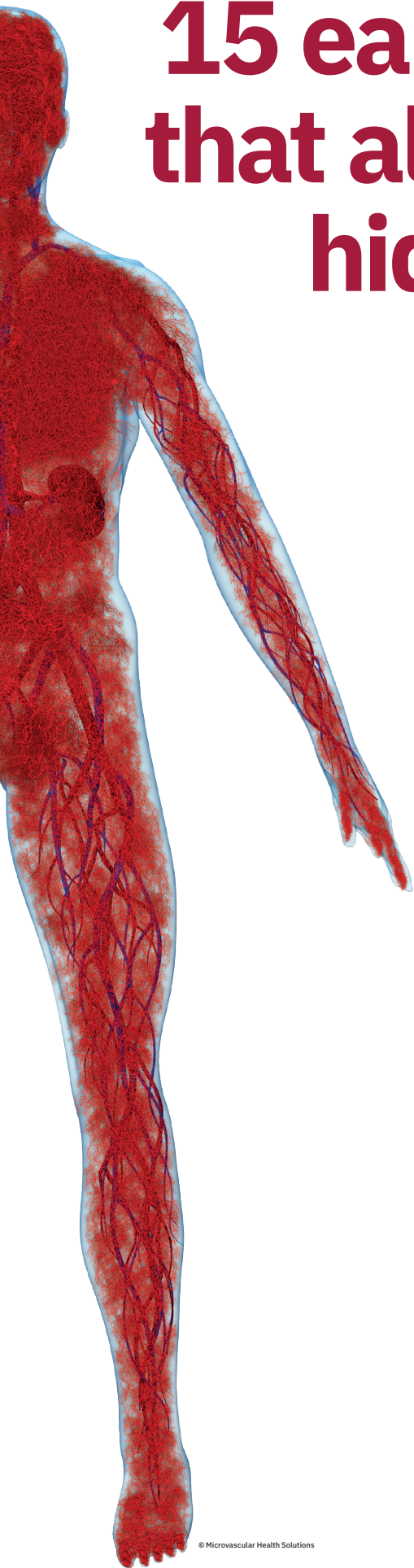


15 early warning signs that all point to a single hidden problem



- ✓ Memory Loss
- ✓ Lack of Focus
- ✓ Fatigue
- ✓ Hair Thinning
- ✓ Certain Eye Problems
- ✓ Hearing Loss
- ✓ Compromised Immunity
- ✓ High Blood Pressure
- ✓ Type 2 Diabetes
- ✓ Severe PMS
- ✓ Erectile Dysfunction
- ✓ Skin Problems
- ✓ Slow Wound Healing
- ✓ Leg Cramps
- ✓ Cold Hands and Feet

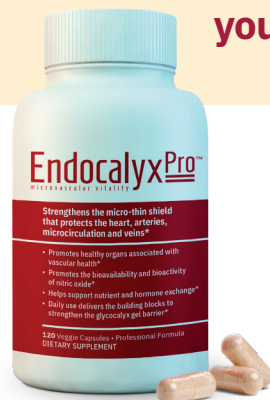
These early warning signs can indicate that a thin, delicate lining inside your capillaries—which make up 99% of your microvascular system—is breaking down.

Research by more than 125 hospitals and universities links an unhealthy glycocalyx and capillaries to these silent killers:

- Diabetes
- Hypertension
- Heart Disease
- Stroke
- Kidney Disease
- Dementia
- Septic Shock
- Inflammatory Disorders
- Compromised Immunity
- Cancer Metastasis
- Long Haul COVID-19 Complications

It's not too late...

to restore, regenerate, and protect the lining inside your capillaries — with Endocalyx Pro™



 microvascular
healthsolutions™

Endocalyx Pro can restore reduced capillary density and increase blood flow*

Discovery

New medical science reveals the importance of the endothelial glycocalyx, a transparent, micro-thin, gel-like layer lining your capillaries, which comprise 99% of your circulatory system.

Link to Health

The glycocalyx gel layer maintains a healthy capillary network that enables nutrient, hormone, and oxygen delivery, as well as waste and carbon dioxide removal, from vital organs.

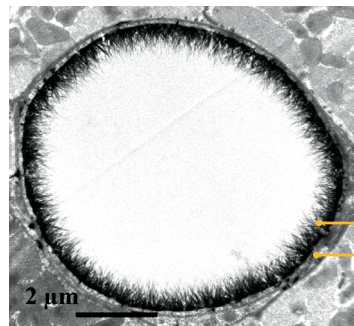
Causes of Damage

Aging, poor diet, lack of exercise, genetics, stress, and smoking can cause the glycocalyx and capillaries to become damaged. Without nutrient delivery, organs starve and health declines.

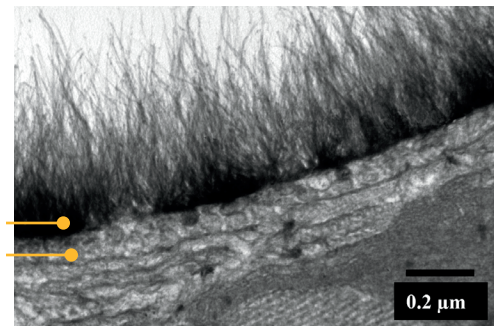
Restoration

Endocalyx Pro can restore endothelial glycocalyx function, even after damage. When glycocalyx health is regenerated and protected, nutrients and oxygen can be delivered to vital organs.*

A healthy endothelial glycocalyx is essential for delivery of nutrients, hormones, and oxygen, and removal of waste and carbon dioxide



Cross-section of a capillary blood vessel in a rat heart muscle shows extensive dimension of the glycocalyx in a healthy blood vessel.



High magnification showing the dimension of the glycocalyx is several fold the thickness of the endothelium.

© Microvascular Health Solutions

New research reveals the danger of glycocalyx damage and capillary loss



Photo by Nobbeliacious

More than 125 hospitals and universities around the world are researching endothelial glycocalyx health. Ground-breaking research was published in December 2019 in partnership with GlycoCheck™ microvascular health testing technology from Microvascular Health Solutions and Maastricht University Medical Center in the Netherlands. This research reveals the danger of glycocalyx damage and capillary loss. Losing capillary reserve capacity (even in the presence of normal levels of microvascular blood flow) can pose significant long-term health risks leading to several conditions and diseases.

Microvascular health testing technology is being developed at Maastricht University Medical Center in the Netherlands.

Capillaries deliver nutrients and hormones to vital organs, tissues, muscles, and skin. Waste and carbon dioxide are removed. This exchange of nutrients and waste is a continual process responsible for good health.



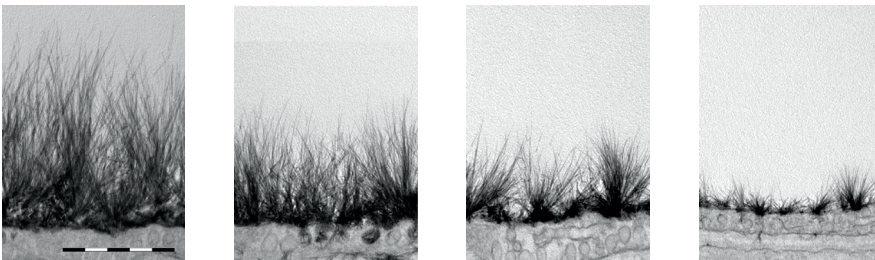
Vitality is linked to the health of the glycocalyx

You may look—and even feel—healthy on the outside, but inside the capillaries of your microvascular system, a completely different situation could be developing.

Lining the inside of your capillaries is the **endothelial glycocalyx**—a vast protective micro-thin gel lining that touches each of your trillions of cells. The integrity of the glycocalyx structure and function is important because the continuous delivery of nutrients, hormones, and oxygen, and the elimination of waste and carbon dioxide, flows through the capillaries.

In the past, blood vessels were thought to be simple hollow tubes. But with today’s high-resolution video microscopes, a discovery reveals that the entire circulatory system is coated with the endothelial glycocalyx.

When glycocalyx function becomes compromised due to aging, poor diet, lack of exercise, genetics, stress, and other factors, it can become leaky. And when that happens, diseases and conditions can silently begin. Organs begin to starve without vital nutrient delivery, leading to health decline.



Healthy Unhealthy

Reference: *Journal of Internal Medicine* 2006; 259: 393–400

Vasculoprotective properties of the endothelial glycocalyx: effects of fluid shear stress

M. GOUVERNEUR (1), B. VAN DEN BERG (2), M. NIEUWDORP (3), E. STROES (3) & H. VINK (1)

From the (1) Department of Medical Physics, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands, (2) Department of Molecular and Vascular Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA, and (3) Department of Vascular Medicine, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands.

... from Endocalyx Pro customers

“For several years I’d struggled with elevated blood pressure levels – I even ended up in the emergency room! I’ve been taking Endocalyx Pro for over a year and my blood pressure is now in the normal range – I feel great!”
— Mona L., 74 yrs.

“I have found that I have a lot fewer problems with circulation in my lower extremities. I do not have cramps in my toes anymore. I have very little neuropathy pain and my legs do not swell as badly as they had.”
— Sue C.

DOCTOR RECOMMENDED

“I recommend Endocalyx Pro to all of my patients. This product has the right ingredients to support the capillaries from breaking down and becoming leaky.”

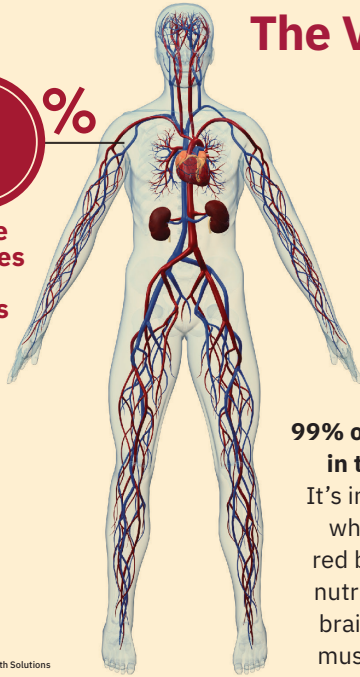
— Dr. David Winslow

“I’ve suffered with circulation problems and high blood pressure for years. Endocalyx Pro has helped with the blood flow to my fingers. I was able to reduce my blood pressure meds. It’s made a huge difference in my health.”
— Tracy V.

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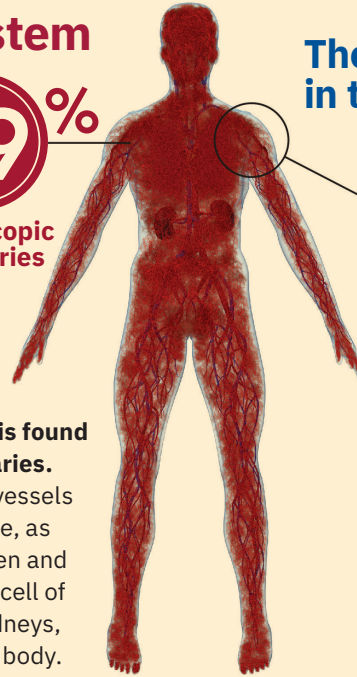
The Vascular System

1%
large arteries and veins

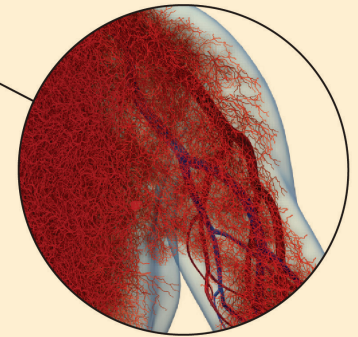


+

99%
microscopic capillaries



The real work happens in the capillaries



99% of the vascular system is found in the microscopic capillaries.

It's in these tiniest of blood vessels where the real work is done, as red blood cells deliver oxygen and nutrients to each and every cell of brain, heart, lungs, liver, kidneys, muscles... every part of the body.

= **100%**

© Microvascular Health Solutions

As Endocalyx Pro strengthens the glycocalyx, it helps optimize the structure of the capillaries, which allows them to exchange oxygen and carbon dioxide as well as nutrients and waste more efficiently.* From head to toe, optimal capillary function delivers many benefits, including increased energy, improved performance, clearer thinking, more youthful appearance, and greater comfort.

How healthy capillaries deliver nutrients and remove waste...

When the microvascular system is healthy and a person is in a resting state, some capillaries are without blood flow and go into reserve. That means that a low level of blood flow moves at a normal rate through only engaged capillaries.

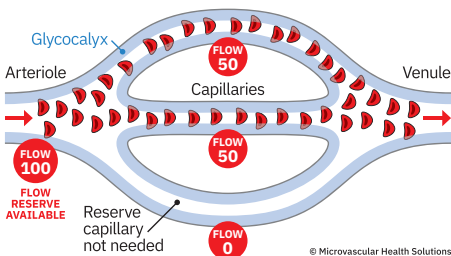
Notice in the illustration “Healthy Capillaries: Resting” that the feed flow equals 100, with the two engaged capillaries each at 50.

When the microvascular system is healthy and a person is in an active state of exercising or deep thinking, blood flow

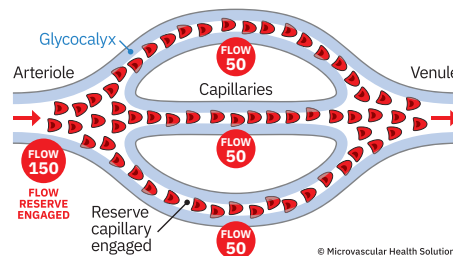
increases and capillaries in reserve are engaged. When capillaries in reserve are engaged, an increased level of blood flow moves at a normal rate through an increased number of perfused capillaries. In the illustration “Healthy Capillaries: Active” the feed flow equals 150, with the three engaged capillaries each at 50.

Key takeaway: The increased number of perfused capillaries when blood flow levels are elevated upon increased metabolic demand is vital so that a sufficient amount of nutrients can be delivered to active tissue cells of organs, and waste removed.

Healthy Capillaries: Resting



Healthy Capillaries: Active



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The Spiral of Conditions and Silent Killers



How glycocalyx capillary loss begins

Without a continuous delivery of nutrients and removal of waste, organs starve and you are at greater risk of heart disease, stroke, high blood pressure, diabetes, kidney disease, dementia, inflammatory disorders, compromised immunity, and cancer metastasis.

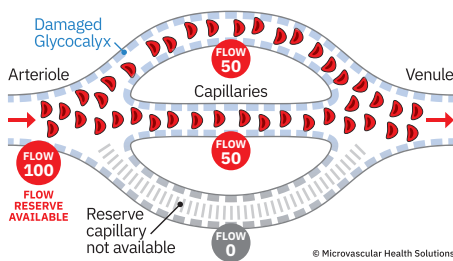
... and why unhealthy capillaries can't provide this vital exchange

Unhealthy microvascular systems, whether a person is resting or active, have no reserve capillaries. When blood flow increases with activity, blood is pushed through a small number

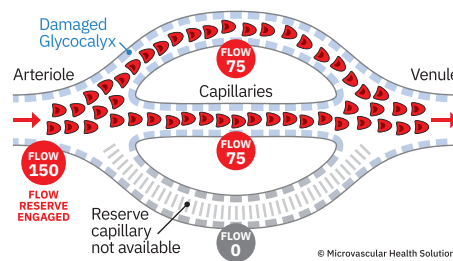
of available capillaries at a faster speed. Notice in the illustration "Unhealthy Capillaries: Resting, Stage 1" the feed flow equals 100. The glycocalyx is damaged and the reserve capillary isn't avail-

able. In "Unhealthy Capillaries: Active, Stage 1" when the blood flow increases to 150, the two engaged capillaries now have blood flow at 75 each, faster than when healthy and normal.

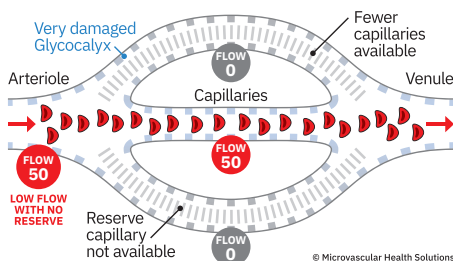
Unhealthy Capillaries: Resting, Stage 1



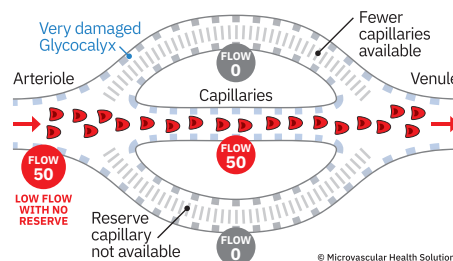
Unhealthy Capillaries: Active, Stage 1



Unhealthy Capillaries: Resting, Stage 2



Unhealthy Capillaries: Active, Stage 2



When unhealthy capillaries are lined with a very damaged glycocalyx, low blood flow has no capillaries in reserve as illustrated in "Unhealthy Capillaries: Resting, Stage 2." When blood flows slowly through too few capillaries, as shown in "Unhealthy Capillaries: Active, Stage 2," delivery of nutrients, hormones, and oxygen, and the removal of waste and carbon dioxide, is insufficient to support active tissues, leading to conditions and diseases.

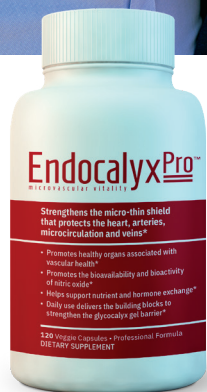
The good news: An unhealthy microvascular system, damaged glycocalyx and dysfunctional capillaries can be restored with Endocalyx Pro.*

Capillary health supports anti-aging...

*Endocalyx Pro is a dietary supplement that strengthens the micro-thin shield that protects the heart, arteries, microcirculation and veins.**

Stronger heart and healthier vessels

- Endocalyx Pro provides the building blocks needed for a strong and vital glycocalyx, strengthening this micro thin shield that protects the heart, veins and arteries, and microcirculation.*
- When the glycocalyx is thick and strong, it serves as a barrier to oxidants, fats, and cholesterol. Endocalyx Pro helps keep blood vessels slick, smooth, and protected inside, from the largest veins to the tiniest little capillaries. This keeps blood flowing freely while optimizing circulation throughout the entire body.*



Endocalyx Pro™ is the only proprietary, patented anti-aging supplement that has been clinically shown to maintain a healthy glycocalyx.*

Strengthens the micro-thin shield that protects the heart, arteries, microcirculation and veins*

- Promotes healthy organs associated with vascular health*
- Promotes the bioavailability and bioactivity of nitric oxide*
- Helps support nutrient and hormone exchange*
- Daily use delivers the building blocks to strengthen the glycocalyx gel barrier*

120 Vegan Capsules • Professional Formula
DIETARY SUPPLEMENT

Clearer thinking

- Endocalyx Pro helps build the glycocalyx, which optimizes the function of the capillaries in the brain.*
- The better each brain cell is supplied with oxygen and nutrients, the better the mood, the clearer the mind, and the more productive the thinking.*

More youthful appearance

- Healthy skin, hair, and eyes depend on a steady supply of oxygen and nutrients in order to renew, grow, and stay healthy.*
- As Endocalyx Pro rejuvenates the glycocalyx, this supply line is improved.*
- Skin color and tone are enhanced.*
- Hair and nails are stronger and healthier.*
- And eyes are clearer and brighter.*

Increased energy

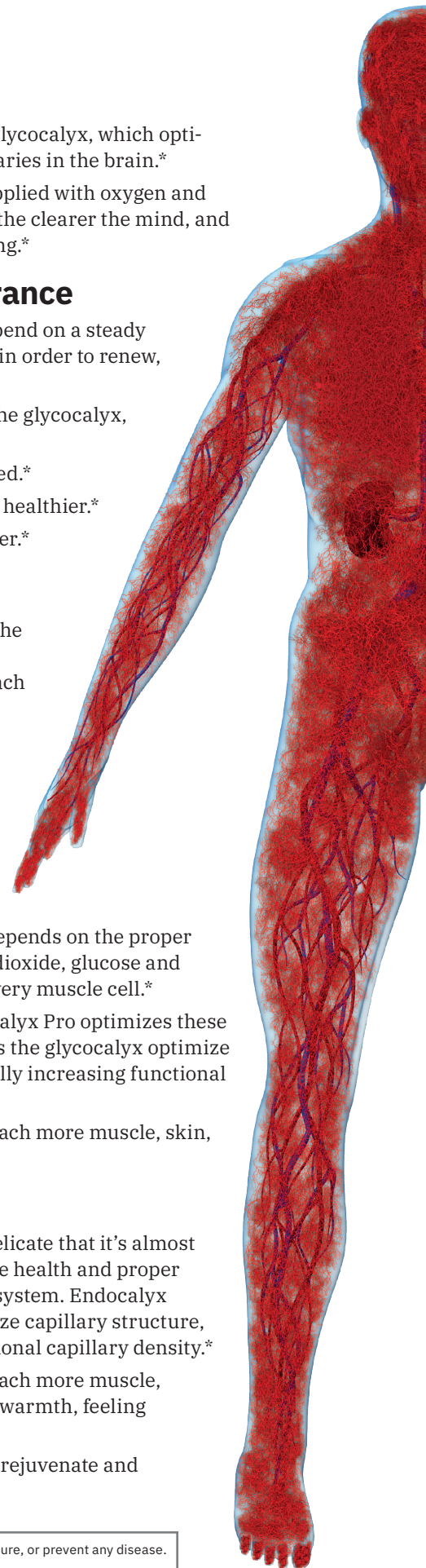
- As Endocalyx Pro strengthens the glycocalyx, the entire vascular system is better able to reach each cell of the body.*
- Then all the cells of the body, including the brain, heart, and muscles, are amply supplied with oxygen and fuel.*

Improved performance

- Strong physical performance depends on the proper exchange of oxygen and carbon dioxide, glucose and metabolic waste; to and from every muscle cell.*
- A glycocalyx enhanced by Endocalyx Pro optimizes these exchanges. Endocalyx Pro helps the glycocalyx optimize capillary structure, while actually increasing functional capillary density.*
- This means more blood cells reach more muscle, skin, and nerve cells.*

Greater comfort

- The glycocalyx is so thin and delicate that it's almost invisible. Yet it is essential to the health and proper function of the entire vascular system. Endocalyx Pro helps the glycocalyx optimize capillary structure, while actually increasing functional capillary density.*
- This means more blood cells reach more muscle, skin, and nerve cells, restoring warmth, feeling and comfort.*
- Endocalyx Pro helps to restore, rejuvenate and protect the glycocalyx.*



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... and its breakdown is linked to disease progression

Dementia

- Dementia is associated with damage and the loss of capillary density in the brain. When capillaries are damaged, essential nutrients can't nourish and oxygenate cells in the brain, and just as importantly, waste and carbon dioxide can't be removed.
- Endocalyx Pro restores the glycocalyx lining inside the capillaries so that capillary density can increase, with nutrients delivered to, and waste removed from cells in the brain.*

Stroke

Stroke occurs when a blood clot in a large artery blocks supply of oxygen and nutrients, resulting in brain damage. After removal or dissolving the clot, and blood flow is restored to the brain, further damage occurs due to loss of capillaries by high levels of oxygen radicals. Endocalyx Pro can protect the capillaries against this second challenge of high oxygen radicals by restoring the health of the glycocalyx lining.*

Heart disease

- **Heart attack** happens when a blood clot shuts down blood flow in a large artery. When the blood clot is removed blood flow is restored, but damage occurs in the microvessels due to formation of oxygen radicals. Endocalyx Pro supports the health of the microvessels and limits reperfusion injury.*
- Even in the absence of a large vessel blockage, people can experience **chest pain** (angina) due to inadequate microvascular blood flow and loss of capillaries. Endocalyx Pro restores the glycocalyx lining inside the microvascular system and increases capillary density.*
- Many people who experience loss of cardiac function suffer from a type of **heart failure** that is linked to loss of capillaries and increased stiffness of the heart muscle. Endocalyx Pro restores the glycocalyx lining inside the microvessels and increases microvascular blood flow and capillary density that will contribute to improved heart function.*

Kidney disease

Breakdown of kidney capillaries causes loss of its filtering system and impairs production of urine, increasing blood volume and resulting in hypertension. Endocalyx Pro restores the glycocalyx lining inside the capillaries so that kidney function can be optimized and preserved.*

Hypertension

Hypertension increases risk of stroke and cardiovascular disease and is associated with capillary loss. Endocalyx Pro restores, regenerates, and protects the glycocalyx lining inside the capillaries so loss can be prevented, and organs including the brain, heart, and kidneys can be better protected.*

Diabetes

- High glucose from diabetes can result in capillaries being attacked, resulting in capillaries unable to deliver nutrients like glucose, hormones like insulin, and remove waste from cells. Endocalyx Pro restores and maintains the endothelial glycocalyx lining inside the capillaries and improves capillary density and function.*
- Endocalyx Pro also helps protect against damage from high glucose and oxidative stress.*

Inflammatory disorders

Out-of-control activation of the inflammatory system in response to challenges like rheumatoid arthritis, vasculitis, allergies, glomerulonephritis, autoimmune diseases, scleroderma, and atherosclerosis. An attack on capillaries by inflammatory cells results in damage and loss of capillaries. Increased capillary permeability causes tissue edema. Endocalyx Pro can restore the endothelial glycocalyx lining inside the capillaries, even after damage and the loss of capillary density.*

Compromised immunity

Out-of-control activation of the inflammatory system in response to infections by viruses or bacteria. Compromised Immunity can result in the microvascular system—the capillaries—being attacked, resulting in leaky capillaries unable to deliver nutrients and remove waste from cells through the endothelial glycocalyx. Endocalyx Pro restores and maintains the endothelial glycocalyx lining inside the capillaries and improves capillary density and function.*

Cancer metastasis

A leaky microvascular system enables cancer cells to redistribute to different parts of the body. Endocalyx Pro restores the glycocalyx lining of the microvessels to better contain the primary tumor and reduce metastasis.*

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It's not too late to reverse a damaged glycocalyx and restore capillary loss



Endocalyx Pro can restore endothelial glycocalyx and capillary function, even after damage from aging, genetics, and other conditions. When glycocalyx health is regenerated, nutrients and oxygen can reach vital organs.

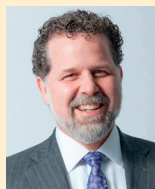
- Endocalyx Pro is a patented formula, with ingredients sourced from regions around the world. These ingredients work together synergistically and are clinically shown to protect glycocalyx health.*
- A healthy glycocalyx supports organ function by restoring, regenerating and protecting the micro-thin glycocalyx lining.*
- Endocalyx Pro provides the building blocks needed for a strong and vital glycocalyx, strengthening this micro-thin shield that protects the heart, arteries, microcirculation and veins.* It helps keep blood vessels slick, smooth and protected inside, from the largest arteries and veins to the tiniest capillaries.* This keeps blood flowing freely while optimizing circulation throughout the entire body.*

This patented anti-aging supplement formula has been clinically shown to improve the health of the glycocalyx using seven synergistic ingredients from three classes of compounds:

- **RESTORE: Polysaccharides enable repair of damage to the glycocalyx.** Polysaccharides are long sugar chains that can interact with proteins and other molecules of the glycocalyx to restore its protective structure.
- **REGENERATE: Amino sugars enable the production of more glycocalyx.** Amino sugars are the precursor for polysaccharide biosynthesis. They enable the cells of the vessel wall to produce more glycocalyx polysaccharides and regenerate the body's ability to produce more of the protective gel.
- **PROTECT: Antioxidants protect the polysaccharides** of the endothelial glycocalyx from additional damage and breakdown.

“My entire view of health has shifted”

—DR. DAVID HAASE, MD, IFMC-MD, DABFM, DABOIM, CNS, BCN



Dr. David Haase

“Last year at MaxWell Clinic® as part of our Regenerative Plasma Exchange® program to reverse dementia, we became one of the first centers in the world to be able to measure the dynamic capillary-glycocalyx microcirculation accurately—and it has shifted my entire view of health.

It is microcirculation that is the business end of all lifestyle and nutritional interventions as that is where nutrients are delivered and waste is removed from the BRAIN, KIDNEYS, PENIS, HEART, LUNGS, EYES, NERVES, MUSCLE... every organ. When you repair and protect the microcirculation, you protect yourself from premature health decline.”

Research & ongoing studies

More than 125 hospitals and universities around the world are researching endothelial glycocalyx health, using GlycoCheck technology from Microvascular Health Solutions. See where GlycoCheck is in use at [Microvascular.com/research-institutions](https://www.microvascular.com/research-institutions). There is a growing list of ongoing studies using GlycoCheck and Endocalyx Pro, along with an extensive list of published papers using GlycoCheck. Review the studies and papers at [Microvascular.com/published-papers](https://www.microvascular.com/published-papers).

Start Endocalyx Pro now

Endocalyx Pro supports anti-aging, and restores, regenerates, and protects capillaries.

Talk with your doctor about starting Endocalyx Pro today.



www.microvascular.com

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