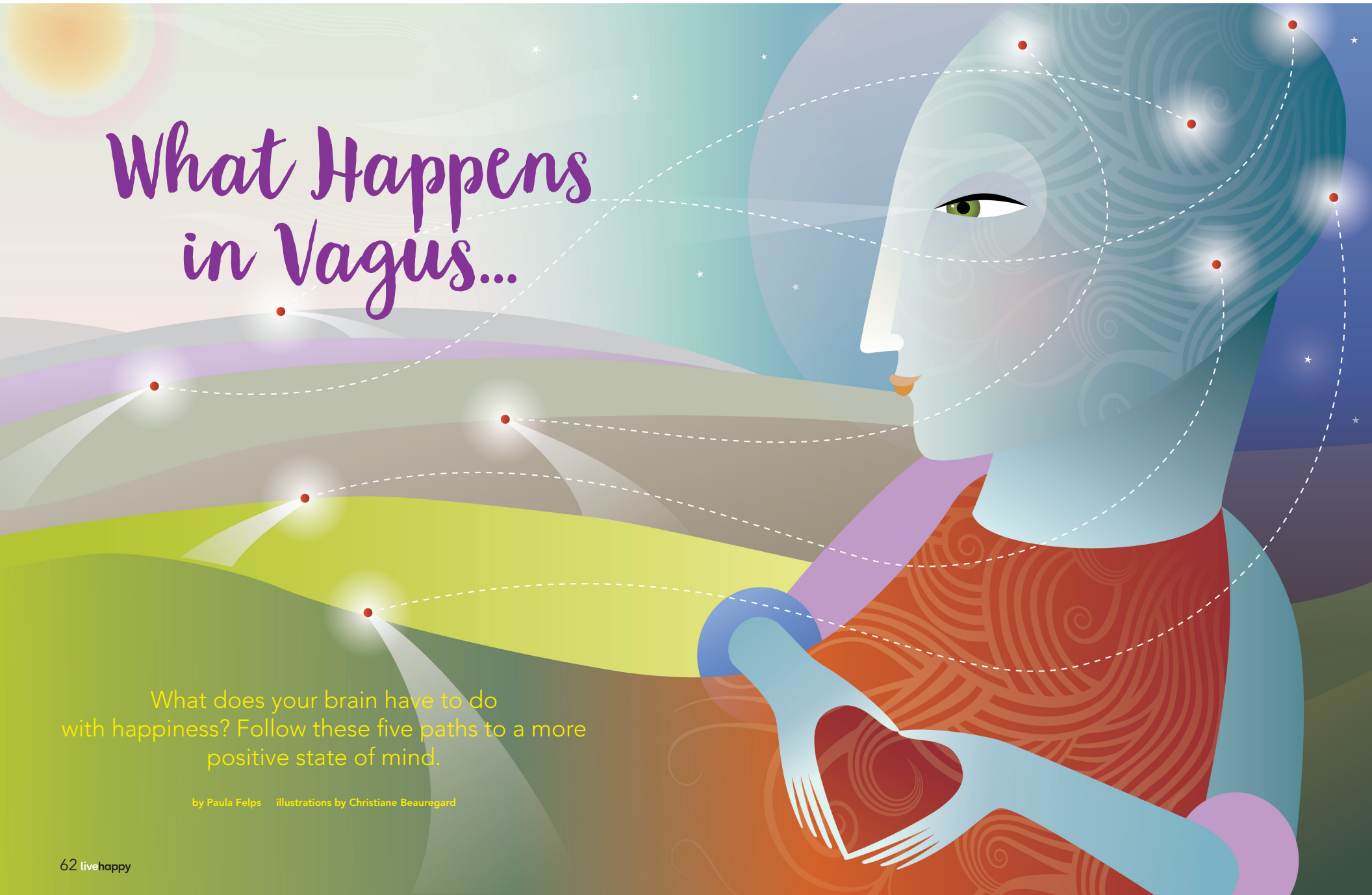


What Happens in Vagus...

What does your brain have to do with happiness? Follow these five paths to a more positive state of mind.

by Paula Felps | illustrations by Christiane Beauregard



If you think happiness is all in your mind, you're on the right track.

"The mind is an expression of brain function," explains Daniel Amen, a psychiatrist and 10-time New York Times best-selling author.

How your mind and brain interact is crucial to happiness, so Daniel is on a mission to make people more aware of how to better care for their brains.

"The idea is to get people to fall in love with their brain, then create a plan to take care of it. We want people to love their brains the way a parent loves a child—to be loving, thoughtful and responsible about caring for it."

To do that, we have to understand more about how the brain works and what role it plays in our happiness.

A key player in the equation is the vagus nerve, that large nerve that starts in your brain and runs throughout your body. Often called "the love nerve" because it's interconnected with our oxytocin networks, it helps us communicate and empathize with others. When we take a deep breath and our heart rate slows, that's the vagus nerve in action. It counteracts inflammation, improves memory and bolsters our body's immune function.

People with stronger vagal nerve responses have better connections with others and stronger social support networks; they are compassionate and tend to experience more positive emotions than those with weaker vagal nerve responses, according to Dacher Keltner, author of *Born to be Good* and faculty director of the Greater Good

Science Center at the University of California, Berkeley.

Regardless of where you are in your happiness journey, you can improve your brain function—and boost your level of happiness—with a few simple tweaks.

Meditation: Something to Think About

Meditation has certainly earned its reputation as a powerful tool for cultivating a sense of calm, compassion and happiness.

"Meditation activates the pre-frontal cortex, which is the most human, caring part of our brains," Daniel says. "It can calm the limbic emotional structures in your mind. People think it will be hard and they can't do it, but it's not...and there are so many benefits to it."

Research shows that an active meditation practice can help with emotional self-regulation and improve focus. It can lead to higher functioning of the brain and central nervous system, reduce anxiety and depression, protect us from cognitive decline and even reduce certain biological markers of disease progression.

Meditation also increases vagal tone, which affects how well we connect with others. And, according to a study led by Barbara Fredrickson, Ph.D., of the University of North Carolina, Chapel Hill, the greater the vagal tone, the lower the risk for cardiovascular disease and the stronger our immune function.

It can be done for as little as five

minutes a day simply by taking a moment, taking a deep breath and calming oneself.

In his book *Change Your Brain, Change Your Life*, Daniel suggests using a loving kindness meditation, particularly if you are new to meditation and have concerns about staying focused. This simple practice begins by sending loving wishes to yourself, then to individuals you care about, then to people you don't like. It can increase positive emotion and aid in forgiveness.

"It's a good way to increase positivity, decrease negativity and prejudice, and you can do it easily," he says. "It takes all the power of meditation and pours loving, positive thoughts into it. It's extremely powerful."

Meditation Hacks:

- 1. Give it three weeks.** Sign up for a free 21-day online course of your choice to get in the habit of meditating every day.
- 2. Get appy.** Download a meditation app, such as Buddhify or Headspace, to help guide you through meditations.
- 3. Take a hike.** Try a walking meditation. Leave the phone behind, walk outside and mindfully notice the sights, sounds and scents of nature.
- 4. Enlist your dog (or cat or bunny or hamster).** Petting a beloved animal is perhaps one of the most enjoyable meditations you can practice. Focus on the act of petting the animal and





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slow your breath; both you and your pet will receive a flood of feel-good endorphins.

5. Schedule it. Putting time for meditation on your calendar makes you more likely to follow through.

Sleep: We're Just Not Getting It

It seems we spend more time talking about what we're doing in bed than we actually spend doing it.

Thousands of books have been written about today's sleep-deprived world, and no fewer than 150 medical journals are devoted to the topic of sleep and sleep disorders. The bottom line? Losing shut-eye has a direct effect on our happiness.

Research by Matthew Walker, Ph.D., a neuroscientist at the University of California, Berkeley, found a sleep-deprived brain quickly reverts to primitive behavior and makes our emotional behavior irrational. He also found that sleep loss affects memory and learning, and impedes the immune system's ability to repair itself.

"Sleep is restorative," explains Joseph Cardillo, Ph.D., author and research associate at the Mind-Body Science Institute International. "We need it to control our happiness. If we don't get enough sleep, or the right kind of sleep, we wake up anxious or with a jumpy energy."

Whether or not our vagus nerve is getting sufficient stimulation directly affects how well we sleep, according to

Mladen Golubic, Ph.D., of the Center for Lifestyle Medicine at the Cleveland Clinic. That's because a stimulated vagal nerve releases anti-stress hormones that make it easier to get a good night's sleep. (You can stimulate it through deep breathing for about 10 minutes.)

Setting the stage for your mind to get a good night's sleep affects the quality of the sleep you get, too. That's why watching the evening news or a violent movie right before hitting the hay isn't a great idea.

"If you fill your mind with anxiety-producing ideas, it's working with stressful information while you sleep, so you aren't getting the kind of psychological restoration you need," Joseph says. He adds that studies show simply reading something with meaning can help us feel more "virtuous" and put us in the right frame of mind to fall asleep. As a result, we'll wake up feeling healthier and happier the next day.

Sleep Hacks:

- 1. Keep it cool.** Your body's temperature drops when you sleep and this lowered temperature helps induce sleep.
- 2. Write it out.** Expressing your feelings in a journal instead of taking them to bed with you can cut down on the tossing and turning.
- 3. Go dark.** LED clocks and digital devices send out lights even when they're technically turned off, and that can keep you from falling asleep. Pull the plug, cover the light with tape, or do whatever it takes to get rid of the glare.

4. Sound it out. Listening to a soothing soundtrack can help you relax and fall asleep faster.

5. Breathe. Deep belly breathing before going to sleep helps your entire body relax.

Food: Starved for Happiness

Food choices play a huge role in our overall health, but most of us aren't thinking about brain cells when we sit down to eat. As the main source of communication between the stomach and the brain, the vagus nerve plays a substantial role in the digestive process as well as in how we react to food choices.

When the vagus nerve is out of whack, it can lead to digestive disorders or even conditions like anorexia and bulimia. In studies, individuals with stimulated vagus nerves were less likely to experience food cravings or overeat.

"Most people simply haven't considered how much food affects their emotional health," explains Drew Ramsey, psychiatrist and author of *Eat Complete*. "People think there's a single food they should add to their diet or stop eating that's a miracle cure, but that's not the case. It's about your overall dietary patterns."

Eating for happiness means giving both your brain and your body what they need to function at their optimum health. We require certain nutrients to function at our best.

“Omega-3 fats, zinc, magnesium and vitamin E are all critical brain nutrients that the majority of Americans aren’t meeting the recommended daily allowance (RDA) for,” Drew says.

And that’s taking its toll. A diet high in processed foods and sugar is linked to mood disorders; a 2014 study led by Australia’s Felice N. Jacka at Deakin University (she is now also an honorary research fellow at the University of Melbourne) showed that subjects with an unhealthy diet were predisposed to develop depression. And a New Zealand study published in the *European Journal*

of Clinical Nutrition found a solid link between a high-quality diet and positive emotional health in students.

“Food is the most clear modifiable risk factor for both depression and dementia,” Drew says. “When you have low levels of B-12 and omega-3s, your brain shrinks faster. Once you start making changes, you feel it. You are less sluggish, you sleep better, you feel better.”

Repeatedly consuming the wrong foods leads to a chronic state of inflammation that contributes to disease. Making healthy changes to

your diet can power up your immune system, keep your brain firing on all cylinders and make you feel happier.

“The great thing is, it’s something you get to work on every day at every meal,” he says. “And it has a cumulative effect. When you end a week where you’ve made good food decisions, your brain is better nourished and you’re happier. It’s like night and day.”

Food Hacks:

1. Get fat(s). The right fats are crucial for a happy, healthy brain. (Think olive oil, coconut oil and omega-3s.)

2. Eat a rainbow. Add colorful fruits and vegetables to your diet...not just every day, but every meal.

3. Keep it natural. Today’s foods are loaded with dyes, preservatives and trans fats that are bad for our waistlines and even worse for our brains. Avoid them.

4. Get nutty. Nuts are linked to higher levels of serotonin, which makes you feel calmer and happier.

5. Go fish. Seafood is loaded with healthy omega-3 fats as well as B-12, selenium, iodine and more.

Language: What Are Words For?

We use words every day. We read them, speak them, sometimes shout them; what we’re failing to do, says Jeffrey Gignac, is think about them.

“We overuse or misuse words because we don’t understand what they do,” explains Jeffrey, an expert in brainwave entrainment, which uses sound, light and electrical impulses to stimulate the brain into entering a specific state. “In recent years, neuroscience has [recognized] how language can program the subconscious brain. The role of the subconscious mind is to follow the direction of the conscious mind.”

Learning to talk to our subconscious in healthy ways helps redirect the mental chatter that occurs in the backgrounds of our minds, regardless of whether we’re aware of it or not.

Watching what we say and learning to put a positive spin on our language patterns can make the difference in the direction our thoughts and conversations go.

“A lot of language has to do with intention, the order of words and emotionality,” he says. “The way you choose your words changes the entire feeling about it.”





Try using mint, eucalyptus and citrus scents to energize and uplift you.

In their book *Words Can Change Your Brain*, authors Andrew Newberg, a neuroscientist, and Mark Robert Waldman present research showing that positive words like “peace” and “love” promote cognitive functioning and strengthen the frontal lobe of the brain. Since the vagus nerve responds to our thoughts—and therefore our words—the use of positive words empowers it to send positive messages to our heart as well as our head.

On the flip side, a single negative word sends the amygdala—also known as the brain’s fear center—into overdrive, releasing disruptive stress hormones that can shut down the logic and reasoning centers of the brain.

We can offset some of the effects of negative language by holding in our minds a positive or optimistic word, which helps stimulate that happy, healthy frontal lobe activity. However, the first step, according to Jeffrey, is to understand the power of words and evaluate their use more carefully. Are you *really* dying to find out how that TV show ends? Is it *truly* killing you?

Think about it and then decide if that’s the message you want your brain to send out to the rest of your body.

“If people really make language important and start thinking about the effect it has on them and the people they’re interacting with every day, they can make monumental changes very easily,” Jeffrey says. “One of the biggest components of fear and anxiety and negative thinking is language.”

Language Hacks:

Five words to lose from your vocabulary, and why:

- 1. But.** When we hear “but,” our minds automatically negate what was said before that.
- 2. Should.** This pressure word can be interpreted as judgmental, and puts others on the defensive.
- 3. You.** Sure, this is an important pronoun, but when it’s used improperly it can quickly make other people feel like they have to defend themselves.
- 4. Need.** Another pressure word that triggers the fight or flight response in our brains.
- 5. Try.** Yoda said it best: “Do or do not. There is no try.”

Smell: Scents and Sensibilities

All five senses contribute to our overall well-being, but smell is the first to get the brain’s attention.

“Scent hits our memory banks faster than anything else,” explains Joseph Cardillo, Ph.D. “It’s the fastest-moving sensory detail we have.”

That’s because we have 5 million to 6 million cells in our nasal passages standing by for one purpose: to detect odors. When we smell something, our brain processes it for taste and memory, while the vagus nerve sends an immediate signal to the stomach. Our physical reaction to scent is so powerful that studies have even used scents to

control vagal activity as a means of regulating such things as blood pressure, body temperature and appetite.

This chain reaction to smell happens in a millisecond and, before our brain can even process the name of the scent, it has already triggered our limbic system, causing an emotional reaction. If there’s a strong memory associated with the smell, the effects are even more dramatic.

“Scents connected to the holidays are very powerful because we associate them with other holiday memories,” Joseph says. “Or if my wife wears the cologne she wore when we first started dating, it’s an aphrodisiac.”

He says once we understand the power of smell, we can use it to boost our well-being.

Studying for an exam with a certain scent in the room boosts our ability to memorize facts, research shows, and today more science is focusing on the effects of scent and how it can be used to regulate emotions. One Japanese study found that inhaling essential oils could help us relax. Joseph says that’s a simple but powerful tool to have on hand.

“Say you’re heading into traffic and know you get stressed out by it; you can use scents that calm you down in the car,” he says, suggesting that people experiment individually with different scents in non-stressful situations to discover how they react.

“As you get used to using scent to ramp up or calm down, it will work faster each time, because of the memory component,” he explains. “You’re creating new circuits in the brain and

literally changing the way your brain operates in those situations.”

Scent Hacks:

- 1. Create a scent “cheat sheet”** to know what works for you.
- 2. Use scent to boost your learning power** for work or school by diffusing a certain smell...then smelling it again immediately before making your presentation or taking a test.
- 3. Try using mint, eucalyptus and citrus scents** to energize and uplift you.
- 4. To calm down** in a stressful situation, try using wood scents or lavender.
- 5. Since scent and memory are so closely connected**, intentionally use scents to “lock in” a new memory of something positive. You’ll then be able to revisit that new happy memory in an instant with a single whiff.

Daniel Amen suggests we make “doing the right thing for our brains” our top priority. He and his wife, Tana Amen, in November will release the book *The Brain Warrior’s Way*, which looks at how to boost your brain to improve your health, energy and mood. He says the time has come for us to rethink the role our brains play in our overall well-being and to start taking them seriously.

“For a long time, nobody cared about brains because they couldn’t see them,” he says. “You can see wrinkles in your skin or fat around your belly; you can’t see what’s changing in your brain. But it’s the black box for everything else that’s happening inside of you.”