Harness Autophagy For Profound Cellular Renewal Transcript

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Introduction to Autophagy and Fasting

Hey, guys. Dr. David Jockers here today. I'm talking about autophagy, fasting, so how to use fasting and also autophagy enhancers to increase this process of autophagy.

Now autophagy actually means cell eating. And I know that sounds, you know, pretty interesting right there. But basically this is what our body does is a natural self recycling process that our body undergoes.

And it's absolutely critical for reducing your risk of chronic disease and really thriving in life. You see all of the cells in our body become damaged over time from chronic oxidative stress, almost like a rusting process inside of our body.

And inside each cell we have organelles, things like our endoplasmic reticulum and our mitochondria. And these things are being blasted by something called ROS reactive oxygen species.

So they're rusting from the inside and over time we develop aged or dysfunctional mitochondria. We have a term for that. We call it senescent mitochondria.

And as a whole, if we have a lot of senescent mitochondria, we call the cell a senescent cell in senescent cells. When they build up, they are really problematic for our body because they're not going to function the way that they should.

How Autophagy Recycles Damaged Cells

So if we have a lot of senescent cells in our liver, for example, the liver is not going to be able to deactivate toxins, to produce bile, to do the things that it really needs to do.

And therefore, we're not going to function the way that we should. If we have a lot of senescent cells building up in our skin, we're going to have age spots, wrinkles, right?

We're going to a lot of different health health issues and are outside appearances of, you know, of health issues. If we have a lot of senescent cells building up in our brain, that's when we develop neurodegenerative conditions, dementia, Alzheimer's.

It's a lot of neurons that are not functioning the way that they should. So we're not able to remember things the way that we should or are not able to have good cognitive recall and cognitive acceleration.

Our ability to think sharply and quickly, we're not going to function the way that we should. So autophagy is a self recycling process that we should naturally be going through where we are regenerating all these damaged organelles.

We're taking the mitochondria that's been damaged and is now dysfunctional and we're breaking it down and we're taking the raw materials and we're forming new, healthy, more stress resilient mitochondria that are able to function and thrive live under stress.

And this is a continual process that should be going on now. Our ancestors went through this process naturally because and it really had a lot to do with, you know, just how how the availability of food.

You see, when food is very available and we're able to consume a good amount of it and we keep our belly full, we're going to have higher levels of insulin.

And insulin is this hormone that takes sugar out of the bloodstream, for example, and it puts it into cells. It also takes key nutrients out of the bloodstream, like magnesium, puts it into the cells.

It turns on energy production within the cells and it stops fat burning, right? So it's a building hormone. It tells us to build. It will actually cause us if we have high insulin and high, you know, a high amount of calories, it will it will cause us to store fat and for short periods of time.

That's actually a good thing. We need higher levels of insulin at times for short periods of time. However, we should also be going through periods where we have very low levels of insulin.

And this would naturally happen if we have what's called a feast or famine cycle where when food is available, we consume a good amount. When it's not available, we're not consuming food.

And then what happens? Insulin goes down, and then when insulin goes under a certain threshold, it triggers this innate mechanism of autophagy where our body says, okay, we don't have a lot of energy coming in, so now we need to break down stored forms of energy.

We can get sugar or glucose from our liver, from our muscles. We have a stored form called glycogen. We can break down fatty acids that can be used for energy in our own body fat.

But we also need proteins. We need proteins for really all cellular functions. And so where are we going to get the proteins if we're not getting them from our diet?

Well, we're actually going to get them from the from the organelles within ourselves. For example, the mitochondria. We're going to break those down. They're made up of different amino acids and proteins.

We're going to break that down, take those raw materials and build new mitochondria. This is what happens when insulin is low. We're going through this sort of catabolic state, so we have an anabolic state.

When insulin is high, we're building, we have a catabolic state. When insulin is low, now we're breaking down and we don't want to be in either one too long, right?

We want to be, you know, kind of cycle through both of them. When we're a young child, we're going to primarily be in a anabolic state.

Insulin, Feast-or-Famine Cycles, and Autophagy

Children, young children, infants, they're growing very rapidly and they need to consume lots of nutrients pretty much throughout the whole day. Right.

As kids get older and turn into teen agers, you know, they're still in a kind of an anabolic state. But once you get to around, you know, your early twenties or so, you're no longer needing to be in that anabolic state all the time.

And now you actually want to preferentially favor the catabolic state so you can break down all this damaged tissue, recycle it, and turn it into new healthy tissue.

So that's the autophagy process. The best way to promote autophagy in your body? We're really the top two ways. Most our research ways are fasting or going through periods of time.

You know, we call it time restricted feeding or intermittent fasting where you're not consuming food for periods of time. And then also regular exercise.

Exercise itself drives up autophagy mediated mechanisms in our body. Why? Because we need to produce more energy when we're exercising, and particularly if we do fasting exercise where, you know, for some people that you have to eat a big meal and then an hour or two later they're exercising.

We're not going to get as much autophagy because again, insulin's higher. But if we're exercising, for example, in the morning, we haven't eaten anything.

Now we're in a fasted state. Exercise itself is going to drive insulin down. We're going to get under that threshold. We're going to stimulate more of this autophagy mechanism.

So here's how we get into the state where we are really prioritizing autophagy and cell renewal, getting rid of these senescent cells and regenerating the cells.

Right. And literally reducing the aging process in our body and turning on, you know, basically the production of young embryonic cells in our system.

Right. Cells that are built to thrive and are very stress resilient. Number one is we have to improve our metabolic flexibility. I mean, honestly, that right there, it's the most important thing we can be doing for our health is improving our metabolic flexibility.

That means our ability to burn sugar as well as fat for fuel. Many people are stuck in chronic sugar, burning mode, beating that they're very poor at burning fat for fuel.

And how do we know for metabolically inflexible? Well, for some individuals, they're just you know, they have an excess amount of of body fat. Right. And that's obviously a clear sign.

They're not good at breaking down fat. Right. For many individuals, the reason why they're overweight is not necessarily I mean, obviously, diet plays a big role.

It's not necessarily they're eating too much in many mechanisms. It's because they're not good at breaking out. They're not good fat burners. They're not able to break down the fat that they have in their system.

So that's one way. However, certain genetic types, certain body types may be lean, but they may not be able to go longer periods of time without food.

Like every 3 hours, they're feeling hypoglycemic. Their blood sugar is dropping. They're feeling dizzy. You know, they need to consume food. They're feeling irritable, they're having mood issues.

And so they need to consume food. When we're metabolically flexible, we can go longer periods of time without food. And our body says, okay, well, I don't have food coming in, so now I need to switch into breaking down stored body fat, breaking down stored sugar and utilizing that, getting that into the bloodstream and getting it into the cells.

So I have energy. We all have reserves. We have a lot of savings in our bank account, but we have to be able to use that in order to be metabolically flexible for some people that are not good at using that, and therefore they're stuck in this chronic sugar burning mode.

So how do we improve metabolic flexibility? Well, number one, I recommend a lowering reducing the amount of carbohydrates and in particular, reducing the amount of times we're eating throughout the day, prioritizing proteins.

Improving Metabolic Flexibility

I've done a lot of previous videos on this. I recommend 30 grams. When you're consuming a meal, 30 grams of protein, 30 or more, 30 plus grams of protein are roughly somewhere between 25 to maybe 40 grams of healthy fats.

For some individuals, if they have a lot of gallbladder issues, if you feel nauseous when you consume 25 plus grams of fat, maybe a little bit last 15, 20 grams of healthy fats coming from extra virgin olive oil, avocados, grass fed meats, things like that.

But you want that because that is kind of the foundation for a blood sugar stabilizing meal. You can consume carbs on top of that, maybe fruit, maybe root vegetables, things like that.

But really prioritizing the protein and the fats is going to create the meal that stabilizes your blood sugar and creates metabolic flexibility. So we want to do that.

We want to get regular exercise, get our body moving, doing some strength training, you know, building lean body tissue, regular exercise, regular movement, really, really critical for metabolic flexibility.

Our ability to burn fat or sugar for fuel and then also reducing stress and prioritizing really good sleep. We could be doing these things well, but if we're chronically stressed for not sleeping well, right?

We're not getting good quality, deep sleep. Our sleep cycles are all over the place. Our circadian rhythm is out of whack. We are not going to get metabolically flexible.

So look at some previous videos. In fact, I'll put some of them in the show notes where I talked a lot about the advanced strategies for improving sleep.

Right. And that's super critical. We've got to get that under control. So we're doing this. We're doing 2 to 3 meals a day, and over time, you're going to notice you're more satiated between meals.

And it's just easier to go longer periods of time between meals. You might eat breakfast and dinner, you might eat lunch and dinner. You know, you might eat your meals in the eight hour window or a six hour eating window.

And when you're able to do that, when you're able to kind of condense and consolidate your meals to, let's say, a six or eight hour eating window, let's say from like 12, you have your first meal, six, you have your second meal, you're ready for this next step, which is a 20 to 24 hour fast.

This is really when you upregulate autophagy. When you're metabolically flexible, you're able to comfort do a 20, 24 hour fast. What I mean by that is during that 20th, 24 hour fast, you don't have these major issues with your mood.

You don't feel hangry. You might have like a slight urge, like, oh, I'd like to eat some food. You know, you might have kind of a normal sensation of hunger, particularly at a time of day when you would normally eat food.

Or if you're smelling food that's normal and healthy, that's fine. But if you're noticing a lot of mood issues, sleep issues, you just feel awful. That's a sign that you're not comfortably doing that fast.

So go back up here if that's the case and focus on these things right here, get those under control and then go back and try the 20th, 24 hour fast. You should be able to comfortably do that.

That's when you know your body is metabolically flexible and you're really up regulating the autophagy. It's just something I do every single week. I do a fast that's somewhere between 20 to 24 hours.

It's one of the most powerful things I do. I feel like a new person after I do this, because literally a lot of my cells that were dysfunctional, that were senescent, that were damaged, I get rid of those, right?

My body gets rid of those cells or those cellular organelles and regenerates new, healthier, more stress resilient cells that allow me to thrive in life.

And so I recommend doing this pretty much once a week is a great strategy now for young, active menstruating females. I recommend doing it, you know, basically 2 to 3 times a month, the week before your menstrual cycle can be a tougher week because that week you need a lot of progesterone.

This key hormone progesterone in your circulation. And when you fast you naturally going to have higher levels of

cortisol. Cortisol competes with progesterone and cortisol goes up, progesterone goes down.

So during that site, that part of the cycle, you need more progesterone. That's not a good time. Most women notice they have more cravings or hungrier during that period of time, so that wouldn't be the best time to be doing this.

But the other weeks, typically you're going to feel a lot better doing the 20, 24 hour fast. Number three. So now you get this down. Number three, this is where you take it to the next level, fast exercise.

So now you do this sort of a fast, you also stack in exercise and you could do that exercise at any point during the fast.

Using 20 to 24 Hour Fasts

My favorite part, especially if you're if your goal is weight loss it's not as important if your goal is I want to build muscle or I want to preserve my lean body body tissue, I recommend doing it at the end of the fast.

As you're going through this fast, your growth hormone, human growth hormone, HGH is going up. HGH is your quintessential anti-aging hormone. It helps you with burning fat, helps build your immune system, build bone tissue, preserves lean body tissue.

And it's it's in a sense, it will preserve and if you stimulate it properly, like by doing exercise, particularly strength training, it will actually increase your muscle tissue, the development of your muscle tissue.

So fasted exercise at the end of that fast, that's when you do your resistance training, your strength training. All right. When you do that strength training afterwards, roughly about a half hour after or an hour after, you're consuming amino acids.

I like just branch chain. Amino acids or essential amino acids is a really great strategy to kind of break that fast because you're getting these anabolic forming amino acids right into the system.

They're going to stimulate even more muscle growth because you've got the HGH is already elevated. Now you're adding in those amino acids that trigger muscle growth.

Now you're going to get better preservation of that lean body tissue, better strength development fact. I usually notice that like my best workout is in that fully fasted state.

Some are 20 to 24 hours fast and sometimes even a little bit more. Oh, I feel fantastic. So that's when you get your fasted exercise. If your goal is just weight loss, you can fit, you can exercise at 8 hours, fasted or 16 hours, and then just fast until you're in that range.

What I do notice is for some individuals, they have a hard time fasting after they exercise. So they exercise when you exercise your stored glycogen and your liver and your muscles becomes liberated because you need more blood sugar, higher blood sugar to produce more energy that sometimes can trigger a little more insulin, which can drag down that blood sugar in order to get into the cells and might trigger some cravings.

So for some individuals, they notice it's harder to get into this range if they if they exercise earlier. So in that case, again, wait till the end of the fast two to strength training.

So those are the first three strategies. And then number four, this is going to be not as effective as these three. These three are like the foundation.

This is 95% of it, but you can get another 5% enhancement in autophagy by stacking in some of these things right here, doing something like coffee if your body tolerates it.

Fast Exercise and Muscle Preservation

Coffee stimulates the ampk pathway inhibits the tau pathway in your in your physiology, which activates more autophagy. Very good for blood sugar stabilization.

There's compounds like chlorogenic acid capac acid that help support this green tea is another one that will help. So if you don't do as well with coffee, maybe you do well with green tea.

It's got catechin antioxidants that help support obviously bring down inflammation in your system. They also help kill they're called sinal lytic. So they help basically help your body to break down these senescent mitochondria or senescent cells and get rid of them so green tea can be really effective.

Things like turmeric that you can get to drink tea. And that's a great way that's you know, it's not going to break your fast and you're going to get that herb in your system.

Citrus Bergamot, which is the compound in a lot of Earl Gray Teas over 80, is Citrus Bergamot. So you can find that in a lot of different tea blends and that will help.

And really almost all the different teas out there, like Camomile has compounds that can help support autophagy. Some are a little stronger than others, like green tea and coffee or probably in citrus bergamot out are probably the three strongest, but things like turmeric Ginger can help stimulate autophagy.

Rosemary Oregano. Basil Right, things like that all can help. They have things like can't a cynic acid rosemary intake acid that support autophagy as well and then a supplement that can help something called proteolytic enzymes.

Proteolytic enzymes are enzymes that break down proteins. You take these on an empty stomach while you're fasting. They're going to go in, they're going to break down dysfunctional proteins.

Autophagy Enhancers and Supplements

Like, for example, you probably heard of C-reactive protein. That's a inflammatory compound that will measure on blood tests, and we can actually measure your risk of heart disease by where your C-reactive proteins protein is.

So they're going to go in, they're going to scavenge C-reactive protein, they're going to scavenge scar tissue, they're going to scavenge abnormal proteins that are developing abnormal cells as well, and they're going to enhance that autophagy process.

So that's a supplement product that can be helpful. You can also find supplement products with like things like turmeric and ginger and quercetin and resveratrol that also help to boost autophagy as well.

But all of that is like 5%. The 90 to 95% is right here getting this foundation down first. And then this right here comes in next, right. So that's really what you want to do.

Autophagy is an incredible mechanism. I forgot to mention this in beginning, but in 2016 the Japanese researcher Yoshinori Ohsumi, won the Nobel Peace Prize for his discoveries on Autophagy.

And now, seven years later, we've realized Autophagy is, you know, basically one of those important mechanisms that we can express right and really cycle through.

We don't want to have a chronic, high level expression of autophagy because it is catabolic, but we want to cycle it where at times we're at high level of autophagy and at times we're not.

Key Takeaways and Closing

And if we cycle it appropriately, it's one of the best things for reducing your risk of chronic disease, enhancing your

aging, your longevity, and allowing you to thrive deep well into your eighties, nineties and perhaps even into your centenarian years.

So guys, this is a powerful video if you know anybody that you care about. Right. And please share this video with them. Anybody you know that wants to improve their health, their longevity, their risk of chronic disease, share this video with them that can literally save and transform their life.

And if you have not subscribe to our channel, now is the time to do that. Hit the bell button. That way you get notified whenever I put up a new video and we'll see you guys in a future training blessed Everybody.