NATF North American Thrombosis Forum
Fighting blood clots through education

THE Beat

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In This Issue:

What Is My Risk of Getting a Blood Clot, *Really?*

And what does risk actually mean?

It seems like every other day there's a new headline about risk factors for heart disease or blood clots. These news stories can be very alarming, especially if you're living with a blood clotting disorder. So, it's important to understand what risk actually *means* and the key factors that can increase the likelihood of having a blood clot.

The definition of "risk" as it relates to your health

Risk refers to the odds of an event occurring that can cause negative or harmful consequences. When it comes to health, risk is defined as the likelihood of developing a disease or condition. Risk factors are specific variables that increase this likelihood.

Some risk factors are fixed and cannot be changed, such as age. Other risk factors are considered modifiable and can be changed, such as lifestyle. Oftentimes, multiple risk factors contribute to the likelihood of developing a certain condition.

Different types of risk

When researchers publish scientific studies, they often report risk as "absolute" or "relative." Absolute risk is the odds of acquiring a disease over your entire lifetime. Relative risk refers to the odds of this occurring compared to another group. For example, the relative risk of developing lung cancer is higher in people who smoke compared to people who do not smoke.

It's important to remember that increased absolute or relative risk does not mean you will *definitely* develop a certain condition. Rather, it *estimates* chance based on different factors.

Let's look at an example. The lifetime risk of developing Parkinson's disease is approximately 4%, meaning that out of 100 people, 4 people will get Parkinson's at some point in their life and 96 will not—this is absolute risk; however, this estimate is affected by different risk factors.

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Studies have found that people who drink coffee (3 or more cups/day) have a 30% lower risk of getting Parkinson's disease compared to people who do not drink coffee. This means that your 4% general risk of getting Parkinson's is affected by whether or not you drink coffee, a risk factor—this is relative risk.

It's also very important to remember that percentages of risk vary across different research studies, so sometimes you'll see a range of numbers rather than one percentage.

Risk factors associated with blood clots

If you've had a blood clot in the past, you are at higher risk of developing another clot. Factors that increase this risk are called "provoking" risk factors. Keeping this definition in mind, let's now consider provoking factors that can affect your relative risk of developing another clot.

General risk factors

■ *Family history*

Genetic variations passed down from family members can increase your risk of developing a blood clot. If one or more first-degree relatives (like a sister or brother) has a history of blood clots, you are 2-4 times more likely to develop blood clots compared to people without a family history.

■ *Having other health conditions*

It's very common to have more than one disease in your lifetime. Having diabetes, for example, can increase your risk of getting a blood clot by 1.4 times compared to people without diabetes.

In addition, 5 times as many people with cancer will develop a clot compared to people without cancer. This increased risk is due both to cancer itself and the medicines used to treat it.

It's important to tell your healthcare team about all of the medicines you take and any time they change. Certain medicines, including herbal supplements, can increase your blood clot risk when taken alone or with other medicines.

■ *Undergoing surgery*

Having surgery increases your blood clot risk—both during the procedure and in the recovery period. In one large study, 1 in 100 people experienced a blood clot within 90 days of having surgery.

■ *Lifestyle*

People who are sedentary or not very active are also at increased risk. For example, people who watch TV for several hours per day have an increased likelihood of developing a clot (35% higher) compared to those who don't watch TV or watch TV for shorter periods of time.

Even in active people, specific periods of inactivity, such as when taking a long plane ride, can also increase clot risk.

Risk factors in specific populations

■ *Women*

Certain risk factors affect specific populations, such as women who experience menstruation, menopause, or pregnancy. Oral contraceptives, or birth control, can increase the risk of developing blood clots by more than 3-5 times compared to people not taking birth control. This risk varies across different types of birth control.

■ *Transgender individuals*

People who take gender-affirming hormone therapy as part of their transition process may have a higher risk of developing blood clots. While there is still a lot more to understand, it appears that estrogen, but not testosterone, is more likely to increase this risk.

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Reducing your risk

Please note that these are general recommendations and are not intended to serve as personalized medical advice.

It can feel a bit scary knowing that there are many factors that can increase your risk of getting blood clots—but the good news is that there are several ways to reduce your risk.

Get more exercise. It can be hard to get in enough activity if you have to sit for long periods for work or other reasons, but increasing your activity level can reduce your risk.

Protect yourself during flights. To lower the risk, try to move around every 1-2 hours, drink lots of water, and avoid sleeping or sitting in awkward positions for too long.

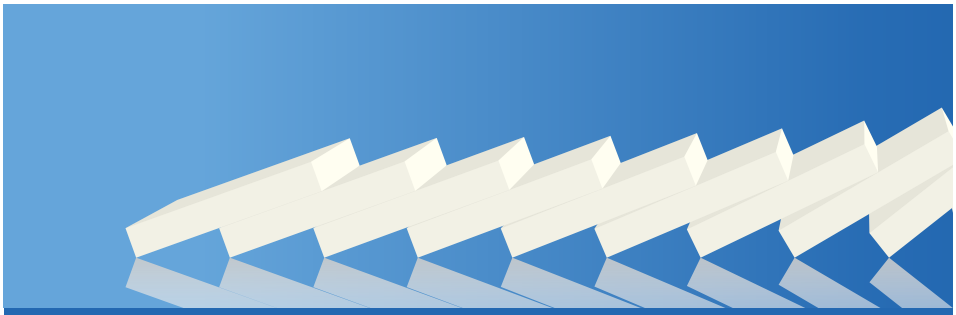
Keep moving during recovery. Healing from surgery can be exhausting—but keeping as active as possible can really help.

Eat a healthy diet. In addition to exercise, heart health starts in the kitchen. If you're not sure where to start, consider talking to a nutritionist to get tips on healthy eating.

Don't smoke. Quitting smoking isn't easy but it's one of the most important things you can do for your health. Talk to your healthcare team if you need support or resources.

If you have any questions about your specific risk factors, be sure to talk to your healthcare team.

To learn more about risk, watch our webinar featuring Dr. Yasmine Ali, a medical writer and board-certified cardiologist.



Patients Are Asking: How Do Blood Clots Form in the Body?

Understanding the coagulation cascade

Reviewed by Nathan Connell, MD, MPH

Blood clotting disorders occur when coagulation—the steps the body takes to make a clot—are disrupted. It's important to learn about how this process normally works. Let's get into it!

Why does my body need to make clots?

Sometimes blood vessels (veins or arteries) get damaged. This can occur due to an external injury like cutting your finger or an internal injury like tissue damage.

To stop the bleeding, your body creates a clot to plug up the damaged part of the vessel. Over time, the injury heals and the blood vessel functions properly again.

How does your body make a clot?

Coagulation is the process by which the body forms a thrombus, or clot. This series of steps is called the "coagulation cascade." Several steps take place to make a clot and occur sequentially like dominoes falling in a sequence.

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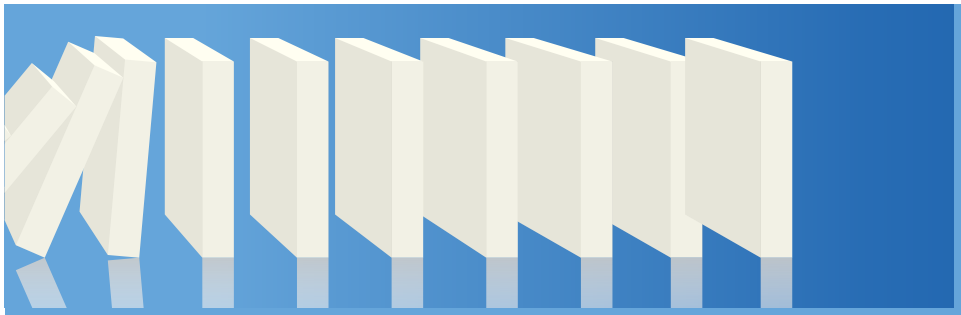
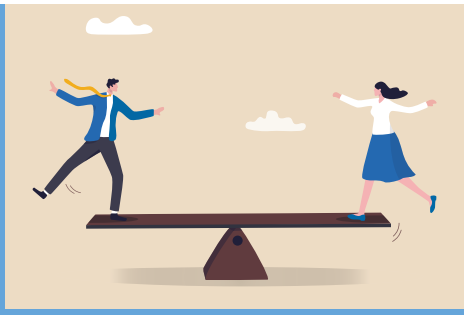




A clot is formed and regulated by four processes that occur in conjunction with each other:

1. Vasoconstriction

The blood vessel itself starts to squeeze down to reduce blood flow into the area and prevent blood loss.

2. Platelet activation and aggregation (clumping together)

Platelets, a type of cell that keeps the blood sticky, travel to the site of the injury. The platelets form an initial plug to stop the vessel from bleeding.

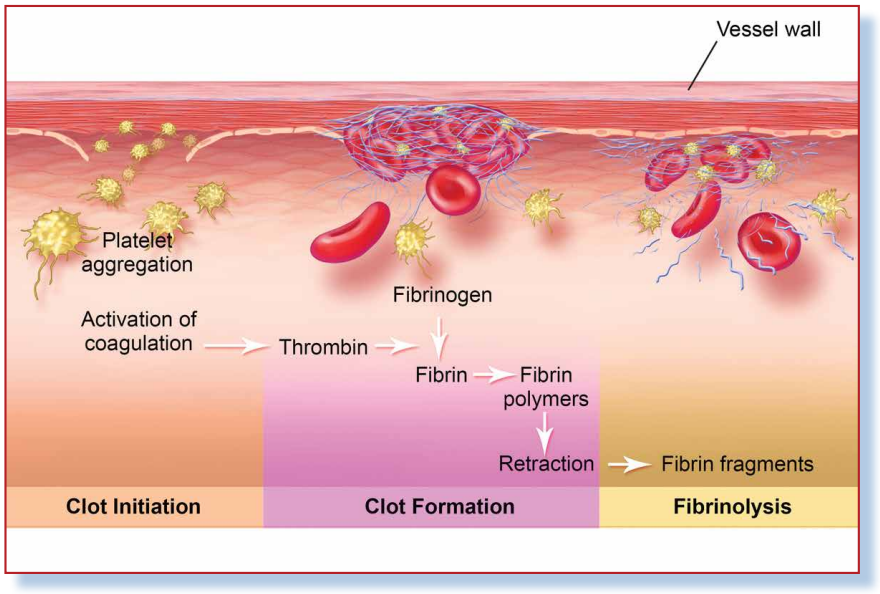
3. Coagulation cascade

In the "coagulation cascade," proteins called "factors" and "enzymes" pair together along a chemical pathway.

At the end of the cascade, fibrin, a protein in the blood, is created. Fibrin makes a mesh that becomes the thrombus, or clot. This strong clot protects the vessel so it can start to heal.

4. Fibrinolysis

This is the process that's activated to prevent the clot from getting too big. It allows the clot to be dissolved slowly over time as the area heals and the clot is no longer needed.



What causes a blood clot?

The goal of the coagulation cascade is to keep the body in a state called "hemostasis" ("hemo" meaning blood and "stasis" meaning standing still) by creating a clot when there is an injury. But sometimes the coagulation cascade doesn't work properly.

The body may make clots in blood vessels when there is *no* injury—this is called thrombosis.

On the other hand, sometimes the body cannot make a blood clot when there *is* an injury—this can cause bleeding disorders like hemophilia.

How do medicines prevent a blood clot from forming?

Medicines for blood clot disorders—anticoagulants or antiplatelets—are sometimes also called "blood thinners." They work by keeping sticky substances in the blood (like platelets) from forming a clot. However, this process also lowers the body's ability to make a clot when it needs to.

When taking blood thinners, you may experience bruising and bleeding more easily. It's important to discuss this risk of bleeding with your healthcare team.

Upcoming Patient Events

New Support Group Coming in April!

Post-PE and CTEPH Support Group

NATF is excited to offer a new support group for people who have had pulmonary embolism (PE), or blood clots in the lungs. Having a PE puts you at risk of developing a condition called chronic thromboembolic pulmonary hypertension, or CTEPH. If you're still experiencing symptoms like shortness of breath months after your PE, or if you have a CTEPH diagnosis, this group will provide a safe space to connect with others, receive support, and have questions answered.

Dr. William Auger will join our first group in April. Dr. Auger is an Emeritus Professor of Medicine at the University of California, San Diego and has over 30 years of experience evaluating and managing patients with chronic thromboembolic disease and other vascular disorders. Jessica Armstrong, a patient advocate, will also be joining the group.

April 17, 2024

Blood Clot Education Group

Our virtual *Blood Clot Education Group* is a space to discuss all things related to thrombosis, or blood clotting. Join us to…

- Find accurate and trustworthy information about blood clots
- Learn about current research and treatments from experts
- Share your questions and experiences with others

April 11, 2024

May 9, 2024

June 11, 2024

All meetings start at 7:00 PM EST

In both 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.

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 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 have had blood clots, and receive emotional support.

April 18, 2024

May 16, 2024

June 20, 2024

All meetings start at 7:00 PM EST

If you're a longtime reader of *The Beat*, please help us spread the word about this support group! More information can be found on our website.

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.

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

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