HOW TO INCREASE CELL REGENERATION

SUMMARY DOCUMENT
KEY ENERGY HABIT #1: AMPLIFY CELL REGENERATION

Enhanced Cell Regeneration = Increased Lifespan, Disease Prevention, and MORE ENERGY!

When you understand the science of the specific techniques to build energy levels, and you start progressively layering one strategy on top of another, it becomes easily possible to double or even triple your energy levels.

Let me explain why...

Remember the two layers I told you about before...

1. Efficient cell regeneration
2. Building the cellular engine

So let us look at just # 1. Cell Regeneration.

EFFICIENT CELL REGENERATION HABITS
CONSIG PRIMARILY OF THE FOLLOWING FACTORS:

1. Adequate calories, macros, and vitamins/minerals
2. Circadian rhythm habits
3. Sleep hygiene habits
4. Gentle movement
5. Anti-stress habits
6. Work-rejuvenation rhythm
7. Optimized autophagy

To go over all of these in-depth (as I do in The Energy Blueprint program) would require writing an entire 300-page book! So I am just going to talk about one of these factors, so you can get a glimpse of the powerful methods in The Energy Blueprint system.

I’m going to talk about #7 on that list: AUTOPHAGY.

Most of you who are into health and fitness are aware of the usual healthy practices such as eating a good diet, doing exercise, getting good sleep each night, limiting alcohol, ensuring you are well nourished with vitamins, and so on. But you still age, and you still often have poor energy levels.
Of course, hopefully you are already doing a lot of the common sense advice out there and trying to live a healthy lifestyle. But many people who are doing those things still are not where they would like to be with their health, their body, or their energy levels.

So, what further measures can you take to slow aging, prevent disease, and prevent the age-related decrease in energy (or even improve your energy levels as you age)?

**Enhancing autophagy is one of the absolute most important anti-aging and energy building strategies....**

One of the most powerful anti-aging and energy boosting strategies:

![Autophagy Diagram](image)

What is autophagy? It is basically like **cellular recycling**.

Just through the normal act of living, producing energy, and keeping alive, your cells get broken down. Different proteins and components in the cell start to get worn out, damaged and dysfunctional.

All of that is totally normal. And in order to deal with that fact, your body evolved a mechanism to repair damaged cell components and bring the cell back up to being 100% healthy.

That process is called autophagy. And basically what it does is send all those damaged and dysfunctional cell parts into the garbage disposal of the cell, where they get broken down and chemically digested. Then those little broken down bits of debris get recycled and re-assembled into new healthy cell parts.

In aging, cellular “junk”, such as malfunctioning mitochondria (your cellular energy generators), misfolded proteins, and damaged organelles accumulate, causing the maladies of aging. Something called “the mitochondrial theory of aging” attempts to account for aging by the increased number of damaged, malfunctioning, and free-radical-producing mitochondria.

But here is what the latest cutting-edge research tells us: **This junk accumulates precisely because the organism is unable to initiate and maintain autophagy.**

Under normal, healthy conditions, autophagy removes and recycles these mitochondria. Thus, **a more fundamental reason for aging is repressed autophagy.**
Exceptionally long-lived lab animals, those that have lifespans that are double or longer than those of the shorter-lived varieties, have genes that increase the process of autophagy.

Of course, the animals that live twice as long or longer than normal animals still do eventually die. But the fact that increased autophagy extends their lives shows that it is the limiting factor in lifespan.

Again, the more junk that builds up and the faster it builds up not only ages you, but it damages your cells’ ability to produce energy efficiently.

When autophagy is not working well, it means you are functioning today on yesterday’s cell components. Ultimately, what that means for you is susceptibility to disease and lower energy levels.

It has been shown that cells from long-lived individuals, i.e., centenarians, have higher rates of autophagy than those of the merely old (75 years). Conversely, diminished autophagy plays a major role in aging.

Think about why young people (children) are bursting with energy, and why you lose energy as you get older.

- **Clean cells = High energy levels**
- **Cells with lots of dysfunctional and worn out proteins = Poor energy levels**

Maintaining clean cells is important to slow aging and maintain healthy mitochondria (i.e., high energy levels) as you get older.

Ultimately what all this means is that **if you want high energy levels, you better make sure to optimize your body’s autophagy process!**

So how do you optimize your body’s autophagy?

### 3 WAYS TO AMPLIFY AUTOPHAGY AND BOOST YOUR CELLULAR REJUVENATION

1. Amplify circadian rhythm
2. Increase your fasting window each night
3. Water at the right time

**Strategy #1: Amplify Autophagy By Optimizing Your Circadian Rhythm (a.k.a. the Body’s Biological Clock)**

First of all, what is the circadian rhythm?

Virtually all life on earth has evolved to be in tune with the daily rhythm of light and dark cycles. Most organisms, including humans, have their metabolic, physiological and behavioral processes synchronized to a 24-hour clock. And according to the external signals that tell us when it is day and when it is night, your biology orchestrates a symphony of hormonal, neurotransmitter, and behavioral responses.

So why does this matter?

Simple: A large and rapidly growing body of new research has discovered that the circadian rhythm is a primary factor in not just when you are asleep and awake, but also in your health, body composition, and energy levels.

In Wiley and Formby’s book *Lights Out: Sleep, Sugar, and Survival*, they make the case that disrupted circadian rhythm is a major contributor to most modern day degenerative diseases like obesity,
diabetes, heart disease, and cancer—that it is just as big of a contributor to your health as your exercise and nutritional habits.

For example, disrupted circadian rhythm has been shown to:

- **Contribute to inflammatory diseases.**
- Dramatically weaken your immune system.
- Increase the risk of cancer and metabolic syndrome.
- Increase the risk of cardiovascular disease.
- Increase levels of stress hormones like cortisol.
- Predispose you to cancer and accelerate tumor growth.
- Increase the risk of psychiatric disorders and neurodegenerative diseases.
- Seriously impair your memory. Even a single night of poor sleep can impact your ability to think clearly the next day and decreases your problem solving ability.
- **Worsen a long list of other diseases and disorders**, including: Hypothyroidism (i.e. slow metabolism), heart disease, stomach ulcers, constipation, mood disorders like depression and anxiety.
- Accelerate the aging process.
- Profoundly decrease energy levels and increase daytime sleepiness and fatigue.
- Dramatically increase your overall risk of dying from any cause.

If it is not clear yet, I’ll just state this very directly: Despite the fact that most of you in the modern world have no idea what the circadian rhythm is, let alone have any concept of what controls it or how it affects your physiology, **circadian rhythm is a massive factor in your health. And our modern world—which is almost perfectly engineered to disrupt your circadian rhythm—is wrecking your health, vitality, body composition, and quality of life.**

Normally, autophagy in humans rises and declines with a strong daily rhythm that is dictated by the circadian rhythm. Since autophagy is upregulated by fasting (or starvation), it strongly increases at night and in the early morning, since no food is taken during the night.

**Humans and other organisms exhibit a strong daily rhythm of anabolism (building up the cells) and catabolism (breaking down the cells). Both are equally necessary to life and health. With disrupted circadian rhythm, however, that rhythm declines in amplitude—it is only weakly activated or not at all.**

In short, having an optimized circadian rhythm or a disrupted circadian rhythm can be the difference between poor health, body composition, and quality of life versus excellent health, body composition, and quality of life. Consider the following table that shows the typical characteristics that are strongly affected by circadian rhythm:
There are 3 main factors that dictate your circadian rhythm:

1. Light
2. Movement
3. Nutrients

There are a few others that I will discuss as well, but these are the 3 big ones. I go in-depth on how to optimize ALL of these factors in The Energy Blueprint program, but for now, I’ll just look at light.

The big problem in the modern world is this:
"Humans evolved on a planet without electric light over thousands and thousands of generations. The body is designed to be alert and awake during daytime hours and to sleep at night. Now we have a 24-7 society that isn’t in harmony with our biological design.”

■ Professor George Brainard

In short, the two big problems are these:

1. You now live your lives primarily indoors, with minimal to no natural sun exposure.
2. You have artificial lights (from your TVs, computers, tablets, light bulbs, and cell phones), which emit light that enters your eyes late at night and give your brains the “daytime signal.”

The combination of these two things disrupts your circadian rhythm, which in turn disrupts your autophagy... which in turn, makes you susceptible to countless diseases, ages you faster, and lowers your energy levels. In short, it massively decreases the quality of your life.

The first step to fixing your circadian rhythm is to stop exposing yourself to the stimulus that sends your brain the signal “it’s daytime—the time to be awake and active” at night!

Naturally, when your brain is getting the signal that it is daytime at nighttime, it blurs the lines—on a biological/neurological/hormonal level inside your brain and body—between day and night. This is exactly the opposite of what is needed for a properly functioning circadian rhythm. A healthy circadian rhythm is all about having the “day signals” during the daytime, and the “night signals” during the night.

Blue light is the most significant aspect of that, since blue light entering your eyes and feeding back into your brains (and suppressing melatonin production) is the primary signal that allows your brain to tell when it is daytime.

Numerous studies have shown that exposure to room lighting or electronic devices at night can impair sleep quality, performance, energy levels, and predispose you to disease. 9, 10, 11, 12, 13 Thus, exposing yourself to blue light at nighttime is the first thing that needs to be fixed in order to entrain a healthy circadian rhythm.

After the sun goes down, it is time to minimize/eliminate your exposure to blue light as much as possible. You want to have the absence of artificial light (or at least light in the blue spectrum)—like from room lighting, computer screens, cell phone screens, and TVs—after sunset.

Does this mean you need to isolate yourselves from Western civilization and modern technology, and return to the caves like our Paleolithic hunter-gatherer ancestors?

No, absolutely not! With a little Neolithic technology, you can replicate the Paleolithic environment without much effort at all!

1. Take care of your computer: The first thing I would recommend for you is to install f.lux software on your computer. This app sets itself to your local time zone and actually alters the light spectrum output of your computer screen according to the rise and fall of the sun in your area. It shows a normal computer screen during the daytime, and then, after the sun goes down, a more orange-looking (but still completely functional) screen that emits far less blue light.
2. Take care of your phone: Second, for your cell phone, I suggest doing the same thing—install an app that modifies the blue light output after sunset. This is a tad more complicated, since iPhone users are required to jailbreak their iPhones to install f.lux (or you can try this), and Android users can’t use f.lux at all, and must use a different app, called Twilight, which you can find here. (Note: both apps are free).

3. Take care of your TV and other devices: Unfortunately, there are still a couple other sources of blue light exposure at night that must be dealt with: Television screens, tablets, and other miscellaneous electronic devices. Do not worry, I am not going to ban you from watching TV at night!

There are a couple potential ways of dealing with this situation:

- Blue-blocking screens which you can put over various devices.
- Blue-blocking sunglasses

The latter is probably the more effective (and cheaper) option, as wearing blue-blocking sunglasses around the house at night will effectively block all potential sources of blue light (including house lighting) entering your eyes without having to worry about each individual potential light-emitting device.

Because it is specifically blue light that affects the secretion of melatonin, if a person is wearing blue blocker sunglasses, melatonin secretion will not be affected. There is even some interesting research on this subject:

- One study used either blue-blocking (amber) or uv-blocking (yellow-tinted) safety glasses for 3 hours prior to sleep. The group wearing blue-blockers experienced significant improvement in sleep quality relative to the control group. Mood also improved significantly relative to controls.14

- In people with ADHD who suffer from insomnia, blue blocker glasses were extremely effective in reducing anxiety and improving sleep quality. The average sleep quality index score decreased “from 11.15 to 4.54, dropping below the cut-off score of 5 for clinical insomnia.”15

The only downside of blue blocking glasses is that it does require you to wear glasses (some of which are quite goofy looking) around your house at night, which some people simply don’t want to do.

Whether you choose to go with blue-blocking screens, electronic abstinence for a couple hours prior to bedtime, or blue-blocking sunglasses, you simply must find a way to eliminate your evening exposure to blue light.

There is really no excuse—even if you absolutely must use your cellphone, computer, and TV incessantly after sunset, you can eliminate all blue light emanating from them by using either f.lux or by using blue-blocking screens.

So that is how you get started amplifying autophagy by optimizing your circadian rhythm.

**Strategy #2: Slow Aging and Boost Energy by Amplifying Autophagy with ... WATER?!**

The main signal for autophagy to start and to increase is a decreased concentration of the amino acid leucine in the blood. You may recognize leucine as a key signaling molecule for the growth of muscle. The opposite occurs with leucine too, namely decreased concentrations signal muscle to be broken down.

Here is the key point. As mentioned, autophagy is regulated by levels of leucine in the blood, but when your circadian rhythm is dysregulated or you are unhealthy or you are older... the ability to respond to leucine by increasing autophagy decreases. The cells in an aging or unhealthy body simply cannot turn autophagy on at the same level that they would turn it on in youthful cells.
Here is the trick: decrease levels of leucine during the fasting phase so that even with diminished autophagy capacity, autophagy is started.

How do you do this? Very simple: **drink water** at night or in the morning during the fasting period. This will dilute the bloodstream and hence the leucine in it, causing autophagy to be started and/or increased.

Thus more cysteine will enter the blood, glutathione will be made from it, and oxidative stress decreased. Doing it at night is not the best idea for most people as it can disrupt your sleep by making you get up to go to the bathroom. So for most people, drinking lots of water first thing in the morning before eating anything and then waiting at least 45 minutes between the water and having any food is a key habit for optimizing autophagy.

**Strategy #3: Slow Aging and Boost Energy by Amplifying Autophagy by Increasing Your Fasting Window**

As I explained above, autophagy happens in a fasted state. It is only when the body has a break from processing incoming food for **many** hours that it can enter a state of autophagy.

The big problem in the modern world is that your daily feeding and fasting windows have changed over the last 50 or 60 years! Most traditional human societies keep a feeding window of between 8 to 12 hours. And thus a nightly **fasting** window of 12-16 hours. (Which is plenty of time for the body to go into autophagy mode).

The problem is that as modern humans living in the Western world, your feeding windows keep getting longer and longer, and your fasting windows keep getting shorter.

A phenomenal new study has come out with important lessons titled “**A Smartphone App Reveals Erratic Diurnal Eating Patterns in Humans that Can Be Modulated for Health Benefits.**” (Published in the journal Cell Metabolism). They used an app to monitor the typical feeding patterns of most Americans, and found some very important things that many other study designs have not been able to pick up.

Here are some of the most important findings:

1. **Most people have a daily feeding window of 15 hours or longer.** (A LONG feeding window that extends almost from immediately after morning wake up to the moments before sleep).

2. **Most people fast each day only for the time they're in bed** (just 8 or 9 hours). Note that for most people, this period of not consuming coincides with complete sedentariness (sleep), which all but eliminates any extended periods of BURNING off energy without consuming any food. Most people are essentially ALWAYS in a state where their energy stores are topped out, and they never really put their body in a state where tapping into bodily reserves gets switched on for any significant length of time. It's sort of like stopping at the gas station after every 25 miles you drive. You're always topping it off without ever really fully using the tank of gas that's in there.

3. **Most people consume a large portion of their daily calories in the evenings after 6pm** (after sunset in many cases), in addition to the very long feeding windows.

4. **There was significant variation in meal timing patterns from weekdays to weekends, which they likened to metabolic jetlag.**

5. **They found that the majority of calorie consumption is happening in BETWEEN MEALS as snacks.** (And many people are unconscious of how much they're actually consuming in between meals).
6. **Shorter feeding windows have big benefits!** When overweight individuals shortened their feeding window from greater than 14 hours to 10-11 hours, they lost fat, slept better, and improved their energy.

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**ERRATIC DIURNAL EATING PATTERNS IN HUMANS**

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www.theenergyblueprint.com
So there you have it. Three simple yet powerful ways to amplify your body’s autophagy, add years to your life, prevent dozens of different diseases, and dramatically boost your energy levels.

I will leave you with a little testimonial from one of my clients on the power of implementing the strategies in The Energy Blueprint system.

“Hi Ari,

It has been around one year since I went on The Energy Blueprint and started implementing the strategies into my life. I have to admit, when I first reached out to you, I was at rock bottom.

I had spent the past 7 years struggling big time with my body and my energy levels. I literally tried every single diet that is out there, which all left me with terrible energy and heavier than when I first started them. I struggled through this while I was a collegiate soccer player, so I was burning tons of calories and no matter what I did with my diet, it was obvious I had a horrible metabolism.

Before I started college I was very lean, and had been lean all of my life. Then things just changed abruptly and I started having major hormonal issues—I exploded in weight and my energy was wrecked. The issues with my weight lead me to extreme depression, anxiety problems and a whole other slew of issues.

Simply put, your work has saved my life. Before your program I felt completely hopeless, but things started changing for me pretty quickly after starting. Making changes at first was very hard so I did a little at a time and it really has added up over the past year.

Your work has been so life changing to me that whatever advice you give, I take. I know that you don’t throw BS out there and actually care about your clients and the information you are providing. And your stuff really works, like REALLY works. In the field of fitness and nutrition it is so hard to find trustworthy and honest individuals but you have proven yourself above and beyond to fit these characteristics.

Finally, I went yesterday to my doctor to get my blood test results and my doctor compared it with a year ago and he was astonished at how amazing my blood tests came out.

Most importantly... I have SO much energy! I used to be sluggish and exhausted everyday of my life and now I only have minor symptoms around my period. On top of that, I have also lost 20 pounds!

I am beyond grateful and I can’t say thank you enough. Your work is amazing. People see me and ask about my success and I always point them in your direction. I have been burned by a lot of diets, programs and yours is the only one that truly works. Thank you again for everything, you have changed my life tremendously.

Sincerely,
Ashlee Burt”