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SECRETS PROVEN TO GROW MORE STEM CELLS

Congratulations! You have made a tremendous investment in your health and your future by buying this ebook.

Because you bought this ebook, it is clear that you are really committed to your health and being healthy and strong in the future. You are an action-taker, you believe in yourself, and you deeply care about your health and are willing to invest in your health.

You have made an excellent decision by investing a very small amount of money into this extensive, cutting-edge guide that is filled with powerful information that can help you grow and maintain more stem cells.

Growing and maintaining more stem cells can reduce joint pain and back problems, it can help improve thinking and memory, and it can help keep you young and active.

Whatever your goals are regarding stem cells, this guide can help you get there.

Congratulations on your smart investment. You are well on your way to having more stem cells and the health, wellness, and mental clarity you desire.

Why this guide is so important to you and your future:

In this guide you will learn:

- The 6 enemies of stem cells so you can avoid them and protect your stem cells
- The 5 friends of stem cells so you can use them to grow more stem cells
- How your emotions and psychology can affect your stem cell growth so you can grow more stem cells
- The 10 Powerful Supplements that can help you grow and maintain more stem cells in just 30 seconds a day
- 7 Scientifically Proven Steps you can take right now to start growing new stem cells

Who is this guide for?

Healthy adults who:

- want more stem cells to improve your physical health, sharpen your mental clarity, protect yourself from diseases associated with aging, or to improve your general health and well-being
- are considering stem cell treatment and want the treatment to be as effective as possible
- want to start growing new stem cells right away
- are not ready for stem cell treatment yet, and you want to do what you can to grow new stem cells without getting a stem cell treatment from your doctor
- are passionate about life and want to be as happy and healthy as possible

Who is this guide not for?

- those who are “stuck in their ways” and are completely unwilling to make any changes, even small changes, in their lifestyle to dramatically improve their health
- those who have a serious medical condition that could be aggravated or exacerbated by the action steps in this ebook
- lazy people looking for a “magic pill” to solve all of their problems without putting in the time, energy, or effort to make changes in their lives

Medical Disclaimer

The information in this guide is for education and entertainment purposes only. This guide does not constitute medical advice in any way. You are responsible for how you use the information in this guide.

The information is this guide is meant for healthy adults and is meant to be accurate and authoritative on the topics covered. And the information in this guide can be dangerous to your health if you have certain medical conditions, if you use the information improperly, or if you are taking certain prescription medications.

Therefore it is important that you talk to your doctor before doing any of the action steps, physical activities, or supplements in this guide.

Do not change your diet, exercise routine, or take any supplement without talking to your doctor or healthcare professional first. Some physical exercises could be harmful to you, especially if done improperly.

Some supplements in this guide may interact with medications and certain conditions, and to help protect against any negative side-effects or dangerous interactions, consult your doctor before starting any new supplements, herbs, dietary supplements, exercise or sleep protocols.

All amounts and dosages are the recommended dosages for healthy adults (not children under 18 years old, pregnant women, or those with a specific disease or condition).

Table of Contents

SECTION 1

Chapter 1

Stem Cell Basics

What Are Stem Cells?

Stem cells are undifferentiated cells that can become specialized cells. And they can replicate rapidly. For example, a stem cell injected into your body could become cartilage, bone, collagen, or some other tissue.[1]

There are two major classes of stem cells, embryonic stem cells and adult stem cells. This guide will focus exclusively on adult stem cells.

Adult stem cells exist throughout the body. They are found inside of different types of tissue. For example, adult stem cells have been found in the brain, bone marrow, blood, blood vessels, adipose tissue, skeletal muscles, skin, and the liver.

Stem cells play a huge part in the body's healing process. Stem cell therapies that introduce new stem cells to a particular site (e.g., injecting your own stem cells into your knee to help regrow cartilage) shows tremendous promise. [2]

Stem cell therapy has great potential because your stem cells can be guided into becoming specific cells that can be used to regenerate and repair diseased or damaged tissues in your body.[3]

Stem cell therapy may benefit those with spinal cord injuries, type 1 diabetes, neurodegenerative diseases like Parkinson's disease or Alzheimer's disease, heart disease, stroke, burns, cancer, osteoarthritis, and other conditions.[4]

Adult stem cells can divide or self-renew indefinitely, which means that there is lots of exploration still to come regarding the potential of stem cells to treat disease.

Adult stem cells are found in small numbers in most of your tissues, such as your bone marrow or fat. New research suggests that adult stem cells may be able to create unrelated types of cells. For instance, bone marrow stem cells could create bone, cartilage, lung or heart cells. Currently, scientists are investigating using adult stem cells to help people with neurological diseases, heart disease, and other conditions.[5]

Chapter 2

The 7 Friends of Stem Cells

There are 7 primary ways that you can naturally increase the amount of stem cells in your body.

1. Exercise
2. Positive Mental Attitude
3. Fasting
4. Proper supplementation and nutrition
5. Strong Immune System
6. High levels of energy
7. Sleep

Stem Cell Friend #1: Exercise

Lifting weights and engaging in aerobic activity can naturally increase adult stem cells.

Here is what the research shows:[6]

- More active older animals have more stem cells[7] [8]
- Exercise increases muscle stem cells in mice
- Weight lifters have better stem cells

How much exercise should you do to maximize your stem cells?

Talk to your doctor before beginning any new exercise regimen. Section 2 of this guide provides specifics on the types of exercise that have shown to increase stem cells.

Stem Cell Friend #2: Positive Mental Attitude

When you have a positive mental attitude, you are happier and healthier, more creative, and you are able to grow more stem cells. When you have a negative mental attitude, or are anxious or depressed, you have low energy, difficulty solving problems, trouble sleeping, and have trouble growing new stem cells.

The power of positive moods isn't pseudoscience, it is well documented in scientific research.

For example, one research study published in *Bone Marrow Transplantation* in 2012 found that pessimism or optimism before a stem cell transplant predicted the patient's health after the transplant.[9] Those who were optimistic before receiving stem cells were healthier after receiving stem cells than those who were pessimistic.[10]

And those high in life enjoyment and subjective well-being live longer.[11]

One powerful way to foster a positive mood and improve well-being is to establish a life-purpose. In other words, you want to get clear about what is important to you in life, why you are here, and what you want to contribute to the world.

We will get more specific on the topic and importance of Life Purpose in later sections of this guide.

Stem Cell Friend #3: Fasting

Scientists have known for years that calorie restriction (i.e., fasting) has increased longevity and reduced signs of aging. But it gets even more promising than that regarding stem cells.

A recent study using rats found that short-term calorie restriction significantly increased the availability of stem cell availability in both young and old animals.[12] Fasting also increased muscle regeneration after stem cell transplant.[13]

How much should you fast to increase your stem cells?

First, talk to your doctor before fasting to make sure that it is safe for you.

Regarding specific fasting protocol, Section 2 of this guide will provide specific ways you can fast to maximize your stem cells.

Stem Cell Friend #4: Supplementation and Nutrition

Your body needs certain vitamins and minerals to create, support, and protect new stem cells.

There are five ways that supplements can assist in increasing your number of stem cells:

- Stimulate the production of new stem cells directly
- Provide the vitamins and minerals and supplements necessary to create and maintain new stem cells

- Protect the existing stem cells with antioxidants
- Support a healthy immune system and high levels of energy so that your body has the energy and resources to create and support new stem cells
- Reduce inflammation in your body

Proper nutrition and eating very specific foods in the right quantity can support the growth of new stem cells as well. And there are some nutrients that are only available as supplements, that can dramatically increase your body's ability to grow and support new stem cells.[14]

Stem Cell Friend #5: Strong Immune System

In order to maximize the amount of new stem cells your body can create and support, your body must be healthy.

That means that your immune system is functioning, that you are getting high quality sleep so you can rebuild and repair your body, and that you have healthy mitochondria so that you have high levels of energy.

If you aren't sleeping well, if you don't have good energy, or if you are sick or your immune system is constantly taxed, your body's ability to support stem cells will be impaired.

Therefore, in order to grow and maintain more stem cells, you need to have a healthy and fully-functioning immune system.

Stem Cell Friend #6: High Levels of Energy

Low energy levels mean that your body does not have the resources to grow new stem cells or to maintain your current stem cells. On the other hand, high levels of energy mean that you are feeling good and have the resources to grow and maintain new stem cells.

Mitochondria are especially important regarding your energy levels. You've probably heard the phrase, "Mitochondria are the Powerhouse of the cell". Well, it's true...they produce the energy utilized throughout your entire body.

If your mitochondria aren't healthy, are damaged by oxidation, or are not given the proper nutrients, your body's energy levels will be low. Low energy means fewer resources available to grow new cells.

So to maximize your body's ability to grow and maintain stem cells, you need to have healthy mitochondria and high levels of energy.

Stem Cell Friend #7: Sleep[15-17]

High-quality sleep may be one of the most important factors affecting your ability to grow and maintain new stem cells.

The reason sleep is so important is that it affects so many systems in your body related to stem cells. For example, sleep affects your energy levels, your mood, inflammation, oxidative stress, and your immune system.

Perhaps more importantly, sleep affects your longevity and your quality of life. One study found that increasing your sleep duration reduces your risk of dying from heart disease, while decreasing the amount you sleep increases your risk of dying from heart disease.[16]

Even more interesting...reducing your nightly sleep from 7 hours to 5 hours increases your risk of death from all causes.[17] So, whether it's a car accident, heart attack, getting struck by lightning, or falling off a ladder, your risk of death increases if you cut your regular sleep from 7 hours down to 5 hours.

This study had 1.3 million people in it, so the results are pretty reliable. The study also found that sleeping too much is also not good for health. If you are regularly sleeping over 8 or 9 hours, check with your doctor to see if you are sleeping too much.

Whether you want to live a long and happy life, or if you just want more stem cells, high-quality sleep is very important.

Chapter 3

The 6 Enemies of Stem Cells

There are 6 “enemies” of stem cells that will prevent your body from growing and maintaining new stem cells:

- Certain Antibiotics
- Inflammation
- Oxidative Stress
- Low Energy (Low-functioning Mitochondria)
- Impaired Immune Function
- Poor Sleep

Stem Cell Enemy #1: Certain Antibiotics[18-19]

Antibiotics with quinolone, such as Cipro and Levaquin, are given for infections like urinary tract infections. Animal and human research shows a direct negative impact of quinolone antibiotics on stem cells. Researchers investigating stem cells in rats found that there was reduced stem cell mobilization in the presence of quinolone antibiotics.[20]

It gets worse for those with joint and tendon issues. These antibiotics hurt both stem cells and tendon cells. Ligaments have their own stem cells, so when certain antibiotics damage those cells, your ligaments or tendons could weaken and eventually fail. The result could be tendinopathy or tendon rupture.[21]

Talk to your doctor to see if quinolone antibiotics are safe for you, and if there is a safer alternative that won’t damage your stem cells.

Stem Cell Enemy #2: Inflammation

Inflammation is the body's natural defense system - the immune system - responding to protect your body from foreign organisms, like viruses and bacteria. When responding to a virus or a wound, your body's inflammatory response is beneficial to your health. But when inflammation becomes chronic it can cause life-threatening diseases.

Inflammation harms and potentially destroys your body's healthy stem cells in three ways.

The first way inflammation decreases your ability to support stem cells is by stressing your immune system and hurting your overall health and well being.

When inflammation becomes chronic, it can cause serious health problems, like autoimmune diseases (e.g., arthritis). What happens with autoimmune diseases is that your body's immune system triggers an inflammatory response when there are no foreign invaders to fight. This can lead to chronic inflammation and all of the negative symptoms that come with it.

Today, because of our modern western diet and sedentary lifestyle, many experience chronic inflammation and suffer because of it.[22] Many researchers now believe that a great number of diseases are at least partly caused by inflammation, like heart disease, Alzheimer's disease, MS, and Crohn's disease.[23]

If you wish to have a long and healthy life free from the challenges associated with inflammatory diseases, reducing the inflammation in your body by eliminating inflammatory toxins and protecting your body from inflammation

with proper supplementation might be something for you to discuss with your doctor.

The second way inflammation harms your ability to grow and maintain stem cells is that inflammation harms your body's mitochondria and decreases your energy. And when you are low on energy it is difficult for your body to grow new cells and support healthy cells.

This may also be why inflammation reduces memory and cognitive performance.[24]

The third way inflammation harms stem cells is through oxidative stress.

When your immune system is responding to inflammatory toxins, for example foods that trigger inflammation, your body sends cytokines into your bloodstream. The purpose of cytokines is to find the foreign invader triggering your immune system.

These cytokines travel through your body and cause oxidative stress on your cells. This means that inflammation is causing your body to harm itself by damaging its own cells through oxidation.

Imagine how much harm a person is doing to their health when they are constantly consuming foods and beverages that cause inflammation.

So, by reducing and preventing inflammation in your body, you protect your stem cells and you create an environment that is able to support and maintain stem cells.

And the research shows that reducing inflammation is a powerful way to protect your stem cells.[25]

Stem Cell Enemy #3: Oxidative Stress

Oxidative stress is when your body has more free radicals than antioxidants. Free radicals are molecules with an uneven number of electrons. That means they easily react with other molecules. Free radicals can cause chemical reactions in your body because they are so reactive. These reactions are called oxidation.[26]

When there are more free radicals than can be kept in balance by antioxidants, the free radicals can start doing damage to your body. Specifically, free radicals have been known to damage fatty tissue, DNA, and proteins in your body.

Because DNA, proteins, and lipids (a fancy word for fats) make up a large part of your body, oxidative stress caused by free radicals can cause tremendous damage.

Some diseases associated with oxidative stress are diabetes, heart disease, Parkinson's disease, Alzheimer's disease, and cancer.[27]

Free radicals can also do damage at the cellular level. Meaning if your body has too many free radicals and not enough antioxidants, those free radicals can do damage to your stem cells. Those free radicals can also do damage to tissues and systems that support healthy stem cells, like your mitochondria.

For example, a study in humans found that even low doses of oxidative stress damaged stem cells in the brain.[28] [29]

Stem Cell Enemy #4: Low Energy

If you have low levels of energy you won't have enough resources to grow and maintain new stem cells.

Your mitochondria are the source of energy in your body. If your mitochondria aren't functioning properly because of oxidative damage, or they don't have the appropriate nutrients to operate well, your energy levels will suffer.

Not only will you feel tired and have poor cognitive performance when your mitochondria are impaired, but your ability to grow and maintain stem cells will be greatly reduced.

Stem Cell Enemy #5: Impaired Immune System

If your immune system is impaired or overtaxed, it is unlikely you will have the resources available to grow and maintain new stem cells.

And an impaired immune system can directly cause damage to your stem cells through chronic inflammation.

As you already know, your immune system becomes compromised when you don't get enough sleep, consume inflammatory substances or toxins (like alcohol), or have low energy levels from poor diet or poorly-functioning mitochondria.

Whatever your health goals are, a healthy immune system is critical to growing and protecting new stem cells AND your overall health and well being.

Stem Cell Enemy #6: Poor Sleep

Your ability to grow and maintain new stem cells is directly linked to your ability to get consistent, quality sleep.

Sleep is intimately involved with stem cells in three ways.

The first way sleep impacts stem cell growth and development is sleep's essential role in repairing and maintaining healthy cells and tissues in your body.

Your body is repairing itself all the time, and the vast majority of repairs occur when you are asleep. This is when your body is relatively motionless and can devote its energy to finding and repairing damaged cells and tissues.

When you are not getting high-quality sleep, then your body has less time to repair your cells. In fact, research now shows that a lack of sleep can actually cause brain damage.[30]

Mice who were deprived of sleep showed a 25-30% loss of a specific type of neuron. And, not surprisingly, mice deprived of sleep showed higher signs of oxidative stress than mice who got healthy sleep.[31]

The second way poor sleep harms your stem cell production and maintenance is that it impairs your immune system. And when your immune system is weak you are more likely to get sick, which means your body has to spend its energy fighting disease instead of building new stem cells.

A compromised immune system can also contribute to inflammation, which we know is bad for stem cells.

The third way poor sleep harms your body's ability to grow and maintain new stem cells is that it depletes your energy levels.

Question: Have you ever had trouble sleeping?

After a night of tossing and turning in bed, how much energy did you have?

If you are like most people, you felt tired, grumpy, maybe even a little groggy.

When you are sleep deprived your body goes into "survival mode." This means you are functioning on a more primal, instinctual level. Your brain has less energy, so you don't think as well, and your body is craving energy. This usually means you are craving junk food that promises quick energy through sugar and high-calorie and fatty foods.[32]

Imagine how much less energy is available for growing and repairing stem cells when you don't even have enough energy to think properly!

So getting good sleep is critical to your ability to grow and maintain new stem cells.

Section Review

The 7 Friends of Stem Cells

1. Exercise
2. Positive Mental Attitude
3. Fasting
4. Proper supplementation and nutrition
5. Strong Immune System
6. High levels of energy
7. Sleep

The 6 Enemies of Stem Cells

- Antibiotics with Quinalone
- Inflammation
- Oxidative Stress
- Low Energy (Low-functioning Mitochondria)
- Impaired Immune System
- Poor Sleep

SECTION 2

Chapter 4

Connect with Your Purpose

Benefits of Having a Life Purpose:[33]

- Reduced risk of Alzheimer's disease
- Increased well-being
- Longer life
- More likely to achieve your goals

Important Question: WHY do you want more stem cells?

The more clear, concrete, and specific your purpose is, the more likely you will succeed in achieving your goal.[34]

For example, if John wants more stem cells because he thinks they might be helpful for his memory, that is good motivation to grow more stem cells. And there is probably an even deeper, more important "why" for John.

If John wants to grow more stem cells to improve his memory so that he can be a good husband and grandfather as he ages, and make lasting memories with his grandchildren, that is **even more powerful**.

Here are some reasons people want to grow more stem cells:

- reduce or eliminate physical pain
- increase mobility

- slow down the aging process
- protect and improve their mind and their memory
- protect against disease

When you have a purpose, and you are fully committed to it, almost nothing can stop you from achieving it.

Doctor Victor Frankl was taken from his home and imprisoned in a Nazi concentration camp. He survived. Many others did not. Dr. Frankl believed that having a purpose for surviving the concentration camp is what helped keep him alive.

You may be asking, “How does having a life purpose keep you healthy?”

Because, having a life purpose means that you have something to live for.

That warrants repeating.

Having a life purpose means that you have something to live for.

And when your mind knows that you have something to live for (e.g., your family, unfinished work, your passions in life), then it is easier for you to make healthy changes in your life.

Consider this: who is more likely to stick to a diet, a person who wants to get healthy so they can play with their grandkids, or a person with no life purpose who is constantly asking, “What’s the point?”?

Obviously, someone with a purpose is going to be more driven, more persistent, and more willing and able to do what is necessary to achieve their goals.

Modern research is confirming how important it is for your physical and mental health to have a purpose. Those with a life purpose had better sleep.[35] And sleep can have a dramatic impact on physical health, emotional well-being, and cognitive performance.

An article in the medical journal Lancet, one of the most respected medical journals, found that people lived significantly longer if they had a life purpose (measured in a scale called "eudemonic well-being").[36]

Having a clear purpose, a powerful WHY, for your health and your desire to grow more stem cells is a critical part of the "inner game" of stem cell growth.

So, it is important for you to get clear on your purpose for you to maximize your stem cell growth.

**Note: Your answers to the following questions don't need to be about your life purpose, though they can be. The following questions are simply designed to help you get a clear and powerful understanding of your purpose for growing more stem cells.*

Activity Questions

1. What benefits do you want by having more stem cells? (e.g., less pain, more mobility, stronger memory, etc.)
2. Why do you want those benefits? What will that do for you? (e.g., less pain in my legs means that I can go dancing with my wife and play with the grandkids).
3. Condense your answer into a clear and short sentence that you can write down, remember, and repeat to yourself as you continue to take steps to grow more stem cells and improve your health.

Example: “I am taking steps to grow more stem cells because I want to reduce the joint pain in my legs so I can take my wife dancing and play with my grandkids.

Format: “I am taking steps to grow more stem cells because (insert your answer to question 1) so that I can (insert your answer to question 2).

BONUS:

Take your stem cell purpose sentence, the sentence you just wrote above, and write it on a sticky note and post it on your bathroom mirror where you can see it every morning when you wake up.

BONUS #2:

Share your stem cell purpose sentence with someone you love. Tell them what you are doing, what your purpose is, and ask for their help, love, and support in you making important changes in your life.

Chapter 5

Take the Right Supplements

Benefits of Proper Supplementation:[39-44]

- Stimulate the growth of new stem cells
- Reduce pain and swelling in joints
- Support the maintenance of your current stem cells
- Boost your immune system
- Reduce inflammation
- Protect your stem cells and organs from oxidative damage
- Improve sleep
- Protect your brain from premature aging
- Improve memory and cognition
- Fast and easy way to improve your health
- Less expensive source of essential vitamins and minerals than organic food
- Allows you to easily get essential vitamins and minerals while fasting

Top 7 Supplements for Stem Cells

Supplement #1: Quercetin[37]

Benefits:

- New research suggests it supports stem cell growth and differentiation
- Antioxidant
- Supports mitochondria
- Safe alternative to painkillers for pain relief from joint pain and arthritis
- Protects your body by reducing stress
- Natural antihistamine and alleviates allergy symptoms
- Can prevent cell death[38]

**Note: earlier research suggested quercetin might inhibit stem cell growth. The current research suggests it supports stem cell growth.*

Food Sources:

- Apples
- Olive Oil
- Peppers
- Red Wine
- Leafy Greens
- Cruciferous Vegetables

Recommended Dosage:

- Ideal amounts have not yet been established by the scientific community. Talk to your doctor to find the right dosage for you
- Most supplements are 500 mg taken twice daily. And you can likely get benefits from taking even less than that, especially with a diet rich in Quercetin
- Quercetin is not easily absorbed by the body. Take your Quercetin supplements with food and black pepper to increase the absorption
- The best form of Quercetin is Isoquercetin. (May also be labelled as Alpha-Glycosyl Isoquercitrin)
- Avoid Aglycone Quercetin because it has low bioavailability and you will get less benefit from it

Supplement #2: Iodine

Deficiency:

- 40-74% of adults are deficient in iodine

Benefits:[39]

- Enhances immune function
- Antioxidant
- Prevents brain damage
- Maintains strong teeth and bones
- Natural mood-stabilizer
- Beneficial for proper thyroid function
- Plays an important role in cognitive development[40]

Food Sources:

- Iodized salt
- Seaweed
- Shrimp
- Eggs
- Prunes

Forms:

- Kelp powder or potassium iodide capsules

Recommended Dosage:

- 150 mcg - 1,000 mcg per day
- Talk to your doctor if you have a thyroid condition before taking iodine supplements

What Else to Know:

- Unless you eat seafood at every meal, it is unlikely you are getting your daily recommended dose of iodine through food alone. Supplementation of iodine may be beneficial, even if you are already consuming a healthy diet

Supplement #3: Astragalus membranaceus (root)

Benefits:[41]

- Prevents collagen degradation
- Helps heal lung tissue
- Immune booster
- Anti-inflammatory
- May slow the growth of tumors
- Protects the cardiovascular system
- Regulates and prevents diabetes
- Can help treat tumors when combined with chemotherapy[42]
- Antiviral and antibacterial properties
- Has more than 63 different flavonoids[43]
- Protects healthy stem cells by improved apoptosis, (regulated cell death)[44]

Forms:

Astragalus root is available in most Chinese markets and health-food stores in a variety of forms:

- Tincture (liquid alcohol extract)
- Capsules and tablets
- Topically for the skin
- Dried and used in tea

Dosage:

- Supplements generally contain 500 mg, and two to three tablets or capsules are usually the recommended daily dosage. Take only as directed

What Else to Know:

- Too much can inhibit the immune system[45]

Supplement #4: Spirulina

Benefits:[46]

- Can trigger the production of new stem cells
- Antioxidant
- Anti-inflammatory
- Rich in protein
- May have anti-cancer, anti-viral, and anti-aging effects
- Ideal source of protein and vitamins for vegetarians and those trying to reduce their consumption of animal protein

Food Sources:

- Powders
- Capsules

Recommended Dosage:

- No universally accepted dosage
- Use as directed
- Supplement capsules can range from 300 mg up to 1,000 mg per serving
- Powder supplement doses range from ½ teaspoon to 1 tablespoon

Supplement #5: Krill Oil

Benefits:

- Contains omega-3 fatty acids (DHA and EPA)
- Anti-inflammatory, especially intestinal inflammation[47]
- Similar benefit as fish oil
- Krill oil contains a pink-orange[48] pigment called astaxanthin, which has anti-inflammatory and antioxidant effects [49]
- May be more bioavailable than fish oil[50]

Food Sources:

- Only available in supplement form

Forms:

- Capsules

Recommended Dosage:

- The FDA recommends a combined maximum intake of EPA and DHA below 3 grams day[51]
- You can safely combine with fish oil. Check with your doctor to determine the best dosage for you. Use as directed

Supplement #6: Alpha Lipoic Acid (ALA)

Benefits:[52]

- Antioxidant
- Anti-inflammatory
- Plays a key role in metabolism and energy
- Increases the expression of antioxidant enzymes[53]
- Its anti-inflammatory action is independent of its antioxidant activity[54]
- In animals ALA has neuroprotective effects and may prolong life[55]
- May be effective in preventing or combating Alzheimer's Disease[56]
- Helps protect DNA in rats from oxidation[57]

Food Sources:

- Spinach
- Broccoli
- Tomato
- Brussel sprouts

Forms:

- Capsules

Recommended Dosage:[58]

- There is no definitive dosage for ALA. Talk to your doctor first to make sure ALA is safe for you and that you are taking the right amount for you
- In research studies for diabetes, the dosage of ALA varied from 600-1,200 mg daily
- Most supplements range from 250-600 mg a day. Use only as directed

Supplement #7: Magnesium

- 80% of Americans may be deficient in magnesium

Benefits[59]

- Involved in over 300 processes in the body
- Reduces anxiety and stress
- Essential for bone health
- Improves heart health
- Increases energy levels
- Helps produce collagen

(which can support stem cells)

- Decreases inflammation[60]

Food Sources:[61]

- Spinach
- Kale
- Figs
- Avocado
- Broccoli
- Salmon
- Dark chocolate

Forms:[62]

- There are 7 different forms of magnesium in supplements
- Supplements can be in the form of pressed pills, capsules, or liquids
- Liquid drops that can be put in water are likely the most bioavailable
- Magnesium Orotate is the best form for supplements because it is easily absorbed and readily available in the body

Recommended Dosage:

- Males: 400 mg per day
- Females: 320 mg per day

What Else to Know:

- High doses of magnesium can have laxative effects

Bonus Supplement: Organic Coffee

Benefits:[63]

- Antioxidant
- Rich in polyphenols
- Contains over 1,000 compounds that improve function in your cells
- The #1 source of antioxidants for Americans
- Can reduce chronic inflammation
- Linked to improved longev[illegible]

Food Sources:

- Regular organic coffee
- Decaf organic coffee

Recommended Dosage:

- 1-5 cups per day[64]
- Switch to decaf coffee after 2 pm to prevent it from interfering with your sleep
- The suggested maximum daily dosage of caffeine is 400 mg per day, about 200 mg at one time. This is equivalent to about (3) 8-oz cups of brewed coffee
- DO NOT mix milk, cream, or any dairy products into your coffee. Dairy can prevent your body from absorbing the beneficial polyphenols in coffee[65]
- Safest to consume coffee as a beverage, not as a supplement

What Else to Know:

- WARNING: Coffee is grown with lots of pesticides. To protect yourself from consuming pesticides, only consume organic coffee.[66]

Review: Top Stem Cell Supplements

- Spirulina
- Alpha Lipoic Acid (ALA)
- Magnesium
- Iodine
- Quercetin
- Astragalus membranaceus
- Krill oil
- Bonus: Coffee

Action Questions:

Q1: What supplements (minimum 3) are you going to incorporate into your daily routine in order to increase your stem cells and improve your overall health?

Q2: When exactly are you going to order or buy those supplements? (Specific date)

Q3: How often will you commit to taking them? For how long (i.e., a week, a month, a year…)

Chapter 6

Fasting

Benefits of Fasting: [69-71]

- Increase stem cells
- Reduce inflammation
- Increase energy
- Improve cognitive functioning
- Lose fat
- Sharpen memory
- Reduce oxidative damage
- Live a longer, healthier life

"As a field, we've known for over 100 years that low-calorie states such as fasting or caloric restriction can have positive effects on tissue health and aging,"[67] said Dr. Omer Yilmaz, a biology professor at MIT.

Researchers from Duke and MIT found that a single 24-hour fast significantly improved stem cell function and boosted fat metabolism and in rats.[68]

Is fasting right for you?

Fasting is generally safe for healthy men and and healthy women who are not pregnant. Many religions have ritualized fasting, and fasting has been practiced in different cultures around the world for thousands of years.

After talking to your doctor, and if it is safe for you to fast, you can start off by doing intermittent fasting. This means not consuming calories for 16 hours

per day and only eating during an 8-hour period. (This is the protocol for men. For women the fasting period is 12-16 hours).

For example, you could have breakfast at noon and complete your dinner by 8 p.m. Then you would fast from 8 pm - noon the next day (16 hours).

Or, if you are ready to “dive in,” you can get started by doing a 24-hour fast. You can drink water, tea, and other calorie-free beverages during that time. And drink lots of water.

The goal is to do a 24-hour fast once per week. Intermittent fasting may increase stem cells and improve stem cell functioning, but only a 24-hour fast has “proven” to help stem cells.

And there are lots of benefits of intermittent fasting, like lower cholesterol and increased mental clarity, so starting out with intermittent fasting will likely be very beneficial for your health and will make your 24-hour fast easier when you are ready.

If intermittent fasting sounds daunting, you can start with a 24-hour juice fast, a period of 24 hours when you consume only juice, water, and approved supplements.

Talk to your doctor about the specific fasting protocol, or juice-fasting protocol, that’s best for you.

The important thing to remember about fasting to increase stem cells is calorie restriction for an extended period of time, ideally 24 hours or more. Do not do more than two 24-hour fasts per week, unless advised by your doctor. Doing more than two 24-hours fasts significantly decreases your weekly caloric intake.[69]

Enemies of Fasting:[75-55]

- No clear purpose for fasting
- Self-Doubt
- Junk food in the house
- Compulsive snacking
- Not drinking enough water
- Poor sleep
- Boredom
- Emotional eating patterns
- Thinking about food all day
- Eating junk food or too many carbs the night before
- Being around others who are eating

Friends of Fasting:[78-81]

- A clear purpose for your fast
- Starting with shorter fasts first
- Drinking lots of water
- Coffee, tea, and calorie-free beverages
- Exercise
- A busy day
- Support from family and friends

Action Questions

1: Which 1-3 enemies of fasting do you think are most likely to make fasting difficult for you?

2: How can you eliminate those and make it more likely that you will complete your fast?

3: When will you start fasting? Schedule your first three fasts and what kind of fast you are doing (e.g., intermittent fasting, 24-hour fast, juice fast, etc.)

Bonus:

Tell the person(s) you live with, or a neighbor you are friends with, that you are going to begin fasting, tell them WHY you are fasting (your stem cell purpose) and ask them for their help and support.

If you are living with them, tell them your fasting schedule so they can help support you those days and not plan anything (like baking fresh cookies or hosting a dinner party) those days that would make fasting more difficult.

Chapter 7

High Quality Sleep

Benefits of High Quality Sleep:[82-85]

- Reduce stress
- Increase energy
- Strengthen immune system
- Reduce inflammation
- Improve memory
- Increase overall health and longevity
- Have the energy and resources to grow more stem cells

If you are already getting great sleep, and you are not interesting in maximizing the health benefits of your sleep, then you can skip to the next chapter.

But, if you are like the 45% of Americans who say they struggle with sleep on a weekly basis[70], or you know how important sleep is to your stem cells and your overall health and you want to maximize the benefits of your sleep, then this chapter is for you.

Enemies of Sleep:

- Stress late at night
- Unnatural light (reduces melatonin)
- Exercise, caffeine, alcohol or hot showers close to bedtime
- Computer screens, phones, televisions
- Low-quality sleep environment

Friends of Sleep:[71]

- Consistent bedtime
- Dark, quiet room
- Candlelight before bed
- Turning off electronics (e.g., phone, tv) 1-2 hours before bed
- Exercise during the day (at least 4 hours before bed)
- Relaxing activities before bed
- Foods high in Magnesium, Potassium and other sleep-friendly minerals[72]

Lights:

Most people are unfamiliar with the negative effects unnatural light from LED lights and computer screens is having on their health, their sleep, and their risk of cancer.

Human beings evolved with sunlight and light from fire. Many of the lights in our homes, offices, and electronics emit light frequencies different from sunlight and candle light.

Exposure to these unnatural lights, even during the day, can have negative consequences to your health. For example, exposure to LED lights increased oxidative damage in a study with rats.[73]

Unnatural light, especially at night, can severely decrease your levels of melatonin.[74] Melatonin is a hormone that helps you sleep, and new research shows that melatonin levels are related to cancer.

A research paper from 2017 concluded that melatonin is “an excellent candidate for the prevention and treatment of several cancers.”[75]

Other research shows that low melatonin levels in women are correlated with increased risk of developing breast cancer.[76] And men with lower levels of melatonin were more likely to develop prostate cancer.[77]

So whether you want a good night's sleep or you want to reduce your risk of cancer, protecting your natural melatonin levels by reducing your exposure to unnatural light at night could be very helpful for you.

Action Questions

1: What is your new, consistent, bedtime? This time should be realistic and sustainable for you, giving yourself at least 7 hours in bed. (It should also be close to the time you regularly go to bed, so it is easy for you to make it your consistent bedtime).

2: What time are you committing to turn off electronics (e.g., your phone, TV, computer, iPad)? This time should be 1-2 hours before your bedtime.

3: What is a relaxing activity that you will do before bed? (e.g., journaling, reading non-fiction (no scary books), yoga or stretching, etc.). What time are you going to start this activity?

Bonus:

Replace LED lights in your house, starting with your bedroom and bathroom, with incandescent light bulbs.

WHEN: By what date will you have replaced the LED lights in your bedroom with incandescent light bulbs?

Chapter 8

Exercise

Ask your doctor what level of exercise will be most beneficial for creating stem cells and for your overall health.

Whatever exercise you do, choose something fun that you like to do. When your exercise program creates positive feelings and emotions, that stimulates your immune system and creates a healthier and more vibrant you.

And it creates an environment in your body that more readily supports stem cells.

For example, doctors have noticed that patients who are more physically active tend to get better results from their stem cell treatments.[78]

Data on Exercise:

Study 1: A 2012 study found that exercise reduces age-related decline in animals, specifically by increasing differentiation of stem cells in bone marrow.[79]

Study 2: Research also shows that strenuous exercise in humans increases stem cells.[80] In this study 18 healthy men exercised at 70% of their "individual aerobic threshold" for 4 hours. Stem cells increased most noticeably between 210 and 240 minutes.

Study 3: Another study found that intense exercise can increase the number of stem cells in the blood.[81] Even just exposing stem cells to the blood serum

of individuals who had a “short and intense” workout helped the stem cells in two ways: it helped the stem cells migrate and it improved their function.[82]

What kind of exercise should you do?

1. Most important is that the exercises you do are safe for you.
2. Your exercise program needs to be fun and enjoyable for you.
3. Plan multiple exercises you can do (e.g., walk on Monday, play tennis on Tuesday, swim on Wednesday) to exercise different muscles in your body AND to fight boredom and keep it interesting.

Is “vigorous” exercise right for you?

-talk to your medical doctor before beginning any exercise program

-ask your doctor specifically about “vigorous” exercise, if it is safe for you, and what type and duration of exercise they recommend.

How do you know if the exercise is vigorous?

**Talk to your medical doctor before doing any exercises based on the chart below.*

Below is a chart that shows target heart rate in beats per minute (BPM) by age. A heart rate at the upper-end of the “beginner” range, around 70% on the below chart, is considered “vigorous” exercise.

For example, for someone 65 years old, any exercise that produces a heart rate of 107 BPM is considered vigorous, and could help stimulate stem cells.

AGE	BEGINNER 60% - 70%		INTERMEDIATE 70% - 80%		ADVANCED 80% - 90%	
	Beats/min	Beats/10 sec *	Beats/min	Beats/10 sec *	Beats/min	Beats/10 sec *
to 19	121 - 141	20 - 24	141 - 161	24 - 27	161 - 181	27 - 30
20 - 24	119 - 139	20 - 23	139 - 158	23 - 26	158 - 178	26 - 30
25 - 29	116 - 135	19 - 23	135 - 154	23 - 26	154 - 174	26 - 29
30 - 34	113 - 132	19 - 22	132 - 150	22 - 25	150 - 169	25 - 28
35 - 39	110 - 128	18 - 21	128 - 146	21 - 24	146 - 165	24 - 28
40 - 44	107 - 125	18 - 21	125 - 142	21 - 24	142 - 160	24 - 27
45 - 49	104 - 121	17 - 20	121 - 138	20 - 23	138 - 156	23 - 26
50 - 54	101 - 118	17 - 20	118 - 134	20 - 22	134 - 151	22 - 25
55 - 59	98 - 114	16 - 19	114 - 130	19 - 22	130 - 147	22 - 25
60 - 64	95 - 111	16 - 19	111 - 126	19 - 21	126 - 142	21 - 24
65 - 69	92 - 107	15 - 18	107 - 122	18 - 20	122 - 138	20 - 23
70 - 74	89 - 104	15 - 17	104 - 118	17 - 20	118 - 133	20 - 22
75 - 79	86 - 100	14 - 17	100 - 114	17 - 19	114 - 129	19 - 22
80 - 84	83 - 97	14 - 16	97 - 110	16 - 18	110 - 124	18 - 21
85 +	81 - 95	14 - 16	95 - 108	16 - 18	108 - 122	18 - 20

Recommendation for Getting Started:

Step 1)

-ask your physician, medical doctor, or healthcare provider the following questions:

- is physical exercise safe for you?
- what exercises do they recommend?
- is “strenuous” exercise safe for you?
- what exercises should you stay away from? (for example, is crossfit or running a marathon going to be too hard on your body)
- what is a good target heart rate for you? How long should you seek to sustain that target heart rate?
- what heart rate is too high for you? For example, when your heart rate gets to X BMP, you should slow down and recover.

Step 2)

Find a physical trainer who specializes in working with people of your age and fitness level. Have them design a workout that will be safe and fun for you.

Step 3)

Find a workout buddy. Research shows that those who have a “workout buddy” exercise more consistently and exercise more vigorously than those who go it alone.[83]

Action Questions:

1: What is a fun exercise you would enjoy? Try to write down at least 5 exercises or physical activities you would enjoy doing.

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2: Who would you like to workout with? Write at least 3 names.

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-

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3: When (choose a specific date and time) will you call your doctor to set up an appointment to ask about what exercises are safe for you? (If you already have your doctors approval to exercise and try new exercise routines, when will you research and call a physical trainer who specializes in working with people of your age and fitness level?)

Chapter 9

Calm Your Stress

Stress is one of the biggest enemies of stem cells. Stress basically creates a hostile environment for stem cells and makes it difficult for you to have the energy and resources to grow and support new stem cells.

How stress is damaging your stem cells:

- chronic stress causes damage through inflammation
- stress can interfere with sleep, reducing your energy and immune function
- stress decreases your feelings of happiness and peace and can create negative moods
- chronic stress is associated with an increase in risk of most diseases, for example heart disease, depression, physical pain, and the common cold.[84]

Proven Ways to Reduce Your Stress:[85]

- meditation, breathing practice, or mindfulness practice
- play; do something you really enjoy
- write down whatever is bothering you, and then let it go
- get some exercise, especially exercise that is fun for you
- spend time in nature
- hug someone you love for 30 seconds
- laugh
- spend time with loved ones
- pray or engage in a spiritual practice
- listen to your favorite classical music, or soothing music like Tibetan singing bowls or sounds of the ocean
- play with your pet

Action Questions:

1: What is one relaxing or stress-reducing activity from the list above that you would like to use in your regular life?

2:When specifically will you commit do using that stress-reducing activity? (e.g., when you feel tension in your body when reading or watching the news, during or after an argument with your spouse, etc.)

3: What is your biggest cause of stress in your daily life?

4: What are 3 things you could do to reduce or eliminate that source of stress in your life?

Chapter 10

Replace Inflammatory Foods

The diet most Americans and those in industrialized nations have is very "unnatural" and is packed with inflammatory foods. And even foods that are high in antioxidants and anti-inflammatories have been paired with inflammatory foods that destroy their benefit.

For example, raw organic cacao, which can be found in chocolate, is a great source of antioxidants. In fact, cacao is a superfood. It has 40 times the antioxidants as blueberries![86]

Yet we ruin the benefits of cacao by pairing it with inflammatory sweeteners, like sugar made from genetically-modified beets.

Another example you are familiar with is coffee. Organic coffee is rich in antioxidants, yet many people put cream or milk in their coffee. Dairy binds to the antioxidants in your coffee, reducing the health benefits of coffee by 300%![87]

So even foods that could improve your health are often contaminated with inflammatory foods.

Worst Inflammatory Foods:[104-106]

- Sugar
- High-Fructose Corn Syrup
- Nutra-Sweet (i.e., Aspartame)
- Vegetable Oil
- Fried Foods
- Refined Flour
- Dairy (especially in coffee)
- Processed Meats (e.g., bacon, hot dogs, bologna)

Good news! Having a healthier diet doesn't need to be painful. In fact, reducing inflammatory foods could reduce pain from inflammation in your joints.

Eating healthy can even be pleasurable! There are lots of delicious anti-inflammatory sweeteners and spices that you can add to your favorite foods, desserts, and even your coffee!

So relax...there are lots of healthy and tasty alternatives that can satisfy your sweet tooth and deliver the flavors you crave.

Healthy Sweeteners[88]

- Xylitol (prebiotic good for gut health)
- Erythritol (zero calorie, good for your teeth)
- Maple Syrup (rich in vitamins)
- Raw Honey (natural anti-inflammatory)[89]
- Yacon Syrup (can assist with weight loss)
- Stevia (zero calorie, shown to fight cancer)[90]

**Note 1: When introducing Xylitol and Erythritol to your diet, start slow. And then gradually increase the amount. Because your stomach and GI tract are not used to digesting these sugars, eating too much could cause an unpleasant digestive experience. So start small and let the bacteria in your gut get used to them.*

**Note 2: Like chocolate, Xylitol and Erythritol are toxic to dogs.*

**Note 3: All recommendations on this list are for healthy adults only; certain sweeteners, like honey, are not safe for infants.*

Healthy Spices[91]

- Turmeric (always take Turmeric with Black Pepper)
- Black Pepper
- Cayenne
- Ginger
- Cinnamon
- Cloves
- Sage
- Rosemary

Eliminating dairy from your diet would be ideal, and that can be very difficult for some people. If you HAVE to eat cheese, or you simply feel like indulging in cheese one day, choose a healthier alternative that can meet your cheese needs.

Healthy Alternatives: Cheese[92]

Unhealthy Choice:	Healthier and More Delicious Choice:
Parmesan	Feta
Blue Cheese	Cottage Cheese
Cream Cheese	Mozzarella
Gruyere	Swiss
Fontina	Ricotta
American	Cheddar

Start Small

Because inflammatory foods are everywhere, and they are engineered by food scientists to be delicious and addictive, it is unreasonable to try cutting out all inflammatory foods at once. So start small, be patient with yourself, and celebrate your progress.

Tell Your Spouse

One of the best ways to dramatically reduce inflammatory foods in your diet is to tell your spouse or partner about this and ask them for help.

It is much easier to stop putting cream in your coffee if your partner agrees to stop putting cream in their coffee too (that way that temptation isn't there for you).

Action Questions:

1: What are the top 3 inflammatory foods that you eat on a regular basis?

2: When do you usually eat these inflammatory foods? (e.g., for dessert after dinner, in your coffee in the morning, when you feel stressed and reach for junk food, etc.)

3: Which one inflammatory food, if you eliminated it, would make the biggest positive difference in your health?

4: What would be a healthy AND delicious replacement for that food?

5: On what date will you commit to replacing that inflammatory food with your healthy and delicious alternative?

Section Review

The 7 Steps to More Stem Cells

1. Connect with Your Purpose
2. Take the Right Supplements
3. Fasting
4. High Quality Sleep
5. Exercise
6. Calm Your Stress
7. Replace Inflammatory Foods

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