



## **Our Impact This Year**

2018 Annual Report



## A Message From The President of NATF

Dear Friends of NATF:

In 2006, a small group of us fulfilled our decades-old dream and incorporated the North American Thrombosis Forum (NATF) as a nonprofit organization in the Commonwealth of Massachusetts. Over the ensuing decade, we concentrated on local and regional education programs. More recently, we have taught that PE and DVT are closely related with respect to risk factors and pathophysiology to heart attack and stroke. PE and DVT are also intertwined with the growing problems of diabetes and metabolic syndrome.

When we expanded our presence to international meetings in 2018, we created two European educational programs on preventing cardiovascular events (heart attack, stroke, pulmonary embolism) after hospital discharge: 1) the International Society of Thrombosis and Haemostasis (ISTH) meeting in Dublin, Ireland and 2) the European Society of Cardiology (ESC) meeting in Munich, Germany. On the national front, outside of New England, we held symposia in the following cities in 2018: New York, Chicago, Philadelphia, San Diego, and Detroit.

NATF extended its mandate because diabetes mellitus is a root cause of many thrombotic events in patients with heart attack or stroke. Therefore, we convened a Thrombosis Summit in September 2018 at the Fairmont Copley Plaza Hotel on the hot topic of: "Strategic interventions to conquer the cardiometabolic syndrome and cardiovascular risk in diabetes." This was our largest Thrombosis Summit in recent years, and we included faculty from as far away as Los Angeles.

Outside the United States, there is a thirst for more education about vascular medicine. Top academic cardiologists from the State of Israel have been proactive in their goal of incorporating vascular medicine into "mainstream cardiology." With this objective in mind, NATF signed a 3-year agreement to host an annual 5-day symposia at Brigham and Women's Hospital with

cardiologists from the State of Israel. With these efforts, the field of "cardiology" will expand to "cardiovascular medicine and vascular medicine."

We at NATF are concerned that there is no longer Federal funding for Vascular Medicine Training Programs, which had been previously funded for a 10-year period. These programs educated the next generation of Vascular Medicine and Thrombosis Specialists. I am pleased to report that NATF will fund a cardiology-trained Vascular Medicine Fellow for advanced education at Brigham and Women's Hospital's Vascular Medicine Fellowship Program.

What are the sources of our income that permit NATF to carry out such ambitious programming? We are constantly applying for grants to non-governmental organizations, to pharmaceutical and device companies, and are appealing to the public for contributions to our Annual Fund.

Our website ([www.NATFonline.org](http://www.NATFonline.org)) received

about 150,000 hits in 2018. We have expanded our PE and DVT support groups from a local monthly in-person support group run by my nurse, Ruth B. Morrison, RN, BSN, CVN and me at Brigham and Women's Hospital to an additional online monthly support

group run by a rotation of NATF faculty serving the entire global community. More than 700 individuals participated in these online interactive forums in 2018.

Perhaps the most important gauge of how we are resonating with the public, thrombosis patients, and their families and friends, our Annual Fund set a record and collected \$279,900. This sum is important because it will cover most of our annual operating expenses.

I wish to thank you for your generosity and for your engagement in NATF.

With warm wishes and best regards.

Sincerely,



Samuel Z. Goldhaber, MD  
President, NATF  
Interim Chief, Division of Cardiovascular  
Medicine, Section Head, Vascular Medicine,  
Director, Thrombosis Research Group,  
Brigham and Women's Hospital  
Professor of Medicine, Harvard Medical School



## A Message From The Executive Director

2018 was a year of tremendous growth for NATF. We educated more healthcare providers than ever before, our website traffic grew by over 100%, we hosted 2 dozen patient support groups, mailed out over 10,000 copies of our bimonthly newsletter, *The Beat*, and raised the most money ever for our annual fund: \$279,900. None of this would have been possible without your support, and for that I am truly grateful.

When reflecting on 2018, there are two small moments that I believe demonstrate why NATF is important. The first was at our annual Thrombosis Summit in September. All around, it was a remarkable evening, with over 260 healthcare providers gathered to learn more about state-of-the-art advances in thrombosis.

After the program, I was speaking with some of the faculty when a young pharmacy student approached our group. After a somewhat timid introduction, his face lit-up as he went on to describe how much he enjoyed our program and how it got him really excited for his career in medicine. His excitement and eagerness to put into practice what he just learned was palpable, and everyone in our group was touched by his enthusiasm. Being able to see first-hand how an NATF program has helped to shape the future of medicine was a powerful moment.

The second was at a recent patient support group. It was one of our smaller groups, comprised entirely of patients who had been coming to our support group for as many as 15 years. The group sat around for over an hour, talking not just about their health and blood clots, but what was happening in their life. As we sat around chatting, I found myself thinking how special our support group was – here was a group of patients who in most cases had made a full recovery from their blood clots, but still made it a point to drive into Boston once a month to catch-up with one another and provide support to new members of the group.

There was nothing forced about it, just a genuine moment of people caring for and connecting with one another. Being able to provide more opportunities like this, especially for patients who are still struggling with their diagnosis, is on the top of my list for the coming year.

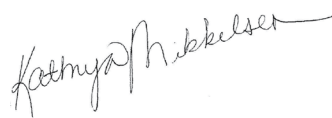
In this annual report, we talk a lot about the growth that NATF has experienced over the past year. While this is incredibly exciting, the challenge I have set for myself in 2019 is to make sure that this growth is meaningful and true to our mission of saving lives through education and prevention. As NATF blossoms into a well-respected national organization, I am more focused than ever before on building

relationships and developing programs that are not only important today, but that are able to evolve and grow to become a part of the NATF fabric for many years to come. To that end, I will be reaching out to many of you in the coming months to have a conversation about why you think NATF is

important and what programs and services we can provide to better serve our patients and the healthcare providers who treat them.

I encourage each of you to reach out to me at any time with any ideas, feedback, suggestions, praise, and criticisms of NATF you may have. You are the reason we exist and your input is invaluable. I can be reached at 617-730-4120 or [kmikkelsen@natfonline.org](mailto:kmikkelsen@natfonline.org). Thank you again for your support and I look forward to seeing you at an NATF event in 2019!

Warm regards,



Kathryn Mikkelsen  
Executive Director, NATF







## Sam Rizzo: Turning a Medical Crisis into a Bright Future

*The Beat, August 2018 edition*



*Sam, an athletic 21 year-old, experienced her blood clots while studying at Colby College in Maine. Inspired by her experience, she is interning this summer at the Thrombosis Research Group at Brigham and Women's Hospital. Sam hopes to go to medical school after she graduates.*

### Q: WHEN DID YOUR EXPERIENCE WITH BLOOD CLOTS BEGIN?

I'm a rising senior at Colby. During my first two years of college, I was on the soccer team. I played goalie. I had been super involved in athletics since I was a little kid.

Last summer, I was training for soccer. We had a pretty intense



training workout. The first week of August, in the middle of a workout, I had sudden groin pain and I thought to myself, "Oh, that's really weird."

It didn't make a lot of sense. I took it easy for a couple of days and applied ice. A few days later, it was gone. There was no leg pain.

Then, I slowly felt my stamina deteriorating. I was getting tired during simple exercises. As I got closer to my tryouts, I was having heart palpitations without really knowing what they were. My chest was very tight and I was incredibly fatigued. I had all of these symptoms that I couldn't explain.

### Q: WHEN DID YOU REALIZE HOW SERIOUS THE PROBLEM WAS?

On the day of my soccer team's fitness test, August 30th, I had to drop out of the test because I couldn't breathe, and I had this horrible burning pain in my lungs. I had no idea what it was, because I should have been really fit given all of the training I had done.

That's when I knew something was wrong. I went to the health center at Colby and, luckily, met with a nurse practitioner who had seen pulmonary embolism (PE) in young people before. She knew to order me a D-Dimer test. I went to the hospital right down the street from school and got a CT scan, which later revealed that I had multiple bilateral PEs.

### Q: WHAT WAS YOUR EXPERIENCE IN THE HOSPITAL LIKE?

On August 31st, I was admitted to Maine General in Augusta, and I stayed there until

September 5th, which was my twenty-first birthday. I was the only patient on the floor under seventy when I was admitted. My mom said they treated me like a rare unicorn, because they weren't used to seeing young people like me.

I got discharged on my birthday and I started classes the next day. The doctors wanted to keep me one extra day because my INR wasn't therapeutic yet. My levels were low, but I refused to miss the first day of classes. So, I had to give myself lovenox shots, which were really not fun. But, I went right into classes.

### Q: DO YOU HAVE ANY FAMILY HISTORY OF BLOOD CLOTS OR DO THE DOCTORS KNOW WHY YOU GOT THEM?

Yes, my clots were provoked. My grandfather had a history of deep vein thrombosis and pulmonary embolism when he was much older, and he had a lot of co-morbidities. I was also taking birth control pills, which I'd been on since I was seventeen. I definitely think that the relationship between birth control pills and thrombotic events is one that isn't really discussed as much as it should be. On top of that, the doctors found that I'm heterozygous for the prothrombin gene mutation. So, with family history, genetics, and the triggering estrogen pills, it was the perfect storm.

### Q: HOW ARE YOU FEELING NOW?

It's been eleven months since the episode. I feel much better, physically and mentally.

I was on warfarin for seven months. I know there are a lot of newer treatment options, but my parents were familiar with warfarin and felt comfortable having me go for weekly INR check-ins when I was away at school. I came off warfarin and have been feeling pretty good. I do cardio every day, taking an off day here and there, and I make healthy choices.

**Q: HOW HAS THIS EXPERIENCE IMPACTED YOUR LIFE?**

The most immediate change in my life is that I'm not going to play soccer next year. Mentally, I'm just not ready yet. When you're on warfarin, you have to avoid trauma. You have to live life so cautiously. I'm trying to minimize my risk of having another episode. But, other than that, I did well in school and was able to do most of the things that I've always done.

Being a year out, I still have anxiety, but this experience has given me a whole new perspective on life. I stopped stressing the little things so much. My mindset switched from a "have to" to a "get to" attitude. I view everything that used to stress me out as a privilege. In classes I thought, "Wow. Everyone's worried about taking this exam, but two weeks ago I didn't know if I'd ever be taking another exam." I was lucky to be at school and sit for any exam, because I could have easily died from this.

**Q: WHAT WOULD YOU WANT OTHER BLOOD CLOT PATIENTS YOUR AGE TO KNOW ABOUT YOUR EXPERIENCE?**

This year my motto is, "it's not what you have, but what you do with it."

At first, when I was in the hospital it was awful, because I went from being a perfectly healthy athlete to a sick person. I felt horrible physically. Then, upon discharge I returned to my tiny liberal arts school and it seemed like everybody had their own perfect life while mine was going up in flames.

Initially I thought, "Why me?" I didn't smoke, I worked out, I wasn't supposed to be sick. My advice to anyone going through any health problem is to try to find the silver lining. I worked really hard to find the good in a very bad situation. I connected with the Thrombosis Research Group, and through studying what I have and reading other patients' stories, I've realized that I'm not alone in this. It's important to know that you are never alone in your struggles, and you can't look at yourself and say that you're defined by your medical condition.

The way everyone was reacting when I was first diagnosed, I thought, "Wow. I am such a medical anomaly." But the more people I talked to, the more I researched, and then coming to Boston, I've learned it's really not the case because PE and DVT can affect just about anyone at any point. This can really happen across all ages and genders.

**Q: DID THIS IMPACT YOUR DECISION TO BECOME A DOCTOR?**

I've wanted to be a doctor since I was ten years old. But, when I became the patient myself, I gained a new appreciation for life that furthered my desire to practice medicine.

At the first soccer practice that I was able to watch after being in the hospital, I was on the field, and I just thought "Wow, I'm really here. I'm living."

I was given this second chance at life that a lot of people that have blood clots don't get. I was really overcome by this realization and I thought, "What better way to spend my life than to be a doctor and grant that second chance to other people?"

**Q: WHAT ADVICE DO YOU HAVE FOR OTHER PEOPLE?**

Know your body. I had undiagnosed PE for three weeks. Being an athlete, we're conditioned to tough everything out. I knew something was wrong with me, but I had a fitness test to run. I thought, "Well, I'm not going to just not run my test. I'm an athlete, I'll do it."

It's important to listen to your body. If something is wrong and you have a gut feeling about it, get yourself seen by a nurse or a doctor, instead of trying to tough it out and risk a bad outcome. Nobody is invincible, and when you're an athlete you tend to think you are. I definitely thought I was. Anything can happen on any day, which is why you have to live in the moment and make the most of the time you have with the people you love.

*Thank you, Sam, for sharing your story!*

## 2018 Expense Report

In 2018, you helped NATF raise \$279,900 for the Annual Fund to support life-changing programs. With your help, NATF was able to:



**PROVIDE  
THROMBOSIS  
EDUCATION TO:**

**14,900**

healthcare providers  
through a series of medical  
symposiums



**ENROLL:**

**700**

patients in NATF's monthly online  
blood clot support group and  
CTEPH support group



**EDUCATE OVER:**

**149,950**

users on our website



**PROVIDE  
EDUCATION  
TO:**

**164**

patients at the  
Spring Patient Program

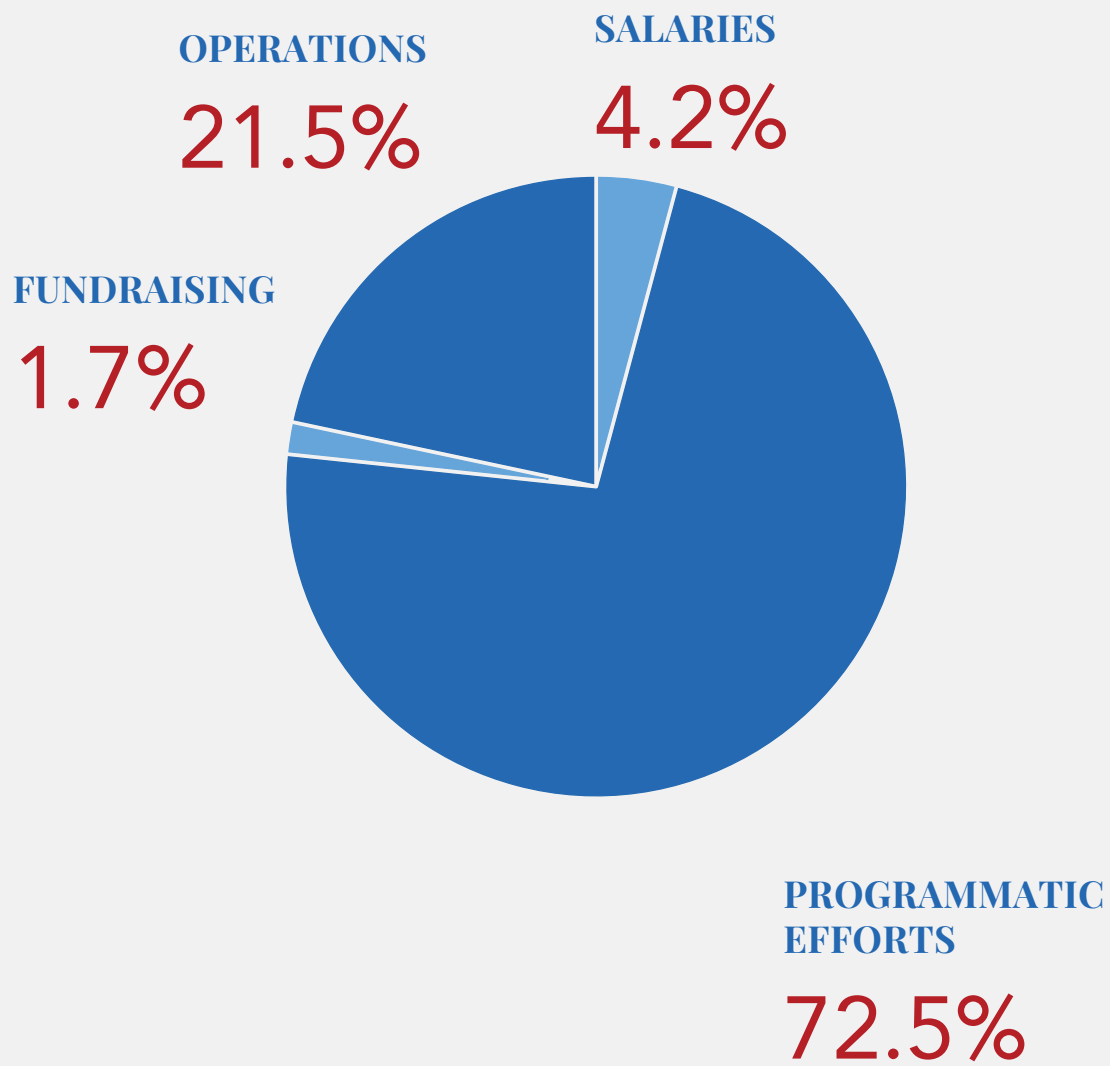


**LEND SUPPORT  
TO OVER:**

**150**

patients with our  
"Newly Diagnosed Patient" packet

How was your money spent:





## How long should I be on an anticoagulant?

*The Beat, August 2018 edition*



People take anticoagulants (commonly known as “blood thinners”) for many different reasons. Some use anticoagulants to help prevent a stroke when they have a heart arrhythmia called atrial fibrillation (also known as “AFib”). Others use it to treat a deep vein thrombosis (DVT; blood clot in the leg) or pulmonary embolism (PE; blood clot in the lung). Still others use it to help prevent a mechanical heart valve from building up a clot and becoming dysfunctional.

When people begin taking anticoagulants for conditions like these, there are several

important questions that must be answered. An important first question is, which anticoagulant to use? Currently there are a number of oral anticoagulants available in the United States (e.g. warfarin, apixaban, dabigatran, edoxaban, rivaroxaban). Another important question, once you’ve chosen the right medicine, is what dose of anticoagulant is appropriate? Finally, many people want to know how long they should be on the anticoagulant.

Making these decisions can be very challenging and involves the consideration of several factors unique to an individual person. Two of the most important considerations are the risk of bleeding and the risk of clotting. Your care team can estimate your risk of bleeding and clotting by taking into account your reason(s) for anticoagulation, such as age, sex, weight, medical history,

family history, alcohol use, other medical conditions, imaging studies and/or blood work. These factors are often used in conjunction with studies on thousands of patients that help to outline the risks and benefits of short vs. long courses of anticoagulation.

Finally, you (the patient) are a critical piece of the puzzle. Your input about your goals of medical therapy, your understanding of your medical condition, any side effects that you are experiencing, the cost of the medication, and many other factors should be considered. When determining how long you should be on an anticoagulant, it is important that you consult with a provider who specializes in such decisions and come up with an informed care plan with which you are comfortable. If you are unsure that the advice you received for how long to continue an anticoagulant is right for you, it is appropriate to get a second opinion.



In general, most people who have atrial fibrillation will require long-term courses of anticoagulation. This is because atrial fibrillation puts people at risk of developing a stroke. Even people who are not in atrial fibrillation regularly, those who take medicines to keep them out of atrial fibrillation, and those who have undergone ablation procedures are still at risk. Some people may choose to undergo a surgical procedure that can reduce the risk of stroke without the need for long-term anticoagulation. However, the majority of people with atrial fibrillation are recommended to take an anticoagulant for many years (often life-long).

People who have undergone surgery to have a mechanical heart valve placed are usually treated with anticoagulants. As long as the mechanical valve remains in your heart, you should remain on a blood thinner. Currently, warfarin is the only oral blood thinner used for

people with mechanical heart valves.

How long to take a blood thinner is a more complicated question for people with a DVT or PE. Sometimes a DVT or PE has developed because of a temporary (and reversible) risk factor. Examples include a recent surgery or immobilization, or the use of hormone contraceptive pills. For these people, the risk of developing another DVT or PE in the future is lower. So shorter courses of blood thinners (e.g. 3-6 months) are usually recommended for their first blood clot. Other people develop a DVT or PE without a good reason (called “unprovoked”). These people have a higher risk of developing another blood clot, so longer courses of anticoagulation are often recommended. Anyone who has developed recurrent unprovoked DVT’s or PE’s is usually recommended to be on long-term (or life-long) anticoagulation.

Of course, every person is unique, and it is important for you, your family, and your provider to discuss the risks and benefits of short- vs. long-term anticoagulation. The newer anticoagulants are often easier to take and associated with lower risks of bleeding (including the most dangerous forms of bleeding). Many more people are being recommended to take long courses of anticoagulation because the treatment is relatively safer than a decade ago.

Similarly, long-term anticoagulation does not necessarily mean life-long. Factors may change, and new therapies are always in development. This is why it is important to check in with your provider at least once a year to make sure that staying on an anticoagulant is still the best choice for you!



**Jordan Schaefer, MD**  
Hematology/Oncology  
University of Michigan  
Ann Arbor, MI



**Geoffrey Barnes, MD, MSc**  
Cardiovascular and  
Vascular Medicine  
University of Michigan  
Ann Arbor, MI

## NATF's 2018 Timeline

*"How often do we have an opportunity to make a difference in people's lives?"*

— Ron Feinstein

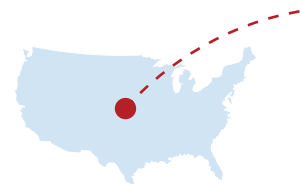
### FEBRUARY

"Preventing Blood Clots in Hospitalized Medically Ill Patients"

Portola Preceptorship  
Boston, MA

*"Two of my sisters and a very good friend have suffered from clots that entered the lungs. Keep up the good work!!!"*

— Ferrilynn Tiso



### APRIL

"Stopping the VTE Epidemic: An Innovative, Cutting Edge, and State-of-the-Art Action Plan"

Lankenau Medical Center  
Wynnewood, PA

Henry Ford Health System  
Dearborn, MI



### MARCH

"Vascular Protection: What Every Patient, Physician, Pharmacist, and Nurse Needs to Know"

Spring Patient Program  
Boston, MA

*"As a young blood clot patient and someone living with a genetic clotting disorder, I've turned to Dr. Goldhaber and the NATF for resources, education and understanding from people who grasp the illness inside and out!"*

— Anonymous

*"My very good friend suffered from a pulmonary embolism and introduced me to this cause. I am in full support of the work you do."*

— Christine and Frederick Crawford



## JULY

"New Strategies to Prevent CV Events After Hospital Discharge"

**International Society of Thrombosis and Haemostasis Dublin, Ireland**



## SEPTEMBER

**2018 Thrombosis Summit:**  
"Strategic Interventions to Conquer the Cardiometabolic Syndrome and Cardiovascular Risk in Diabetes"

**Boston, MA**

"New Strategies for Preventing Pulmonary Embolism, DVT, and Stroke"

**Loyola University Chicago, IL**

## NOVEMBER

"Dual Therapy with Low-Dose Anticoagulation and Aspirin: Reducing the Risk of Heart Attack, Stroke, and Leg Amputation"

**New York City, NY**

"Protecting Our Vulnerable Medically Ill Patients from VTE"

**American Society of Hematology San Diego, CA**

## AUGUST

"Preventing PE & DVT in Heart Failure and Other Medically Ill Patients"

"Vascular Protection Scientific Meeting"

**European Society of Cardiology Munich, Germany**

## OCTOBER

"Dual Therapy with Low-Dose Anticoagulation and Aspirin: Reducing the Risk of Heart Attack, Stroke, and Leg Amputation"

**Philadelphia, PA  
Rosemont, IL**

**Celebration of Gratitude Boston, MA**

## DECEMBER

"Dual Therapy with Low-Dose Anticoagulation and Aspirin: Reducing the Risk of Heart Attack, Stroke, and Leg Amputation"

**Boston, MA**

*"We love our mom and support this wonderful cause to raise awareness about blood clots and to make them extinct!"*

*— Caitlyn and Af Orlando*

*"I have been excited about and motivated by NATF's efforts in the fight against thrombotic disorders."*

*— Behnood Bikdeli, MD*



## Christina Martin: Running for NATF

*The Beat, October 2018 edition*



*Christina running the Chicago marathon.*

On November 4, 2018, Christina Martin will hit the road and run in Chicago's Hot Chocolate Run, a 15k race. Unlike others, she isn't running for the love of hot chocolate. Christina will run for blood clot awareness and to raise money for the North American Thrombosis Forum in memory of her high school sweetheart Manu Ajamu Williams, who she describes as "the love of my life".

### IN MEMORY OF MANU "SHAQ" WILLIAMS

Manu Williams, who friends called "Shaq," passed away from a blood clot on September 28, 2014, at the young age of 36. Remembered as a man who everyone loved, Christina describes him as a hard-working, fun-loving man that embraced everyone around him.

"I met him in high school. He was Mr. Cool and I was the nerd with glasses and braces,"



*Manu and Christina at their high school prom in 1998.*

Christina said. "When we were together, it was the best time of my life."

"After high school and college, I was very much the white collar marketer and he was a nurse. He drove trucks. He worked for UPS. He was very blue collar. It was very funny because it was kind of a yin and yang type of thing,"

said Christina, describing their relationship. "When I do things, it's very black and white, and I like things to be done a certain way. He was very whimsical and fun. So, we were very much opposites."

Manu's personable energy drew people to him.

"People would walk up to him and know who he was," Christina said. "He was friends with everybody."

"He loved everybody and people knew that. They felt that," she continued, explaining the way that people seemed to gravitate towards Manu.

"I honestly just think he was sent from God and everybody



*Manu "Shaq" Williams*

loved him."

Since Manu's passing, Christina has dedicated herself to raising awareness around blood clots.

### MAKING A CHANGE

"In 2014, when he passed, I decided that I was going to educate people about blood

clots, because people don't get it or understand it," explained Christina. Christina founded M.A.W. (Manu's initials) Charity Events in 2015, an organization that puts on events to raise money for blood clot awareness. She organized her first charity race in 2015, the "Stop the Clot Chicago 5K" in support of the National Blood Clot Alliance.

"At the end of the day, I had 300 runners. As I was looking at all of the people running, I realized that those people were running because they either suffered from a blood clot or they had lost somebody. I realized that anyone can make a difference and anyone can make a change," she continued.

Since then, Christina has organized a "Fighting Blood Clots with Street Fighter V" video game tournament for blood clot awareness. She also ran in the 2017 Chicago Marathon, sponsored by the National Stroke Foundation.

"I'm doing everything I can to educate people so that they know the symptoms, and they don't become a victim of it," Christina explained. Christina is dedicated to spreading information about blood clots in the hopes that she can help people better understand the condition.

"Having that conversation can make the difference between someone living and dying. I just want to tell people that if they've had a blood clot, just bring it up in normal conversation because you don't know where that information is going to go," Christina stressed. "I believe that if you just plant that seed, you don't know what it's going to do. You could save a life." ■





# Genetic Risk Factors for Blood Clots and the Role of Genetic Testing

*The Beat, December 2018 edition*



The blood clotting system plays a vital role in stopping bleeding in case of open damage to blood vessels. This vital function is accomplished by the coordinated work of platelets and a set of circulating inactive clotting factors. When the wall of a vessel is damaged, platelets clump together to form a plug and activate the clotting factors to form a mesh that strengthens the plug itself. This system is tightly regulated so that a blood clot (also called a thrombus) forms only when needed. However, at times clots form when there is no breach of the vessel wall, causing potentially life-threatening conditions such as deep vein thrombosis and pulmonary embolism (a clot that travels into the veins and then reaches the lung circulation causing a dangerous obstruction to blood flow).

Some individuals have genetic variations in one or more of their clotting factors that may predispose them to the development of a clot, usually in a vein. These genetic variations are collectively called "inherited thrombophilias" (from the Greek words for "clot" and "predisposition"). In the general population, about 10% of people have an inherited thrombophilia, a proportion that increases to about 40% among those who have already developed a clot.

The 5 most common inherited thrombophilias are called Factor V Leiden (V is the Roman

numeral for factor number 5), which affects 3-7% of the population, the prothrombin gene mutation G20210A, which affects 3-7% of the population, and deficiency of protein C, protein S, and antithrombin, each affecting less than 1% of the population. The presence of these genetic mutations increases the risk of a first clot several-folds, but once a patient has had a clot the risk of a second clot in the future is not much higher than that of a patient without thrombophilia who has developed a clot.

Most people at this point would be asking the experts: "If these genetic conditions predispose to clots, shouldn't we all get tested?"



Surprisingly, the answer is "no," for a number of reasons. Screening (testing in the absence of the disease) in the general population is not recommended because:

- 1) There are few symptomatic people in the general population and few people with the common thrombophilias develop symptoms from it.

- 2) We don't have a safe and cost-effective long-term method of preventive treatment if an abnormality is found.

In simple words: the preventive treatment would expose a patient to more risk (such as bleeding) than the possible benefit of not developing a clot.

As these conditions are genetic and may affect more than one member of the

same family, another frequent question that experts are often asked is: "My sister had a clot and has thrombophilia: should all family members get tested?"

Commonly, as thrombophilias are autosomal-dominant diseases, 50% of relatives will carry the same abnormal gene. If the family member also has the genetic abnormality but has not developed a clot, then the above considerations for the general population also apply. However, in specific high-risk situations (trauma, surgery, immobilization > 7 days, delivery) prophylactic treatment may be considered.

Finally, another common concern that the expert is asked to address is:

I have had a clot, should I be tested?"

In general, the evaluation for thrombophilias in all patients with a diagnosis of clots is not recommended. However, testing is considered appropriate in specific populations.

- 1) Patients with a family history of clot in a first degree relative before age 45.

- 2) Patients without a family history of clot who present with: age <45 years; recurrent thrombosis; with thrombosis in multiple veins or unusual veins (abdomen, brain)

*If you are concerned about your genetic risk for developing a blood clot, the best thing you can do is discuss your concerns with your healthcare provider. Only your healthcare provider can give you the personalized advice and individualized treatment that you may need.*



By Umberto Campia, MD, MS  
Brigham and Women's Hospital  
Harvard University



## Donor Honor Role of 2018

The Annual Report reflects all gifts and pledges received in 2018

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