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Inside this Issue

New Thinking about the
Brain: How to Decrease
Your Chances
of Neurodegeneration

1-3

Nutrients for Brain Health

4-5

Essential Oils for
Immune Support

6-7

12 Months to a Healthier You!

8

New Thinking about the Brain: How to Decrease Your Chances of Neurodegeneration



AUTHOR

Sean Hubbard, DC, DACNB

The fear of growing old just got a whole lot tougher for many heading into retirement age. The prevalence of dementia among

older generations carries questions about the risk not only to our physical, but also to our cognitive well-being in later life. More people live in fear of the development of dementia than the development of cancer. The fear of dementia occurs in two-thirds of people over fifty, while just one out of every ten fears cancer. These fears can surface whenever we can't find our keys or recall a name. It is common and understandable to feel this way, especially if we see the effects of dementia and Alzheimer's in family members. The truth is, we can improve our mental state and prognosis right now! Our brains were built to adapt, not decay.

The brain's ability to adapt – neuroplasticity.

The ability of the brain to be adapting continually to its environment is a concept called neuroplasticity. As infants, we were born with all of the brain cells (called neurons) that we are ever going to need in our lifetime.

What gives us the ability to learn is when those neurons make connections with

other neurons. (Each one can have anywhere from 4,000 to 10,000 connections with other neurons!) What's fascinating is that we will form approximately 90% of all the connections in our brain that we will develop over our lifetime by the age of 5 (before kids even start school!). The reason so many connections are made early in life is because the majority of the connections in the brain are devoted to our movement patterns. **This is evident by looking at the changes in motor control of an infant for the first 5 years.**



Riordan Clinic is a not-for-profit 501(c)(3), nutrition-based health facility in Wichita, Kansas cofounded in 1975 by Olive W. Garvey and Hugh D. Riordan. We have integrated lifestyle and nutrition to help you find the underlying causes of your illness. Since our inception in 1975, the mission has been clear and unwavering to "...stimulate an epidemic of health."

WHERE TRADITIONAL MEDICINE FAILS US IS THAT IT WAITS TO DIAGNOSE UNTIL THE BRAIN HAS SIGNIFICANTLY DETERIORATED AND SOME OF THESE PATHWAYS ARE BEYOND REPAIR. WHAT IF WE COULD IDENTIFY THOSE WEAKNESSES EARLIER AND STRENGTHEN THE CORRESPONDING PATHWAYS?

Another interesting fact about the brain is that it organizes upward. This means that babies are born with basic brainstem connections. As they start to learn to control their muscles and move intentionally, the connections move from the brainstem up to the subcortical areas (mainly the cerebellum and basal ganglia) and then up into the cortex. The cortex is also where we have our higher learning centers in the brain. The reason this is significant is because **how you move your body influences how your brain learns and makes connections**. It's no coincidence that as soon as a toddler gets comfortable with balancing and walking, that's when his/her language and reasoning start to appear. This is because they are strengthening the connections in their cortex through more complex movements.

When we look at the root cause of neurodegeneration, at a basic level, it is the brain losing those connections that we've worked to develop over our lifetime. The weaker certain pathways become in the brain, the harder certain skills become. Where traditional medicine fails us is that it waits to diagnose until the brain has significantly deteriorated and some of these pathways are beyond repair. What if we could identify those weaknesses earlier and strengthen the corresponding pathways? We always have the ability to make new connections. Dementia may be neurodegenerative, but we can control the speed of the onset and the severity of symptoms.

What can we do to slow the process of neurodegeneration?

Anyone can take some small steps with lifestyle choices to improve cognitive health. It may not seem important right now, but these small steps could have an impact on future neurodegeneration. These recommendations are some we have all heard before; however, in the context of neurological health, the importance of each recommendation is significantly strengthened. These small steps could both slow the process of losing connections and help you strengthen the connections you already have.



First, we need to take control of substance abuse.

This includes excessive drinking and smoking. Smoking leads to shrinking of the brain. There is also a 35% increased risk of stroke, which has its own significant neurological implications. As for alcohol, excessive drinking kills brain cells. Cut down your intake to a minimum each week, which means no binge drinking.



Increase the frequency and variety of your physical activity.

Studies show that regular exercise slows down cognitive decline. We all need to stay active at any age. Research shows two approaches that can really help. The first is brisk movement for 30 minutes, such as a good morning walk. The second is to do something slow with gentle and varied patterns of movement, such as Thai Chi or yoga. Both of these types of exercise are important and are most effective when used in an alternating fashion.



Increasing your mental activity is also important for brain health.

Engage the brain in all sorts of hobbies and studies to keep it active and build stronger connections. Some may do so by reading a little more or testing the brain with more puzzles. Creative types can engage with arts and crafts. It also helps to learn a new skill, like an instrument or language.



Get a good night's sleep.

We should all be aiming for 8 hours. This long sleep allows the brain down time to repair and reconstruct. It repairs connections, troubleshoots problems, and forms new memories. It is important to stop and give the brain the time to do this. Signs of poor sleep include chronic fatigue, memory issues, agitation, and lack of concentration.



Finally, we all need to improve our diets.

Quit the standard American diet (SAD). This SAD approach to food has strong links to many health conditions such as heart disease, diabetes, and obesity. There are additional concerns over the link between Alzheimer's and dysregulated blood sugar, which result in chronic inflammation in the brain. Work on a new, healthy diet with better food choices. Also, try to monitor blood sugar levels and spikes.

Proactive solutions for those dealing with early symptoms of cognitive decline.

The advice previously discussed is a good basis for those who are otherwise healthy and keen to make changes *before* major

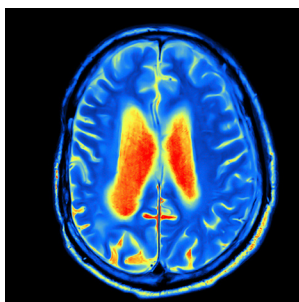
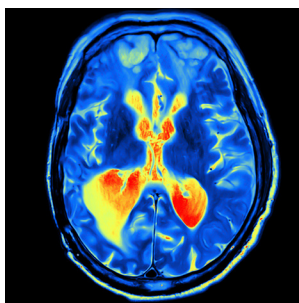
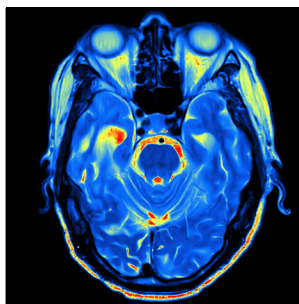
neurological issues emerge. What about those at the tipping point of memory loss and cognitive degeneration? This general information may seem overly simplified. This is when it could help to talk to a functional neurologist. These specialists possess detailed knowledge about the pathways in the brain and its response to specific movement and environmental stimuli, and can specifically isolate areas of weakness in the brain.

The brain processes information from external sources to form a clear picture of a current situation and environment. Much of this relies on input to our sensory systems: visual stimuli, signals from our inner ear, and proprioception (signals from our muscles and joints). Ideally, these responses should all knit together into a clear understanding of the present moment. However, this isn't always the case for those with neurological problems. The brain can fail to process information correctly, which creates an unrealistic viewpoint. The problem with this is that the brain trusts its sources and assumes that everything is real. This conflict causes issues in the real world with inappropriate responses to stimuli. Functional neurologists can tell the difference and with the right approach help find solutions.

The first approach is to challenge the brain with some physical tests. As we discussed previously, how an individual is able to move their physical body is a strong reflection of brain health. Inability to balance or move correctly indicates functional weaknesses in the brain. One of the most common tests we do is to have the patient stand on one leg for 20 seconds. Inability to do this may have less to do with balance and leg strength, and more to do with neurological dysfunction. This test is used as an important signifier of microscopic brain damage. Performance during key mental exercises is also an important indicator for a comprehensive approach for rehabilitation. Those who have specific, neurological weaknesses with certain tasks or areas of memory may see improvements when given a treatment plan specific to those weaknesses.

This isn't a cure, especially when patients are at the early stages of Alzheimer's or other neurodegenerative disorders. However, treatment and progress monitoring can reduce the trajectory of that

curve into illness. The last thing that we want is a steep decline from healthy cognitive function into debilitating dementia and limited cognitive function. Where possible, it is best to delay progression into the illness as long as possible. Prevention is always a better option. Starting to care for your brain early in life will reduce your risk of cognitive decline.



This solution is also viable for those with other cognitive issues. There are proven benefits of functional neurology for those with balance issues, chronic pain, headaches, other neurodegenerative conditions, and childhood neurodevelopment. The treatment of many of these conditions is all about slowing a degenerative process. Here there is the chance to correct problems and make a more lasting difference to a patient's health. These changes are possible because of neuroplasticity. This adaptability means there is always a chance to help and reverse negative changes in the brain. It is never too late to make some type of improvement, no matter the severity of the condition.

There is much potential here for anyone struggling with cognitive issues and worrying about future diagnosis. Cognitive decline could be a part of your future, but that doesn't mean you can't take steps to treat it now. Nothing about the state of the brain is permanent. We need to embrace the neuroplasticity of this incredible organ and work to improve issues while we can. Individual methods with activity levels, sleep, diet and drug use are a good starting point. A visit with a functional neurologist could then allow for the breakthrough that patients seek.

Sean Hubbard is one of only a few board-certified chiropractic neurologist in the state of Kansas. Dr. Hubbard is owner and clinician of Hubbard Chiropractic and Balance Center, LLC located in Wichita, KS. Dr. Hubbard uses a functional neurological approach to treat many neurologic conditions from performance enhancement to debilitating problems such as post-concussion syndrome, dizziness and POTS (postural orthostatic tachycardia syndrome). Many of the patients that he attends to have varying reasons and disease that are preventing them from functioning at their peak performance. He can be reached at 316.613.2011 or by email at sean@hubbardcc.com.

Lunchtime Lecture

**WEDNESDAY,
DECEMBER 13TH**

Noon – 1pm

Wichita Campus

Dr. Sean Hubbard

Cost: FREE

BRAIN HEALTH

How to Slow Down Degeneration and Improve Cognitive Performance

\$1381
\$895

Lab Special

BRAIN HEALTH PANEL

The brain uses more nutrients than any other organ. Being informed about your nutrient levels may help you to reduce your risk for Alzheimer's, memory loss, decreased cognitive skills, and strokes in the future!

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C-Reactive Protein
RBC Magnesium
Selenium
Zinc
Urine Vitamin C
Pyrroles



Lab special is valid for the month of December only. The special is open to the public and Riordan Clinic co-learners. For more information please call 316-682-3100.



AUTHOR

Anne Zauderer, DC

Holiday Stress? Slow Down and Take a BREATH!

The holidays are a joyous time to spend with friends and family. Unfortunately, with holiday parties, shopping and travel, this season can easily turn into a time of stress. The American Psychological Association (APA) reports that 8 out of 10 Americans anticipate stress during the holiday season. Increased stress can lead to unhealthy behaviors such as overeating and drinking, reduced amounts of sleep, and over-spending money.

What if you had a quick, easy way to reduce your stress? And the best news is ... it's FREE! It's simple: *slow down and take some deep breaths.*

Let's look at how our nervous system works and why we respond the way we do when we get "stressed out." When we encounter stressful situations, our bodies unconsciously respond by going into action: our heart rate goes up, breathing rate increases, our immune system is suppressed, our palms get sweaty, our pupils dilate to let in more light, our digestion decreases, and our body prepares to "fight or flight". All of these responses are a result of the sympathetic nervous system and are meant to be a short-term coping strategy to get us through the period of stress. The counter-regulatory system is the parasympathetic nervous system. This division of our nervous system is responsible for reducing stress. When it is activated, digestion and gastric secretions increase, heart rate slows down, sexual arousal increases, and our immune system increases resistant to infection. It induces a period of rest and rebuilding within the body.

We should be spending most of our time in a "parasympathetic state" where we are more at rest; however, a majority of us spend our time in a "sympathetic state," which is one of stress. How do we reverse this trend?

BREATHING! Breathing is necessary for life. A person can live months without food, about a week without water, but we would not survive even 5 minutes without oxygen. Breathing is so important that it is mostly controlled by our autonomic or "automatic" nervous system. Therefore, the brain can control our breathing so that we don't have to consciously think about it. However, one thing that is unique to breathing is we have to use our muscles to initiate breathing. Our muscles are controlled by the somatic nervous system, which is under voluntary control. So breathing is one of the few actions within the body that can be voluntary or involuntary.

When we do deep breathing exercises, we are voluntarily controlling our breath, but by deep breathing and slowing down our breath, we are inducing the body into a "parasympathetic state." As we discussed above, this encourages a state of rest, relaxation, and rebuilding within the body and helps counteract the effects of stress. Studies have shown that regular deep breathing exercises can be beneficial for pain₂, mood processing₂, stress and anxiety₃, and asthma₄.

It is important to focus on the breath coming from deep in our belly. The more stressed we get, the more we use our secondary muscles of respiration, which are located in the front of the neck. As these muscles take over, the breath gets shallower and we get less oxygen with each breath. Less oxygen when we breathe means less oxygen to our brain and all of our other organs.

Try it out for yourself!

1. Lie down on your back and put your hand on your belly.
2. Take a deep breath in through your nose while counting to five. You should feel your hand on your belly rise up if you are using your diaphragm to breathe deeply.
3. Hold the breath while you count to five.
4. Slowly start to exhale through your mouth (with your lips pursed together) while counting to ten.
5. Repeat this process five times.

As you get better at belly breathing start to incorporate this exercise throughout the day. So relax, breathe, and enjoy your holiday season!

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Homemade Chicken Noodle Soup

Prep Time: 20 Minutes

Cook Time: 2+ Hours

Serves: 6-8

INGREDIENTS

- Water
- Organic whole cut up chicken (8 pieces + backbone)
- 6 organic carrots - divided (peel and cut into 2 in pieces)
- 4 organic celery stalks - divided (cut into 2 in pieces)
- 1 large yellow onion - peeled and cut into 4 large quarters
- 1 cup roughly chopped parsley + more for garnish
- Salt and pepper - 2 Tbsp + more to taste
- 4 Rice Ramen squares or other gluten free noodles

1. Fill a stock pot about half full of water plus 1-2 tablespoons of sea salt. Bring to a boil.
2. Add all chicken parts, 3 carrots, 2 celery stalks, onion and parsley.
3. Cover and simmer for at least 1-2 hours - the longer the better (simmer ALL day if possible).
4. About 45 minutes before mealtime, remove chicken and set aside to cool.
5. Remove carrots, celery, parsley and onion. Toss the onion. You can either throw away the carrots, celery and parsley (they will be super soft) or keep them in your broth if you don't mind soft vegetables.
6. Add remaining carrots and celery (and optional parsley) and allow to simmer for 30 minutes.
7. Add salt and pepper to broth to taste.
8. When chicken is cool, remove meat from bones. Discard the bones (including the backbone) and add the pulled meat back to the broth.
9. In a separate pot, cook Rice Ramen or other gluten free noodles as directed. Set aside.
10. Add noodles to each bowl, then top with broth, chicken and vegetable.

Remember to cook your broth as long as possible to extract the maximum nutrients from the chicken. Use only organic ingredients that you know were raised or grown in a healthy fashion, and avoid baby carrots if possible, instead opting for fresh, unprocessed carrots straight from the earth!

Recipe adapted from: www.goodforyouglutenfree.com

Contact the Editor

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

Thank you for reading,



**Dr. Anne
Zauderer**
Editor

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Health Hunters Newsletter

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Essential Oils for Immune Support

AUTHOR

Katie Madill



Essential oil usage can be a dynamic healing modality that works at a cellular and molecular level as well as on an emotional and psychological level. Physically, it can be used as an immune stimulant to prevent infection and to mitigate symptoms of infectious disease. Essential oils are simple to apply and offer consistent benefits. Many lifestyle factors can weaken our immune system. Managing these areas and adopting practices that actively support the immune system is an excellent way to maintain health throughout the year.



One source of foundational health that can have a big effect on the immune system and overall health and well-being is stress management. Stress increases levels of the hormone, cortisol. It helps the body deal with stress but also depresses the function of the immune system. While all essential oils have an element of providing emotional balance, oils such as Arbovitae, Geranium, Roman Chamomile, Frankincense, Patchouli, Lavender, Sandalwood, and Vetiver are useful oils to use for grounding emotions. These oils can help reduce feelings of stress, which can help keep cortisol at a healthy level, thus supporting healthy immune function. For stress, rub 1-3 drops of oils into the palms of your hands and take at least three long, deep slow breaths. You can also rub these oils into temples and base of neck. If you have sensitive skin, or are applying to young

children, dilute essential oils with a carrier oil such as coconut oil. The bottoms of the feet are a safe, effective place to apply the diluted oils. Consider your triggers for stress, plan ahead, and diffuse or apply essential oils before stressful events occur to help manage reaction.

Another way to maintain a healthy immune system is sleep. Research has shown that inadequate sleep increases levels of cortisol in the body just like stress. Developing good sleep habits can be difficult. Incorporating essential oils such as Clary Sage, Dill, Lavender, Sandalwood, Cedarwood, and Vetiver can help promote feelings of calmness. Diffuse oils before bedtime and throughout the night or make a bedtime massage blend to rub on chest, neck, and/or bottoms of feet.

Minimizing toxic load is one of the most overlooked aspects of overall well-being. The average household contains over 60 toxic chemicals, according to environmental experts. We are regularly exposed to them from the phthalates in synthetic fragrances to the noxious fumes in oven cleaners. Ingredients in common household products have been linked to asthma, cancer, reproductive disorders, hormone disruption and neurotoxicity. Manufacturers argue that in small amounts these toxic ingredients aren't likely to be a problem, but when we're exposed to them routinely, and in combinations that haven't been studied, it's impossible to accurately assess the risks. While a few products cause immediate reactions from acute exposure (headaches from fumes, skin burns from accidental contact), different problems arise with repeated contact. Chronic exposure adds to the body's "toxic burden," which is the amount of chemicals stored in bodily tissues at a given time. Children are often more vulnerable to chemical exposure during developmental stages, and certain chemicals may interfere with the development of their neurological, endocrine, and immune systems. One of the biggest sources of toxic chemicals in a home is household cleaners. The very products that are meant to protect us from illness may actually be making us ill. According to the United

Upcoming Events

For more information or to register for any of these events, please visit [RiordanClinic.org/events](https://www.RiordanClinic.org/events)

Brain Health: How to Slow Down Degeneration and Improve Cognitive Performance

Wednesday, December 13th

12:00pm – 1:00pm @ Wichita Campus

Dr. Sean Hubbard

Cost: FREE

Join us for a conversation with Dr. Sean Hubbard, one of only a few board-certified chiropractic functional neurologist in the state of Kansas. He will be discussing some of the root causes of degeneration in the brain and what you can do to prevent it. If you have a family history of dementia, Alzheimer's, or just want to improve your memory and have better brain health, this is the lecture for you!

Women's Health Series: Balanced Hormones Throughout Your Lifetime

Wednesday, January 17th

12:00pm – 1:00pm @ Wichita Campus

Dr. Jennifer Mead

Cost: FREE

Dr. Jennifer Mead discusses what you can incorporate into your daily lifestyle and dietary habits to help with healthy hormone levels over a lifetime. These recommendations are for women suffering from irregular and difficult menstrual cycles, PCOS, endometriosis, fertility issues, and for women considering bioidentical hormone replacement therapy.

States Environmental Protection Agency, the air inside a typical home is 200–500 percent more polluted than the air outside, mainly due to toxic household cleaning products.

While no one can avoid toxic chemicals altogether, it is possible to reduce our exposure to them significantly. Research demonstrates that diffusion of essential oils can purify and cleanse the air and surfaces, providing added protection from illness. Essential oils like Lemon, Grapefruit, Cinnamon, Melaleuca, Wild Orange, and Cilantro have antibacterial, antiviral, antiseptic, antiparasitic and/or antifungal properties. The cleaners made with essential oils are safe AND effective. These cleaners use common, easily accessible ingredients that you probably already have in your home.

No matter how committed we are to a healthy lifestyle, sometimes we do get ill. In this case, there are a number of essential oils that can be used to support a compromised immune system. During this time, internal usage of essential oils is a powerful and effective route of application. Because of the way our bodies metabolize the compounds found in essential oils, it is safer and more effective to use smaller amounts of essential oil spread over consistent time intervals, rather than a single, large application. For example, rather than taking six drops of an oil in a single application, it is safer and more effective to divide those six drops across two or three applications, separated by several hours. As a general rule, adults metabolize most oils in 3–4 hours, and children in 2–3 hours. It is important to remember to exercise caution and safety when the immune system is fighting off an invasion of any sort. Some essential oils that support the health of our immune system are Cassia, Lime, Cinnamon, Marjoram, Melaleuca, Oregano, Roman Chamomile, Tangerine, Thyme, Vetiver, and Wild Orange. Taking them is simple, just add a couple of drops to a glass of water or other beverages or place a few drops in an empty veggie capsule.

Our immunity is limited to its own ability to function properly. It is important to both minimize exposure to elements that may harm our immune system and to take proactive, consistent measures to enhance the body's ability to protect itself.

References on Page 8

IMPORTANT TO NOTE:

Not all essential oils are created equal. Because there is no regulation of essential oils, many companies can falsely advertise that they're pure, 100% all natural. If taking internally, ensure the oils are from a trusted source and are indeed pure and tested as such.

Katie Madill is founder of The Wellness Roots established in 2016 in Honolulu, Hawaii. Her passion for inspiring people to seek natural solutions through the use of essential oils began after she joined doTERRA, a world leader in therapeutic essential oils, in 2015. She now lives in Wichita with her husband and two children. Contact Katie at thewellnessroots@gmail.com for more information on how essential oils can help you. You can also join Katie for an essential oils class series at the Riordan Clinic starting in January. See the events calendar or visit www.riordanclinic.com/events for more information.

FREE SHIPPING DAY

FRIDAY, DECEMBER 15TH

USE CODE FREESHIP10



For more information or to register for any of these events, please visit RiordanClinic.org/events

Upcoming Events

How To Use Essential Oils to Support Your Immune System

Friday, January 19th

12:00pm -1:00pm @ Wichita Campus

Katie Madill

Cost: \$5

In the midst of cold and flu season, come learn about essential oils that you can use to keep you and your family healthy. We will also be making healthy, peppermint hot chocolate with essential oils!

Essential Oils for Self Care

Friday, February 16th

12:00pm -1:00pm @ Wichita Campus

Katie Madill

Cost: \$5

We live in a very busy world! Take some time for yourself and learn about essential oils that you can use to care for yourself physically and emotionally. We will be making bath salts for you to take home and enjoy.

Essential Oils for Spring Cleaning

Friday, March 16th

12:00pm -1:00pm @ Wichita Campus

Katie Madill

Cost: \$5

Are you ready to make the transition away from toxic chemical cleaners in your home? Does it seem daunting to make your own cleaners? Come learn which essential oils you can use to make your own cleaning products. You will be saving money and doing your body a favor! We will be making a foaming hand soap for you to take home with you.

12 Months to a Healthier You!

Month 12: Making Sustainable Changes

AUTHOR

Anne Zauderer, DC



For those of you who have been following along with this article series and, even better, for those of you who have implemented some of the changes, congratulations! Making changes in our lives is hard. Making habits out of those changes is even harder.



Most of us desire self-improvement. In fact, 40% of Americans will make a New Year's resolution in January; however, only 8% will achieve their New Year's goal. Why is it so difficult? The key to making our changes sustainable is to develop habits. Until a "change" is a habit, we have to expend a lot of will power to follow through. Most of us only have a limited amount of will power to expend. If our goals are too lofty or complicated, we run out of will power and give up.

For example, if you want to set a goal to start walking every day, the best way to do this is to set a simple goal. Start by walking 15 minutes every day. Decide that *no matter what*, you will get your 15 minutes of walking in daily. Initially you are going to have to "will" yourself to put your tennis shoes on and get outside. You will probably be tired from your walks. However, after a few weeks that daily walk becomes part of your daily routine. Soon, your habit of walking is so strong that your day will feel "off" if you don't get a walk in! Eventually your 15 minutes of walking will turn into 30 or 45

minutes of walking. You will identify yourself as a regular "walker" or someone who exercises daily. Your friends and family will be impressed and you will start to motivate others to make changes.

A few other strategies to help turn short-term changes into long-term habits are:

1. Start small and choose one thing at a time.
2. Make your goals specific and measurable. Be able to track your success so that you can celebrate small milestones.
3. Make your goals public so that you can have accountability and encouragement from your community.
4. Don't just add new changes, replace old ones. For example, replace 15 minutes of time on social media with 15 minutes of walking.

If you aren't sure about goals for the New Year, below is a review of each of the topics we've covered this year. Start with one, small change! You can find old editions of Health Hunters at riordanclinic.org/health-hunters-news to read the full articles.

1. Drink only water
2. Exercise
3. Avoid food additives
4. Avoid the Standard American Diet (SAD)
5. Go organic
6. Eat the colors of the rainbow
7. Fuel yourself with healthy fats
8. Cultivate healthy bacteria
9. Cut the sugar
10. The power of positive thoughts
11. Quality sleep



If you have successfully implemented any of the changes above, I want to hear your story! Email me at editor@riordanclinic.org and tell me about your journey.

Continued from Page 7

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