

# THE Beat



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## Inflammation and Blood Clots: What You Should Know

You've probably heard the word "inflammation," especially when talking about health. But what does it mean, and what does it have to do with blood clots?

Inflammation occurs when your body tries to heal itself after an injury or when fighting an infection. Your immune system starts this process when it detects something harmful or foreign in your body, like a virus. Blood vessels become more permeable, allowing more immune cells to reach the infected area and help protect it. When immune cells move into the area, you may notice symptoms like swelling, tenderness, and redness around the injury or infection site.

Inflammation can subside within a few hours, depending on the injury or infection your body is fighting. But sometimes, inflammation doesn't go away, and the cells meant to protect the body end up releasing proteins and hormones that can harm tissues and make the inflammation worse.

Some diseases can cause ongoing—or what we call "chronic"—inflammation, leading to more damage and other health problems. Common inflammatory diseases include:

- Lupus
- Cancer
- Cystic fibrosis
- Asthma
- Psoriasis
- Multiple sclerosis
- Infection (viral or bacterial)
- Inflammatory bowel disease (Crohn's disease and ulcerative colitis)
- Diabetes

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## How Does Inflammation Cause Blood Clots?

When there's an inflammatory response in your body, white blood cells called neutrophils release sticky structures called NETs (neutrophil extracellular traps). NETs trap and kill threats to the body, like bacteria and viruses, but also make the inside of blood vessels stickier.

Platelets (small cell fragments in your blood) stick to these NETs and to the walls of blood vessels. When platelets stick together, they can form a clot. The clotting process usually helps stop bleeding but can run amok in the setting of inflammation and block blood flow in the veins. Blood clots in the deep veins are known as deep vein thrombosis (DVT). When these clots travel to the lungs, they are called pulmonary embolism, or PE.

## Tips for Reducing Inflammation

There are several things you can do to reduce inflammation and protect yourself from blood clots. Simple changes in your daily routine can make a big impact.



### Increase exercise

During exercise, your brain and nervous system release inflammation-fighting hormones. Just 20 minutes of moderate exercise can make a difference.



### Decrease stress

Stress can make your immune system too active, increasing inflammation. To lower stress, try meditation, yoga, or deep breathing exercises.



### Get enough sleep

Sleep is important for keeping your immune system strong and balanced. Without enough sleep, your body makes more chemicals that cause inflammation. Aim for 7 to 9 hours of sleep each night.



### Avoid smoking and excessive alcohol

Smoking puts harmful chemicals into your body that cause inflammation. These chemicals irritate your lungs and other tissues, making your immune system react. The immune system sends cells to attack the toxins from the smoke, thinking they're a foreign invader.

When you drink alcohol, your liver works to break it down and remove it from your body. This process creates harmful chemicals that can damage liver cells, cause inflammation, and weaken your body's defenses.

## Eat healthy foods

Eating a Mediterranean diet is one of the best ways to lower inflammation. This diet focuses on whole foods like fruits, vegetables, whole grains, nuts, and healthy fats like olive oil. It also includes moderate amounts of fish, poultry, and dairy, while limiting red meat and sweets.

If you prefer more flexibility in your diet, you can still choose foods that help reduce inflammation.

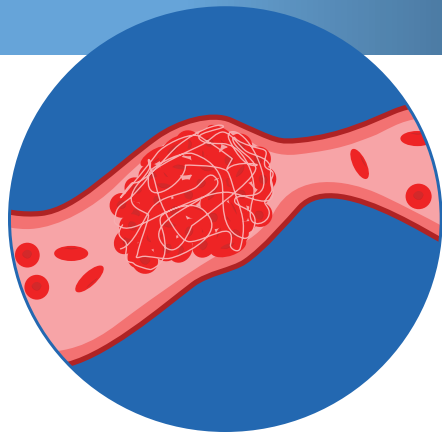
- **Proteins for the win:** Plant-based proteins like beans, lentils, tofu, and quinoa are great for reducing inflammation. If you eat meat, look for grass-fed options. Consider buying in bulk, or from local farmer's market or co-ops to save on costs. Wild-caught fish is also great. Frozen or canned wild fish offers the same benefits but is easier on the wallet.
- **Eat more fiber:** Increasing fiber intake can help decrease inflammation. Sources of fiber include whole grains, vegetables, nuts, and beans.
- **Eat fruits and vegetables:** Berries, cherries, and dark-colored fruits and vegetables are great at lowering inflammation. Aim for at least 5 servings of fruit and vegetables daily.
- **Use anti-inflammatory herbs and spices:** Spices like paprika, rosemary, ginger, and turmeric can help reduce inflammation. Other good choices include cloves, cinnamon, and sage. Some herbs and spices can interact with blood thinners if used in large quantities. If you are on a blood thinner, talk to your doctor or pharmacist about using these herbs.
- **Choose healthy fats:** Avoid trans fats found in baked and fried goods. Limit saturated fats, especially those from animal products. Balance omega-6 and omega-3 fats by eating more fish and leafy greens. Choose monounsaturated fats, like those in olive oil.
- **Try eating dark chocolate:** Dark chocolate with at least 70% cocoa can also help lower inflammation.

# Can Diabetes Increase Your Risk of Blood Clots?



November 14th is World Diabetes Day, a great opportunity to learn about how diabetes affects your health and how it can be linked to things like blood clots. There are two classifications of diabetes: type 1 and type 2. In type 1 diabetes, the immune system attacks and destroys the

cells in the pancreas that make insulin. In type 2 diabetes, your body either doesn't produce enough insulin or can't use it properly. Both types can increase the risk of blood clots, but type 2 is often linked with conditions like obesity and high cholesterol, risk factors that make clots more likely.



## How Diabetes Can Lead to Blood Clots

People with diabetes have a higher risk of getting blood clots for several reasons.

### Changes in consistency of blood

People with diabetes often have higher levels of a protein called fibrinogen. This protein makes blood stickier and causes red blood cells to clump together, slowing blood flow and making the blood more likely to clot.

### Changes in clotting and platelet activation

Diabetes affects the clotting process by creating an environment in the body where clots form more easily and break down less easily. These changes occur because the proteins responsible for clotting, called coagulation factors, change in both quantity and function in people with diabetes. High blood sugar also activates the clotting system, further increasing the risk of clots.

In diabetes, platelets also become stickier and more active, clumping together and forming clots more easily. As platelets stick together, your body makes more of them, which increases their activity and can lead to even more clots.

### Blood vessel damage

The cells inside your blood vessels help control blood flow by making the vessels wider or narrower. They also help stop clots and control swelling. But when things go wrong, these cells can cause swelling and clots instead of protecting you. High blood sugar puts further stress on the body and causes harmful substances to build up. These substances can damage cells, cause inflammation, and increase the risk of blood clots.





## The Risk of Recurrence

If you have diabetes, the chances of having [another blood clot](#), like DVT, are higher, even without other health problems. If you also have other conditions like high blood pressure or high cholesterol, the risk is even greater. Managing your diabetes is important to help reduce the chances of recurrent clots..

## Managing Blood Clots When You Have Diabetes

Lifestyle changes like exercise and a healthy diet can help keep high blood sugars under control. Medications also play a key role in reducing the risk of clots for people with diabetes.

- [Antiplatelet therapies](#) include medicines like aspirin or clopidogrel (Plavix)
- Anticoagulants, also known as blood thinners, include medicines like warfarin and direct oral anticoagulants (DOACs, such as apixaban and rivaroxaban)
- Cholesterol-lowering drugs, like statins, help reduce inflammation in the blood vessels
- [Metformin](#)—and other medicines used to lower blood sugar—can also lower the risk of clots forming

Managing diabetes isn't just about controlling blood sugar – it's also about addressing other health risks, like high blood pressure and cholesterol, which can increase the risk of having a blood clot. Whether you have type 1 or type 2 diabetes, keeping your whole body healthy is key to reducing complications and staying well.

We recognize World Thrombosis Day throughout the month of October to raise awareness about the dangers of blood clots. Learn more at [worldthrombosis.org](http://worldthrombosis.org).



**WORLD THROMBOSIS DAY**  
13 OCTOBER



**NATF is thrilled to announce that our organization is rebranding with a fresh new name, look, and feel! Our new name and logo will be revealed soon. But, rest assured, as we evolve our mission to circulate knowledge and bring even more people together, our core focus remains the same: to educate clinicians and patients about blood clots and related diseases. While our December newsletter will have a whole new look, our commitment to providing valuable resources and information remains as strong as ever. Stay tuned for more updates! We're really excited to share this with you.**



Scan the QR code to access important website links

# Upcoming Patient Events

All groups start at 7:00 PM EST



## Women's Health Webinar for World Thrombosis Day

Join NATF, the [Foundation for Women and Girls+ with Blood Disorders](#), and [WomenHeart](#) for an exclusive virtual event for World Thrombosis Day! Our expert panel will explore the connections between menopause, hormones, and cardiovascular health, including the impact of hormonal changes on blood clot risk and heart disease. Learn how hormone replacement therapy affects clotting and discover ways to protect your heart health during and after menopause.

**October 15, 2024**

## Cancer-Associated Thrombosis Support Group (Quarterly)

NATF is excited to launch our Cancer-Associated Thrombosis (CAT) Support Group for individuals undergoing cancer treatment who have also been diagnosed with a blood clot. This virtual group offers a safe space to connect, share experiences, and receive emotional support from others managing both cancer and thrombosis.

**October 30, 2024**

## Blood Clot Support Group

*Hosted by Joelle Hochman, RRT, Chair of Patient Engagement & Education*

After experiencing a blood clot, it's normal to have a lot of questions. Many people are left feeling confused about why this happened to them and are anxious about it happening again.

We're pleased to offer a virtual support group experience where patients can share their stories, connect with others who've had blood clots, and receive emotional support.

**October 17, 2024**

**November 21, 2024**

**December 19, 2024**

## Blood Clot Education Group

Join our virtual Blood Clot Education Group to connect with others and learn about all things related to blood clots. Get accurate information, hear from experts on the latest research and treatments, and share your experiences. Each session includes participant introductions and a Q&A with a clinician, where you can submit questions in advance.

**October 22, 2024**

**November 12, 2024**

**December 12, 2024**

*In all online groups, a clinician will be available to answer general questions about blood clots. However, please note that they cannot provide personalized medical advice to any patients.*

Do you like what you see in *The Beat* and find this information helpful?

Please consider making a donation to NATF to further support blood clot education.

A graphic with a blue background. At the top, it asks if the reader likes 'The Beat' and finds it helpful. Below this is an image of three overlapping copies of 'The Beat' magazine, which features various articles and photos. At the bottom, it encourages donations to NATF to support blood clot education.

## Long-PE and CTEPH Support Group (Quarterly)

Have you or someone you care for experienced a pulmonary embolism (PE)? NATF offers a dedicated support group for patients with post-PE syndrome and CTEPH (Chronic Thromboembolic Pulmonary Hypertension). This group provides a safe space to connect with others, receive support, and learn more about managing life after PE. Each session includes introductions and a Q&A with a clinician, where you can submit questions in advance.

**November 7, 2024**

Please help us spread the word about these support groups! More information can be found on our [website](#).

To register for these programs, please visit Patient Events on our website at <https://thrombosis.org/events/patients/>



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