

The Biggest Hidden Cause of Aging



The best way to optimize health is to follow a healthy diet, follow a healthy lifestyle (physical activity, sleep well, social support, avoid stress, etc), and avoid polluting your body with smoke, drugs, traffic pollution, alcohol, etc.

Three factors (diet, lifestyle, pollution) all point to a common cause of aging: the deterioration/failure of biological systems in the body.

A healthy diet will do more than anything else to keep you healthy and extend lifespan. A healthy diet equips the body to fight off illness and minimize the failure of biological systems. More specifically, a healthy diet greatly protects body organs and muscle tissue from deteriorating.

As you age you lose muscle. Remember that all our organs (including the heart) have muscles, so we're not just talking about arm and leg muscles. When you lose muscle as a result of aging, every organ in your body suffers, and just about every aspect of your health is affected, making you much more prone to illness and premature death.

One of the best yet 'hidden' ways to optimize your health is to minimize muscle -loss throughout your life. But how do you do this? Conventional advice tells you to do muscle-strengthening activity and eat more protein.

Lifting weights, push-ups, squats, etc. can be good for general health, and may strengthen your arm and leg muscles if persevered with. But such activities have little or no effect on the many organ muscles throughout your body.

Equally, eating more protein has little effect (if any) on your muscles. This is so because of the following reasons:

1. Virtually none of the protein you eat ends up fortifying your muscles. Protein is very much a building block for our muscles, bones, cartilage, skin, hair, and blood. The body makes its own protein from a 'pool' of amino acids that is always maintained. It is these amino acids that provide protein for all the cells in the body, including muscle cells.

Some of the amino acids derived from the diet do go into this pool of amino acids maintained by the body. But many amino acids from the diet are excreted since they are surplus to requirements.

2. Amino acids are shared around the body to all our cells, not just to muscle cells. So our muscle cells receive a tiny portion of the amino acids shared around the body.

3. Muscles are made of muscle cells. And muscle cells are made of strings of amino acids that we call protein or protein fibers. Muscle cells don't divide or multiply. So whatever muscle cells you are born with you won't get any more and you're stuck with them for life. Muscles grow stronger when muscle cells acquire more strings of amino acids, i.e. more protein. With regular physical activity that puts a greater stress on the muscles than what they are used to, the muscles can be made stronger (or be prevented from becoming weaker).

But much research shows that the effect of exercising specific muscles is very marginal, and to be effective such exercise must be consistent and long-term to have any significant effect. Furthermore, such exercise has virtually no effect on organ muscles. "Rapid muscle growth is unlikely with exercise. It takes time and is relatively slow for the majority of people." Source: How Do Muscles Grow? The Science of Muscle Growth, March 2016, www.builtlean.com.

4. The body cannot put amino acids into your muscles unless such muscles are stressed through regular strength-training activity. This creates microscopic tears in the muscles that are then filled with new protein, causing such muscles to become bigger or stronger. Hence, eating more protein without such strenuous long-term physical activity will have no effect on your muscles.

When we talk about 'losing muscle' we don't lose muscle cells as such, we only lose chains of amino acids inside the muscles, making the muscles thinner.

The point here is that exercise and protein consumption have a minimal effect on our arm and leg muscles, and probably no effect on our many organ muscles.

The argument in favor of eating more protein to strengthen muscles usually goes like this: "Exercise burns muscle by oxidizing amino acids. Therefore, a slight increase in protein intake may be beneficial to endurance athletes by replacing the protein lost in energy expenditure and protein lost in repairing muscles".

The reality is more like this: "Exercise does not burn muscle by oxidizing amino acids. Exercise drains the muscles of energy - such energy is not replenished from muscle protein or from body fat. Muscle energy is replenished from the food you eat. A slight increase in protein intake does not benefit endurance athletes by replacing the protein lost in energy expenditure (this is biologically incorrect). We do indeed need protein from the diet as this provides the body with essential amino acids that enable the body to maintain a pool of amino acids that are fed to all our body cells, including the maintenance and repair of muscles".

If exercise and protein consumption does so little for our leg and arm muscles (and virtually nothing for our organ muscles), what is the solution? How can we at the very least minimize the gradual loss of muscle as we grow older? How can we best protect our organ muscles? These questions are fully answered in what follows.

With the passage of time we gradually lose muscle which not only affects our arms and legs, it affects all our organs, including heart muscle. General muscle loss is a principle cause of age-related illness and a shortened lifespan. By minimizing muscle loss throughout life we can greatly optimize health and live a longer and better life. In brief, weak organs caused by muscle deterioration is a major cause of premature death.



But when we talk about protecting our muscles we are not talking about any kind of bodybuilding activity or acquiring bulging muscles. Here we are just talking about minimizing the gradual erosion of our muscles as we grow older. You will be pleased to know that there is an easy and simple way to do this which can be summed up in two words: minimize gluconeogenesis.

By simply minimizing gluconeogenesis in your life you will greatly minimize muscle loss more than anything else you could do. Gluconeogenesis is defined by Wikipedia as follows: "Gluconeogenesis is a metabolic pathway that results in the generation of glucose from certain non-carbohydrate carbon substrates. These substrates include amino acids, glycerol, pyruvate and lactate".

Put simply, gluconeogenesis is a biological process in which our bodies make glucose when there is insufficient glucose from the diet. Our blood stream must always carry a certain level of glucose at all times or we will die. Our brain, nervous system, red blood cells and other parts of the body totally depend on a continuous supply of glucose from the blood.

So when we eat insufficient carbohydrates (and when we sleep), our blood glucose level goes down below the norm. This compels the body to make its own glucose so as to push up the level of blood glucose. To do this the body strips amino acids from muscle tissue. Then like an alchemist, the 'cannibalized' amino acids are mixed with other ingredients found inside the body and the end result is much needed 'home made' glucose.

When gluconeogenesis ensues, it mainly strips protein (amino acids) from skeletal muscle. But it also strips protein from organ muscle, albeit at a lower rate. Just about any organ (including the heart) can be affected by gluconeogenesis.

"A catabolic or tissue breakdown state [i.e. gluconeogenesis] can affect any organ or body system, depending on one's particular weaknesses. For example, if excessive tissue breakdown occurs in the joints, the result may be painful joints or arthritis. If excessive tissue breakdown occurs in the stomach, the result may be an ulcer. If it is in the heart muscle, cardiomyopathy can result. Similarly, tissue breakdown can affect any organ or system". Source: Protein Catabolism, Analytical Research Labs, www.arltma.com.

By understanding that gluconeogenesis is triggered by low blood glucose, we can appreciate why we lose muscle at night when we sleep rather than during waking hours. It happens because in the absence

of food during the night our blood glucose goes down, thus triggering gluconeogenesis. This is perfectly normal and this is how we gradually lose muscle as we age.

Within a few hours of sleeping the liver is almost depleted of its glycogen stores as the central nervous system (and in particular the brain), has a great demand for glucose as an energy source.

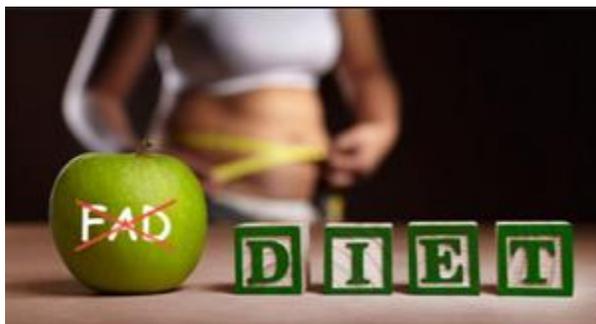
As the night progresses towards the end of the sleep, insulin and glucose levels drop to their lowest and gluconeogenesis is in full swing.

The best advice is to minimize muscle loss by minimizing gluconeogenesis. This is much more practical and effective than trying to increase muscle mass through exercise. However, that is not say you shouldn't do muscle-strengthening workouts. Ideally you should do both: minimize gluconeogenesis and be physically active in every way you can without resorting to harmful sweaty/breathless exercise.

As mentioned and to summarize, the body must always maintain a minimum level of glucose circulating in the blood, so gluconeogenesis is an emergency measure to keep glucose available to the brain and the body. It's an emergency because the body cannot immediately start to use fat for fueling our muscles and physical movement.

Fat burning that replaces glucose burning in the muscles takes a long time to slowly ramp up (several days), but the body and brain cannot wait so in the absence of sufficient glucose from food the body is forced to use gluconeogenesis to make new glucose from compounds found inside the body. In effect, the body is forced to cannibalize itself by stripping (consuming) protein from muscles, including heart and organ muscles. Over time this can seriously weaken and damage your muscles and organs. You always want to minimize gluconeogenesis in your life.

Incidentally, you should never contemplate any kind of low-carb or ketogenic diet (or fasting regime) as this greatly increases gluconeogenesis and muscle loss. "A ketogenic diet reduces muscle gain or promotes muscle loss. Studies in children on ketogenic diets have shown that they experience growth impairments in height and mass. Ketogenic dieting is counterproductive. Muscle loss is too high a price to pay for reduced fat". Source: Abridged extract, Team MD, Ketogenic Diets Cause Muscle Loss



How can we minimize the incidence of gluconeogenesis in our lives? We can do it by following a high carbohydrate diet that excludes sugary foods and processed carbs. Put another way, we should eat plenty of high-carb foods that do not cause glucose spikes, and we should avoid those foods that do cause glucose spikes.

Non-processed carb foods such as lentils, yams, sweet potatoes, beans and many other legumes and starchy vegetables offer super-healthy nutrition that provide sustained energy without making you fat.

Best of all, these foods trickle-feed glucose into the blood without making glucose or insulin shoot up. These super-foods should form the bulk of your diet. They minimize gluconeogenesis and protect your muscles, and in so doing they protect all your organs.

A diet high in non-processed carbs truly is a principal way to optimize health and extend lifespan. Your last meal at night should include a non-processed carb food so as to minimize gluconeogenesis while you sleep. And your breakfast should include at least one whole fruit (chewed well) as this stops gluconeogenesis from the night's sleep.

Do not delay breakfast thinking that this is healthy or that it will help you lose weight. When you get up you're in a state of gluconeogenesis, so the sooner you have breakfast the better. Those who promote intermittent fasting by abstaining from breakfast are risking regular and significant muscle loss.

To summarize, you should in general minimize gluconeogenesis in your life so as to minimize muscle loss and protect your organs. This is a principle way of optimizing your health and extending lifespan. You do this as follows:

1. Make non-processed carb foods the bulk of your diet. Include plenty of legumes and starchy vegetables in your meals. They are non-fattening, they provide sustained energy and they minimize gluconeogenesis.
2. In particular, make sure that your last meal of the day is high in non-processed carbs.
3. Your first meal of the day (breakfast) should include fresh whole fruit, eaten in moderation and chewed very well. This provides the body with glucose to halt gluconeogenesis without making your glucose level shoot up. Combine this with a little protein such as an egg, a lump of cheese or some lentils or beans. Protein helps fill you up and stave off hunger.



4. Avoid sugary foods and processed carbs as they make blood glucose shoot up and this triggers an insulin response. This is very unhealthy and increases the risk of diabetes.
5. Avoid low-carb and ketogenic diets (and fasting regimes of any kind) as they are unhealthy for many reasons, and in particular they greatly increase gluconeogenesis and muscle loss.
6. Several small meals/snacks during the day are better than fewer large meals. For example, six small meals will be healthier than three large meals. This is much better for health generally and greatly minimizes gluconeogenesis.

Summary: Minimize gluconeogenesis in your life by following a high carb diet that avoids sugary foods and processed carbs. This greatly protects your muscles and organs.

Bad Carbs

- x Cereal
- x Orange Juice
- x Fruit Juice
- x Pasteurized Milk
- x Processed Foods
- x Canned Dinners
- x Frozen Dinners
- x Non-Natural Foods
cause you to **store fat!**

Good Carbs

- ✓ Apples
- ✓ Bananas
- ✓ Pineapples
- ✓ Sweet/Baked Potatoes
- ✓ Brown and White Rice
- ✓ Oatmeal
- ✓ Pasta
- ✓ Whole Wheat Bread
- ✓ And Many More...

Source: The Science of longevity by Russell Eaton

To find out more information about how to extend your life visit our website at www.Dragonfirenutrition.com

