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Natural Health Response
WITH DR. RICHARD GERHAUSER M.D.

Dr. G's Depression-Busting Protocol

5 Steps for Increasing Your "Happy Hormones"

Richard Gerhauser, M.D.

Editor, *Natural Health Response*

Do you know what makes me depressed?

The number of depressed people in the US.

About one in six Americans are on antidepressants—which is more than any other country in the world.

But when I consider this epidemic, I don't see people who are deficient in *antidepressants*.

I see people who are deficient in two brain chemicals that are essential for your mental and emotional wellbeing.

And while most doctors are quick to whip out their prescription pad, I've found that taking steps to naturally boost these "happy hormones" produces better, more lasting results.

So here's a better prescription to follow: My **5 simple steps** for boosting your beneficial brain chemicals—and feeling your best.

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Dopamine and serotonin promote feelings of happiness and pleasure.

The Dynamic Duo for Better Mood

Dopamine and **serotonin** are *neurotransmitters*, which are signaling molecules that allow brain cells to talk to one another.

They've also earned the nickname "happy hormones" because they promote feelings of happiness and pleasure while actively suppressing anxiety and depression.

If you don't have enough dopamine and serotonin, your mood and emotional wellbeing will suffer as a result.

Symptoms of low **dopamine** include lack of motivation, feeling tired, poor concentration, anxiety, loss of pleasure from previously enjoyable activities, depression, low sex drive, sleep problems, and short-term memory problems.

Low dopamine levels also contribute to the symptoms of Parkinson's disease (tremor, muscle rigidity, muscle cramps, loss of concentration).

Serotonin is also involved in emotions and it helps regulate digestion as well as metabolism.

Serotonin is concentrated in the brain regions known to regulate social cognition and decision-making. These regions have selectively been called "the social brain."

Serotonin deficiency is seen in

depression and anxiety, as well as in autism, Down's syndrome, anorexia, aggression, alcoholism, sexual dysfunction, and seasonal affective disorder.

5 Steps for Beating Depression

If you're experiencing symptoms of depression or anxiety, you could join the millions of Americans already taking antidepressants.

Or…

You can get to the ROOT CAUSE of this common issue by boosting your body's production of the "happy hormones."

If you choose option B, the best way to accomplish this is by following my **5-step depression-busting protocol**.

Step 1: Add Amino Acids

The first step in boosting serotonin and dopamine is giving your body what it needs to make them.

Certain dietary **amino acids** are precursors for serotonin and dopamine synthesis in the body.

For **serotonin**, the precursor is *tryptophan*. Tryptophan is abundant in the following foods:

- Salmon
- Turkey
- Milk
- Bananas
- Eggs
- Spinach
- Seeds
- Nuts

For **dopamine**, the precursor amino acid is *tyrosine*.

Foods rich in tyrosine include the following:

- Chicken
- Almonds
- Apples
- Avocados
- Bananas
- Beets
- Chocolate
- Lima beans
- Oatmeal
- Oranges
- Peas
- Sesame seeds
- Pumpkin seeds
- Tomatoes
- Turmeric
- Watermelon
- Wheat germ

Step 2: Get More Sunlight

Dopamine and serotonin rely on enzymes for their production: *Tyrosinase* for dopamine and *tryptophan hydroxylase* for serotonin.

Neurotransmitter Testing

Currently, there is no easy way to test your levels of dopamine or serotonin.

Blood tests are not a reliable way to monitor the levels. No research has shown that measuring serotonin levels in the blood—or even their breakdown products in urine, for that matter—correlate to any disease (other than carcinoid tumors).

I've also found that neurotransmitter testing typically leads to taking supplements as a solution. But this is a complex issue, and you have to consider the negative and positive feedback loops that might be disrupted by supplementing just one piece of the puzzle.

Instead, I prefer to treat the whole person with lifestyle and environment changes.

However, if you still want to pursue testing to get a baseline of your levels, then I'd also recommend consulting with a professional. Find someone who has long-term experience with these types of tests, and who can also work with you on what steps to take after you get your results.

And in order for these enzymes to be *activated*, cells require exposure to **sunlight**.

You see, enzymes work through the quantum mechanism of proton tunneling. For proton tunneling to function optimally, the cells require exposure to **near-infrared** (NIR) light contained in sunlight, which

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1-844-802-5375
or Feedback@NaturalHealthResponse.com
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“Studies show that natural light exposure increases serotonin, while the lowest serotonin levels are found in the late winter months.”

makes water a semiconductor.

Dopamine is first made in the eye from the stimulus in sunlight.

And most serotonin is made in the gut with the *photo-activation* of the essential amino acid tryptophan.

When light enters the retina of the **EYE**, it stimulates the **suprachiasmatic nucleus**, which is the master clock of the circadian mechanism. This influences both serotonin and serotonin receptors.

Exposing your **SKIN** to the sun is also important for increasing serotonin levels. Since the skin's origin embryologically is the same as the central nervous system, your skin contains all the machinery necessary to manufacture serotonin.

Studies show that natural light exposure increases serotonin, while the lowest serotonin levels are found in the late winter months.

Step 3: Boost Omega-3s and Vitamin D

In addition to having adequate *amounts* of neurotransmitters, you also need to make sure they're functioning properly.

Vitamin D is found in eggs, fatty fish, and mushrooms.

Two critical components for normal neurotransmitter *function* are **omega-3 fatty acids** (EPA and DHA) and **vitamin D**.

Vitamin D and omega-3s control serotonin and dopamine synthesis and action.

For example, DHA contains a π electron cloud that interacts with light (photoelectric effect). This generates an electrical current, which our cells utilize for normal functioning.

Vitamin D is created from the photo isomerization by ultraviolet B light of seven hydroxy cholesterol, which converts it to vitamin D.

EPA and DHA are abundant in cold water fish and other seafood.

Vitamin D is found in eggs, fatty fish, and mushrooms. And as I mentioned above, your body also makes it from direct exposure to sunlight.

Step 4: Consider Lifestyle Factors

Lifestyle factors that improve neurotransmitter *function* include regular exercise, reducing stress, and getting optimal sleep.

Good gut health is also an important component of neurotransmitter function. Light is released by bacteria in the gut when we eat, which is critical for making serotonin during the day.

This is another reason why I advise not eating after sunset when we want the gut quiet.

For a healthy, diverse microbiome, work on improving your circadian mechanisms, eating fermented foods, and/or taking probiotics.

Finally, avoid artificial light (especially at night). Blue light activates MAO-B, an enzyme that lowers dopamine.

It also disrupts the circadian mechanism, which disrupts sleep when the receptors for dopamine and serotonin are regenerated.

Did You Know?

Low dopamine impacts more than just your mood.

Dopamine controls normal growth of the eye, and lack of dopamine leads to an elongation of the eyeball.

This is at the root of our current myopia or nearsightedness epidemic.

Step 5: Take Targeted Supplements

The following supplements may increase **serotonin**:

- Tryptophan
- 5HTP
- St. John's wort

The following supplements may increase **dopamine**:

- **Cordyceps mushroom** enhances the expression of the tyrosinase enzyme.
- **Acetyl-L-Carnitine** is an acetylated version of the amino acid carnitine. There is evidence showing that it has neuroprotective, neuromodulatory, and neuroregenerative effects. It has also been shown to help memory and learning in cases of cognitive impairment, brain injury, or cognitive decline due to aging.
- **Sulbutiamine** is a bioavailable form of thiamine (vitamin B1) that crosses the blood-brain barrier better than thiamine. (It is made up of two thiamine molecules and a sulfur group.)
- Research suggests that sulbutiamine modulates the dopaminergic, cholinergic, and glutamatergic transmission systems, while upregulating D1 and D2 dopamine receptors.

The Hidden Dangers of Melatonin Supplements

A Safer Way to Get Better Sleep

I recently saw an article showing that the use of supplemental melatonin **quintupled** from 1999 to 2018.

Would you believe people spend nearly one **BILLION** dollars a year on this natural solution for better sleep?

You might think I'd be cheering the use of a supplement over a pharmaceutical drug.

Not this time.

While melatonin *is* critical for optimal sleep, getting it through supplements can cause more harm than good.

I'll show you how you can get all the melatonin you need for better sleep—*and better health*—without spending a dime on a single supplement.

Sunlight is necessary for the production of melatonin.

More Than Just the "Sleep" Hormone

Melatonin has traditionally been known as the "sleep hormone."

A melatonin deficiency can contribute to problems falling and staying asleep, while boosting its levels can help stimulate better sleep.

But good sleep is just the beginning of melatonin's health benefits.

Melatonin's numerous effects include:

- cell regeneration (especially all photoreceptors that are damaged by light)
- stimulating immune function
- controlling inflammation
- controlling mitochondrial energy output
- protecting cell membranes (including lipids and proteins)
- controlling apoptosis (cell suicide)
- protecting DNA from damage (both the mitochondrial DNA and nuclear DNA)

Your Cells' Bodyguard

Melatonin is a potent **antioxidant** that scavenges a variety of free radicals, such as hydroxyl radical, hydrogen peroxide, singlet oxygen, nitric oxide, peroxynitrite, and others.

Melatonin also *stimulates* some of your body's most powerful antioxidant enzymes. These include big hitters like superoxide dismutase, glutathione peroxidase, glutathione reductase, and catalase.

As such a powerful antioxidant, one of melatonin's most important jobs is to act as a **bodyguard** for the 13 genes contained in the mitochondrial DNA of our cells.

These genes code for the wiring diagram for your cellular engines.

Mutations in mitochondrial DNA are three times more common than in the DNA in the nucleus of the cell.

This is a major problem for your health because these mutations *impair mitochondrial function*. This problem has been termed **mitochondrial heteroplasmy** by the godfather of mitochondrial research, Dr. Doug Wallace.

Based on his extensive research, Dr. Wallace has proposed that over **80 percent of our modern diseases** that are now epidemic—and resistant to modern therapies—are caused by this brownout in our mitochondria.

In other words, our health problems are really a *power* problem.

One critical way to prevent it?

Make sure you're loading your body with a healthy dose of melatonin.

The Problem with Supplemental Melatonin

With melatonin's long health resume, I can understand why people would think that supplemental melatonin could be a quick fix to slow aging, reverse disease, and help sleep all at the same time.

But if you've been tempted to jump on the melatonin supplement bandwagon, it's time to hop off.

Published animal research shows that supplemental melatonin can DESTROY your vision.

First, it's been shown to damage the cone photoreceptors in the eye (these are responsible for daytime vision).

It can also cause thinning of the retina, a key part of your vision that creates the images you see.

And a study in humans showed that supplemental melatonin increased glucose intolerance in the morning and evening. This means the supplement could cause changes in your body that increase your risk of type 2 diabetes.

My concern is that, in complicated systems like the human body, it is hard to just add a single compound without upsetting the delicate balance of everything else.

With more research, there may come a time when supplemental melatonin used in specific instances might be helpful.

Until then, the best way to boost your melatonin is Nature's way.

> "Animal research finds supplementing with melatonin could destroy your vision."

Rethinking the Hormone of "Darkness"

In addition to being called the "sleep hormone," melatonin has earned the nickname "hormone of darkness" because it is *released* from the pineal gland in the evening to stimulate sleep.

While some of it is also made in the pineal gland, the vast majority of melatonin is made in the mitochondria in the cells.

And can you guess what **single factor** is necessary for the production of melatonin in your cells?

LIGHT!

The science of **optics** has "shed light" on this subject by using techniques such as three-dimensional bio-optical models of the skin and brain based on nonsequential optical ray tracing and electron spin resonance data.

These complex techniques have revealed that two types of light are key for melatonin production: **ultraviolet light** and **near-infrared** (NIR) light.

Here's how it works:

Ultraviolet and near-infrared (NIR) light stimulate the release of **nitric oxide** in the arterioles in the skin, which causes dermal pooling of blood near the surface.

This process brings molecules like hemoglobin, porphyrins, and aromatic amino acids like tryptophan to the surface to **absorb** light.

Once tryptophan absorbs the UV light, it distributes the captured light to the rest of the body, where it is later released. (This has been shown in Roeland Van Wijk's and other scientists' work on biophotons.)

After that, the UV light is expressed by the microbiome in the gut to allow the conversion of tryptophan to serotonin.

Melatonin, ultraviolet light (UV), and near-infrared (NIR) light play essential roles in maintaining your circadian clock.

Next, serotonin is transported to the **pineal gland**, where cells release extreme low-frequency UV light (ELF-UV, biophotons).

This catalyzes the final steps of converting serotonin to melatonin.

The bottom line?

Sunlight is necessary for every step of the process in the production of melatonin.

How Modern Living Causes Sleep Problems

Our ancestors were exposed to natural sunlight all day, every day.

And for over 600,000 years, they gathered around the campfire in the evening, which gave them a big dose of NIR light before sleep.

I bet they slept GREAT.

Unfortunately, the modern world *subtracts* these critical frequencies of light that control life's processes.

Modern lighting and window coatings **cancel** NIR and UV light frequencies that are critical for melatonin production.

And melatonin is **destroyed** when your eyes are exposed to blue and green frequencies after dark (like

the kind that comes from your TV, computer, and phone).

Put simply, modern living prevents melatonin from being produced, to begin with, then destroys the little that's there. This is the reason I'm such a stickler about avoiding artificial light at night.

It's also the reason why society is facing a sleep crisis epidemic.

No one is exempt from the negative health outcomes caused by subtracting the sun's light from our lives.

I learned the hard way by becoming sick myself. The average medical doctor's lifestyle is one of the worst regarding bad light, and I had to take drastic steps to fix my environment.

More Melatonin, Please

The best way to improve melatonin's many beneficial functions is to expose your eyes and skin directly to the sun throughout the day, and to block man-made light at night.

Every morning, you should be outside with your skin and eyes exposed to the sun right after it rises.

At this time of day, the light is mostly **near-infrared light** (NIR) and blue light.

Near-infrared light penetrates deeply into the body. It can even penetrate the scalp and skull to enter the brain. Once there, it charge-separates water to make it life's battery.

In addition to increasing cellular melatonin synthesis, NIR improves mitochondrial function and increases melanin production (your skin callous, aka, your healthy summer tan).

Getting NIR in the morning acts like an SPF 15 sunscreen: It protects you from sunburn and increases tolerance to sunlight.

The UV frequencies that come later in the morning help to complete this process. The blue light also sets the master circadian clock.

Follow these steps, and you won't need a controversial melatonin supplement.

All the melatonin you need will be produced in the precise amount necessary to maintain or restore health—and to put you on the right track to a better night's sleep.

Should You SKIP Your Annual Mammogram?

The European Test That's Safer and More Accurate

Most women dutifully get their annual mammogram because they've been told it's the best way to beat breast cancer.

But what if it isn't?

Would you still get a mammogram if it didn't add to the quality or *quantity* of your life… yet **increased** your risk of getting CANCER in the process?

Sounds bleak, but that's the **reality** of mammograms—and it's why I don't recommend them to women with an average risk of cancer.

I DO advocate breast screening, but I've found something BETTER.

Compared to mammograms, it detects breast cancer *earlier*, it's *safer*, it's *more accurate*, and (most importantly) **it has a higher survival rate**.

A large study of nearly 90,000 women found mammograms did not reduce deaths from breast cancer.

No Benefit to Mammograms

First, I want to make it clear that getting screened for breast cancer is very important.

Breast cancer is currently the **second leading cause of cancer death** in women. It is estimated that 12.9 percent of women born in the US will develop this disease in their lifetime, and that about 42,000 women still die each year

The Big Business of Cancer

I probably don't need to remind you that the cancer industry is big business.

There is a conflict of interest with radiologists, breast surgeons, gynecologists, hospitals, pharmaceutical companies, pink ribbon groups, mammogram manufacturers, and the list goes on.

The system has found the best way to get our money: offer rounds of treatments for a deadly illness and make sure health insurance pays for it.

The more cancer patients there are, the more the industry grows its profits.

This results in a big incentive to continue the meme that mammograms save lives.

The patient with the deadly disease is a gift to the system, and it's a gift that keeps on giving.

I try to remain positive about a better test being confirmed and implemented in mainstream medicine.

But I have 40 years of frustration with the centralized medical system in the USA under my belt... so I'm not holding my breath.

from it.

Identifying and treating cancer early is the best way to have a positive outcome.

But mammograms aren't your *only* option—and they're certainly not your **best** option.

Consider this:

A large study of over 89,000 women showed that:

1. Having a mammogram did not reduce mortality from breast cancer.
2. 22 percent of all invasive breast cancers were over-diagnosed.

Another study found even *higher* rates of over-diagnosis.

Over-diagnosis means that the women were treated for a low-risk tumor that would not have caused symptoms in their lifetime.

This is a big problem – see *every* tumor found with a mammogram must be treated, regardless as to whether treating it is the best option or not.

In another review, researchers found that, for every 2,000 women screened with mammography over a 10-year period, only one woman will have a longer life.

One.

The rest of the women don't fare so well.

Ten will be misdiagnosed and treated unnecessarily, and another 200 will end up with a false positive.

CAUSING Cancer?

But it gets worse.

Worse than being ineffective or inaccurate, **mammograms can *cause* the very cancers they're attempting to detect.**

Published research has estimated that the annual screening of 100,000 women aged 40 to 74 years was projected to induce **125 breast cancers** leading to **16 deaths**.

You see, every time you get a mammogram, you're zapping your sensitive breast tissue **with massive amounts of ionizing radiation, *a known cancer-causing agent*.**

Mammograms expose you to more radiation than a chest x-ray!

One study showed that high-risk women who are exposed to radiation have a **1.5 times greater risk** of developing breast cancer.

It's no wonder studies show that women who get mammograms don't live longer than those who don't.

> "Mammograms aren't just ineffective or inaccurate, they can cause the very cancers they're attempting to detect!"

For every one woman saved by early detection, countless more are exposed to the radiation that will ultimately kill them.

The Power of Thermal Vision

My No. 1 recommendation for breast screening is the same one used in Europe, Canada, and Australia for routine screening.

It's been around for nearly 40 years, and almost 1,000 studies have been done on it.

It's called **digital thermography**.

It measures infrared heat from your body, and detects changes in breast tissue over time.

You see, tumor cells have increased glucose metabolism compared to normal cells. This creates neo-vascularization, which brings greater blood flow to the area.

This produces more thermal energy in these tissues that can be seen using an infrared detector or camera.

The result is a safe, painless, and accurate screening for potentially cancerous changes in the breast.

The Most Accurate Test on the Market

Unfortunately, many thermography studies don't give a clear picture of its benefits because the screening itself hasn't been standardized.

Many different machines are available, and there is variability in interpreting the findings.

However, a study was recently published that included standardization of the area visualized. An interpretation was done using Deep Machine learning technology and by limiting the tissues visualized by the scan to only the breast tissue.

The result was the MOST ACCURATE study to date, and it showed that thermography had:

- **99.3% accuracy**
- **100% sensitivity**
- **98.6% specificity**

In statistics, *sensitivity* is the percentage of the probability of a positive result, and *specificity* is the rate of the true negatives (no disease).

Said another way, 100% *sensitivity* would mean that all the patients with breast cancer are identified.

And 100% *specificity* would mean there are no false positives.

No missed cancers, and no false positives. *And no cancer-causing ionizing radiation, to boot.*

This substantially eclipses mammogram results, which have been reported to have a sensitivity of 85% and a specificity of 90%.

With results like these, I still hold out hope that thermography will eventually replace mammography for yearly breast cancer screening.

However, large clinical trials using Deep Learning techniques (like we have for the negatives of mammograms) have not been conducted yet in order to fully prove the use of thermography for breast cancer screening.

So it could be a while before the mainstream medical community gets on board.

In the meantime, another option is to get an annual breast exam combined with imaging such as ultrasound or MRI.

It's important to note that digital thermography can't diagnose cancer, but what it can do is *safely* tell you if something suspicious is going on.

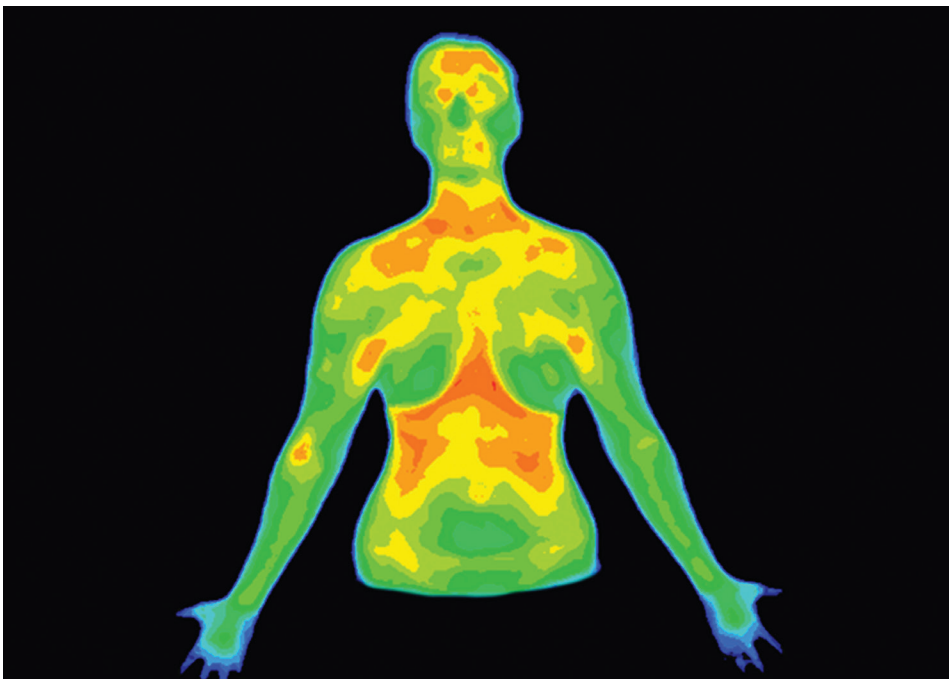
Then—and only then—do I recommend getting a mammogram.

The bottom line is if it's something I wouldn't recommend to my wife, I wouldn't recommend it to my patients.

Mammograms fall into this category.

Of course, Rhina makes her own choice in these matters, and I support her decision. I just make sure I present her with the facts.

Just like I do with you.



Digital thermography measures infrared heat from your body, and it detects changes in breast tissue over time.

Top Breast Cancer Risk Factors

To get a mammogram or not: that is the question.

Your individual risk factors should ultimately guide your decision on what screening to employ. However, I don't recommend mammography screening for a person with an average risk..

Here are the top risk factors for breast cancer:

1. Women who are not physically active have a higher risk of getting breast cancer.
2. Older women who are overweight or obese have a higher risk of getting breast cancer than those of average weight.
3. Some forms of hormone replacement therapy used during menopause can raise the risk of breast cancer when taken for more than five years.
4. Birth control pills have been found to raise breast cancer risk.
5. Having a first pregnancy after age 30, not breastfeeding, and never having a full-term pregnancy can raise breast cancer risk.
6. Breast cancer risk increases as alcohol consumption increases.
7. Women who work the night shift have a greater risk of breast cancer.
8. On the other end of the spectrum, studies show that increased sun exposure can reduce breast cancer risk.