academy
Essay: Isabella A, 5th grade, Bostic Traditional Magnet



1st place prize: iPad Mini 16gb
2nd place prize: Kindle Fire HD6 8gb
3rd place prize: \$50 gift card

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RiordanClinic.org/Health-is-contest-information

Questions?
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