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The Beat

A publication of the North American Thrombosis Forum

Patient Perspective – Peter’s Story

Peter is an avid athlete, who enjoys swimming and running, a family man, and a professional. After experiencing a PE, he found himself with a lot of questions about the healing process and anxiety around getting back to embracing his athletic lifestyle. He found his answers at NATF’s Blood Clot Support Group.

How did you discover you had a PE?

My wife and I were away for a weekend with friends of ours and having a great time. Next thing I knew, it was dinner time, and I was having some pain in my stomach. I didn’t have a clue what it could be.

I thought to myself, “I think I’ll be okay. Everybody’s out and having a good time. I’m going to kind of go crash a little bit and maybe I’ll feel better.”

At three in the morning, I woke up and I was bent over in pain. I had no clue what to

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Peter running the Falmouth Road Race before his PE August 2016.

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Just Relax

THE SCIENCE BEHIND USING MEDITATION TO COMBAT STRESS AND IMPROVE YOUR HEALTH



Stress. It’s something that everyone deals with in their lives, but too much of it can be very

unhealthy. It can lead to heart disease, insomnia, high blood pressure, and more.

“The stress response, in and of itself, is not a bad thing,” explained Dr. Darshan Mehta, Medical Director at the Benson-Henry Institute for Mind Body Medicine at Massachusetts General Hospital. “It was important for our survival as the human species. If there was an imminent danger in front of us, we were able to muster up resources in a short amount of time. This became known as the fight or flight response.”

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Letter from the Executive Director

Thank you for making 2017 yet another remarkable year for NATF! Our dedicated staff and board members have done an incredible job at expanding our outreach while strengthening our programs and services.

A few highlights from 2017 include:

- Hosted our first educational programs abroad in Berlin, Germany and Barcelona, Spain
- Held educational symposia at two large academic medical meetings in the USA: The Society of Hospital Medicine in Las Vegas, Nevada and the American Heart Association meeting in Anaheim, California
- Launched the new NATF website, www.NATFonline.org - the new site is designed to help patients and healthcare providers to get the information they need quickly and easily
- Grew online patient support group membership to over 600 registrants
- Created a comprehensive "First 6 Month Guide" for patients newly diagnosed with VTE
- Increased frequency of the NATF newsletter "*The Beat*" from quarterly to bi-monthly

I recognize and appreciate that you made NATF a success this past year.

Thank you for being a part of the NATF family.

Best wishes for a happy and healthy holiday season.



Kathryn Mikkelsen
Executive Director

PATIENT PERSPECTIVE – PETER'S STORY

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do. At about six in the morning, my wife woke up and we realized we needed to go to the hospital. Something was wrong with me.

I had a kidney stone.

I thought, "Okay, I can live with that."

The doctors decided to take it out.

I figured, "Okay, I'm good."

Low and behold, Thursday morning I was ready to go home, and the doctor came in and asked how I was feeling. He looked up and saw that my oxygen level was at 85.

"Is that good?" I asked him.

"Well no," he replied. "It's not good, something's wrong with you."

We needed to do more work to find out why my oxygen level was so low. They did some more tests. They came back on Friday and told me I had a pulmonary embolism (PE).

What was your reaction to that?

My first thought was, "Excuse me, what is that?"

"Well, what do I do now?" I said to the doctor, "I need some help."

My old man had passed away two years ago, and the last thing he said to me was, "Make sure you take care of everybody." I have three daughters, a beautiful wife, and my mother is 91 years old. I thought, "My job's not done yet. Am I going to be okay?"



Peter with his mom, wife and daughters at his mom's 90th birthday

The doctors explained that I would be fine, it was just going to take some time to get back to normal again.

I had a lot of questions: How do I get myself back to square one? How do I get back on the road to go running? How do I go swimming? Are my girls going to be okay? What's going to happen around me, and is this a reason for me to slow

down?

I'm very outgoing. I'm competitive. I'm not one of those guys that's going to kind of sit around waiting for something to happen. So, I said to myself, "Okay. We're going to nip this thing in the bud, one way or another."

What was it like after you got out of the hospital?

I left the hospital on Sunday. On Monday, I went for a walk and I felt really tired. "Why am I tired?" I

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A DOAC Deep Dive: Apixaban (Eliquis)

For the past several decades, warfarin has been the go-to anticoagulant drug for doctors, but new treatments have emerged in the form of direct oral anticoagulants (DOACs). DOACs are considered as or more effective and safer than warfarin, especially in relation to serious bleeding episodes. These anticoagulants include apixaban, betrixaban, dabigatran, edoxaban, and rivaroxaban.

NATF is dedicated to offering readers a closer look at each DOAC in order to empower patients to make informed healthcare decisions. Here is an inside look at apixaban:

WHAT IS IT?

Apixaban, also known as Eliquis, is an anticoagulant drug that is designed to reduce a patient's risk of developing a blood clot, which can cause deep vein thrombosis (DVT), pulmonary embolism (PE), and stroke from atrial fibrillation. Apixaban comes in a tablet form and is meant to be taken twice a day. Patients are generally prescribed 5 mg or 2.5 mg doses, which can be taken with or without food. The drug was approved by the FDA in December 2012.

HOW DOES IT WORK?

Apixaban is a direct factor Xa inhibitor, as are anticoagulants rivaroxaban, edoxaban, and betrixaban. They work by blocking a molecule called prothrombin from becoming thrombin. By doing this they interrupt the clotting cascade, which is the process through which blood clots form.

"The factor Xa inhibitors interrupt the process that allows blood to clot, known as the clotting cascade. They bind to factor Xa and stop it from continuing the clotting process," explained John Fanikos, RPh, MBA, Director of Pharmacy Services for Brigham and Women's Hospital.

Interrupting the clotting cascade ultimately stops a structure called fibrin from forming. Fibrin creates a web-like structure that catches blood platelets and other molecules, which then bind together and form a blood clot.

APIXABAN VS. WARFARIN

Apixaban is just as effective, if not more so, than warfarin.

"Apixaban has been shown to cause less major bleeding in patients when compared to warfarin," explained Fanikos, citing the ARISTOTLE trial.

In patients with nonvalvular atrial fibrillation, apixaban has been shown to be better than warfarin at reducing a patient's risk of developing a stroke. It also causes less bleeding.

The ARISTOTLE trial was a multicenter, double-blind, comparative trial. The trial randomized 18,201 patients with nonvalvular atrial fibrillation to take apixaban

or warfarin. After following up with these patients, researchers found that apixaban was superior to warfarin in preventing strokes and was associated with less major bleeding.

For patients with venous thromboembolism (VTE) or blood clots, apixaban has been shown to be just as effective as warfarin in preventing blood clots, but has a significantly lower risk of bleeding. This was demonstrated in the AMPLIFY trial.

The AMPLIFY trial was a phase III, randomized, double-blind trial. Patients were randomized to take apixaban or warfarin. While the two drugs showed similar rates of recurrent VTE, 1.8% of patients on warfarin had a major bleeding event and only 0.6% of patients on apixaban had a major bleeding event.

WHAT ARE THE RISKS?

As with all anticoagulants, bleeding is the biggest risk associated with apixaban. Patients must be careful to avoid injuries that may cause major bleeding events. Injuries to the head can be especially bad.

"Patients who are at risk for head injury, such as those who play sports, really need to be careful about their bleeding risk," remarked Fanikos.

For many patients, the lack of an antidote (to stop bleeding) for apixaban is a concern. They are often used to taking warfarin, which can be reversed with vitamin K administration. However, as the ARISTOTLE trial showed, bleeding is less likely to occur in patients with apixaban. Even with reversal options, bleeding on warfarin is still a major risk and treatment can only go so far.

Outside of major bleeds, patients may also experience gum bleeds, nose bleeds, increased bruising, bleeding around the eyes, and other forms of minor bleeding.

It's important for patients to continue taking apixaban as prescribed and it should never be discontinued without guidance from the prescribing doctor. Discontinuing apixaban increases a patient's chance of developing a blood clot.

INTERESTED IN LEARNING MORE?

It's important for patients to always consult with their healthcare provider before starting apixaban or any other DOAC. Only a healthcare provider can decide what treatment works best for an individual patient.

Talk to your doctor about what treatments are best for you.

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JUST RELAX

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"Over the past 40 years, we've learned that when that response is chronically activated, the consequences are contributing factors to a whole host of conditions, such as hypertension, respiratory conditions like asthma, and inflammatory bowel disease," he stipulated.

Patients managing chronic illnesses, such as blood clots, are especially at risk for being stressed and anxious. They are often balancing the responsibilities of their jobs and families, while also trying to manage their disease.

So how do people manage stress? For many, meditation and mindfulness are the answer.

"There have been a lot of studies done on mindfulness and stress," remarked Jonathan Greenberg, PhD, a Postdoctoral Research Fellow in the Lazar Lab at the Department of Psychiatry at Massachusetts General Hospital and Harvard Medical School. The lab where Dr. Greenberg works studies the impact of yoga and meditation on brain structure and function, as well as cognitive performance.

"One of the most well documented effects of mindfulness meditation is that it reduces stress. The most well-known and widely used form of mindfulness intervention is called 'Mindfulness-based stress reduction.'"

MEDITATION AND MINDFULNESS MAGIC

Meditation and mindfulness have been found to provide many benefits for those who practice them. Mindfulness is when participants "live in the moment" and are aware of how they're feeling emotionally and physically, and what they are thinking. It is a way of living, versus meditation, which involves practitioners taking time out of their day to practice.

Both can affect how the body responds to stressful situations and can even change how the brain develops.

"Mindfulness is typically associated with all of the biological aspects of stress reduction, such as a slower breathing rate and lower blood pressure," explained Dr. Greenberg.

"It also corresponds with brain changes that we see. The amygdala (which is involved with emotional processing, fear, threat, and anxiety) is one example. When we're afraid, the amygdala is over-activated. Individuals undergoing mindfulness training have been shown to have reduced amygdala activity when confronted with stressors. They have also been shown to return more quickly to baseline. If something stressful occurs, your amygdala activity goes up because you're very stressed, but the amygdala activity returns to its former relaxed state quicker in those attending mindfulness training."

"One of the studies in our lab has shown that reductions in grey matter density in the amygdala following mindfulness training correlate with reductions in stress. That means that the more people reduced their stress, the smaller their amygdala became," Dr. Greenberg continued, explaining the effects that mindfulness and meditation can have on the brain.

"One of the main things related to mindfulness training is improvements in emotional regulation, so that you are better able to regulate your emotions. Because you practice noticing what you feel and what you think, you're better able to nip the emotion in the bud. So once the stress begins, you realize it really quickly and are able to regulate it and prevent it from escalating into a full blown stressful reaction."

"FIGHT OR FLIGHT" VS. "THE RELAXATION RESPONSE"

Stress is an evolutionary mechanism that developed to help keep people safe. When the brain perceives a "threat," the central nervous system triggers the body's "fight or flight" response. The hypothalamus then releases adrenaline and cortisol in order to prepare the body to either fight the threat or run away from it.

This response is helpful when people are facing life-threatening situations, but many people experience this response in reaction to everyday, harmless "threats," such as long lines, traffic, heights, or public speaking. Chronic stress develops when the body stays in this state of "fight or flight" and the central nervous system doesn't return to its normal levels.

Meditation and mindfulness help to combat this by triggering the relaxation response.

"The relaxation response was a term that Dr. Herbert Benson coined. He was one of the thought leaders in the field," Dr. Mehta explained. "It's this counter-stress physiology that can mitigate the negative effects of the stress response, when it is chronically activated."

The relaxation response affects the body on an epigenetic level and a physical level.

"As a clinician, I like to think of three dimensions that the relaxation response would affect," said Dr. Mehta, exploring the ways that the relaxation response can help patients coping with chronic illness. "One, it affects the manifestation of symptoms, such as fatigue, sleep disturbances, and pain. We know that people can affect how they experience these symptoms through the elicitation of the relaxation response. The second is disease progression. For example, we know that the chronic stress response can lead to the progression of diseases such as diabetes, hypertension, or vascular disease. The relaxation response can help combat this. The third dimension is through management of the condition."

Patients experiencing stress are less likely to manage their own health and can experience trouble with self-

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PATIENT PERSPECTIVE – PETER'S STORY

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wondered, not knowing enough about the PE. I did a little research and realized it was going to be some time before I got back to normal. It actually made me slow down and smell the roses.

I'm getting back out on the road, a little bit at a time. It's like starting all over, like having an injury. That kind of brought me to the forefront of starting to walk, starting to run a little bit, getting back in the pool, and going back to work with my friends.

Peter became a patient of Dr. Samuel Goldhaber, who suggested he attend NATF's Boston Blood Clot Support Group.

What made you attend support group?

I realized that I wasn't really myself. I normally wake up in the morning with a "let's go" attitude. I'm one of those guys that says, "Okay, let's get going. We're going to have breakfast, and we're going to go out. Let's go do something."

Instead, I was kind of just lethargic. I wasn't being myself.

At first, I thought I could deal with it myself, but I had the support group on my calendar at home on the refrigerator. I had never been to something like that.

I said to my wife, "Donna, I think I want to go to see this. I want to see what this is all about."

And she replied, "Let's go, if that's going to make you feel better. You know what, because you're not yourself."

That was one of the problems. If she can notice it and my kids can notice it and I can notice it, I really needed some help.

What was your first support group like?

We showed up at the meeting, sat at the table, and we looked around. I thought, "Oh my goodness gracious. This is pretty cool, because I'm not the only one out there that's like this."

I can remember that night, it was pouring buckets out and I looked over to my left and there was a gentleman in biking shoes and a biking helmet. He told me, "You can get back. Believe me, you can get back and you'll be okay."

I felt so good when I left that night.

I remember one other person sat right at the corner of the table, across from me, and as we were leaving, she said "Peter, come here a minute."

Now, I didn't know this woman. She just gave me a big fat hug. I said, "Thank you for that, but what's that for?"

She said, "Nineteen years ago, I sat in your same chair, petrified. I've seen the fear in your face and I want to let you know that you're not alone, that this is going to make you better. You will be okay. It's just a matter of time before you can grasp this whole thing of emotion and anxiety, and put that to rest."

It has been great to see that every day people go through this, and they are able to be okay.

What has been the biggest adjustment for you?

I had never taken any medication before, until I started to take one Xarelto pill a day.

I realized that life really doesn't change. Though, there are still symptoms. I get a little bit tired and, if I'm on a trip, I need to kind of get up and walk around.

It's important to know what you can do and what you can't do. If I didn't show up at a support group, I'd be on my own trying to guess all the time.

How are you feeling now?

It all started February 27th, and then I was diagnosed on March 4th. I'm six months out, and so far, so good. I'm kind of back to reality and I'm doing things I wanted to do before. Work is better. I can kind of do what I wanted to do, whereas before I had a lot of questions.

I can't thank Dr. Goldhaber and NATF enough for introducing me to the support group. It's been so helpful knowing it's there.



Peter and his wife Donna

Peter is an active member of NATF's Boston-based Blood Clot Support Group. If you are interested in attending, or starting a support group in your area, please email Events@natfonline.org.

JUST RELAX

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care tasks, such as taking their medication properly, getting enough exercise, and eating a healthy diet. Using the relaxation response to combat this stress can help patients better cope with their health problems.

WORKING MEDITATION INTO YOUR LIFE

Could you use some stress reduction in your life? Give meditation and mindfulness a try.

While there is no right “dose” of meditation, Dr. Mehta recommends that people try to practice 10-20 minutes of meditation daily. “It’s like brushing your teeth, it should be an activity of daily living,” he explained.

He also recommends people find a group to participate in. “I think having guidance is important, just like any skillful practice,” he said.

“Be persistent,” encouraged Dr. Greenberg, offering advice similar to Dr. Mehta’s. “Try to link it to something that you routinely do every day. It also helps to attend classes, or do it in a group session to help you keep it

active in your mind.”

Mindfulness classes and meditation groups are available in cities across North America. More and more, doctors are adopting it as a secondary form of treatment to compliment medical therapies.

Check with your local hospital or your primary care physician for recommendations of meditation groups near you.

7 Tips to Help You Stay Heart-Healthy this Holiday Season



The holidays are here! It’s an exciting time of year, but it can be challenging for people looking to eat healthy. Between holiday office parties, parties with family

and friends, and the holidays themselves, sweets and treats are everywhere. It can seem like every social gathering revolves around rich meals that, though delicious, are not as heart-healthy as many would like.

Don’t let this get you down! It’s possible to enjoy the holidays in a healthy way without losing out on your favorite foods. Here are 7 tips to follow this holiday season:

1. Take Everything in Moderation

Don’t cut out the foods that you really love! It’s okay to treat yourself to what you truly enjoy. By indulging a little, you can avoid cravings that can lead to binging on treats later on. Be careful though, “moderation” is the key word here.

Keep a close eye on serving sizes. While it might be okay to have a small glass of eggnog, don’t fill the largest glass you can find and tell yourself, “It was only one drink.”

2. Embrace Portion Control

How much you eat matters, whether it’s Nana’s pie or Aunt Jen’s turkey. Using small plates and bowls can help you avoid taking too much food. No one likes to throw away food and many people will finish all of the food on their plate. Smaller plates can help you avoid overeating, and you’ll be less tempted to take food you don’t really want.

3. Look For Healthy Alternatives

Embrace healthy alternatives when you’re cooking. This can include:

- Use only whole grains
- Replace butter with vegetable oil or margarine
- Use low-fat or skim milk while cooking, instead of whole milk
- Replace carbohydrates in a meal with legumes, such as beans and lentils (Quinoa is another great alternative.)
- Use unsweetened applesauce to replace eggs, butter, or oil in baking recipes
- Embrace unsweetened, flavored waters over your favorite soda

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4. Check Your Labels

When you're out shopping for ingredients, make sure to check the labels on different brands. Choose ingredients with less sodium and sugars. You'll be able to create the same wonderful meals, but they'll be healthier.

5. Watch Where You Sit

When you're attending a holiday party, avoid sitting in front of the "snack" table and leave the dinner table when you're done eating. Having those delicious temptations in front of you can lead to mindless eating.

6. Offer to Bring a Heart-Healthy Dish

If you're worried about what foods will be at a holiday party, offer to bring something. That way you can guarantee there will be healthy foods for you to snack on. Vegetables with hummus and fruit salads are just two great options. You won't be the only person at the party who will appreciate a healthier option over the traditional chips and dip.

7. Eat Before You Go

In your kitchen, you're in control. Showing up at a holiday party hungry is never a good idea. By eating a healthy meal before you go, you'll be less likely to overeat or snack on foods you wouldn't normally.

Looking for a heart-healthy recipe this holiday season? Try out this savory roasted brussels sprouts recipe from the *New York Times*:

Ingredients

- 1 pint brussels sprouts
- 4 – 6 tablespoons of extra virgin olive oil (For coating the bottom of the pan)
- 5 cloves of garlic, peeled
- Salt and pepper to taste
- 1 tablespoon balsamic vinegar



Instructions

1. Pre-heat your oven to 400 degrees.
2. Cut off the bottom of your brussels sprouts and chop them in half. Heat your oil in a pan over medium-high heat until it simmers (*The New York Times* suggests using a cast-iron pan). Place one layer of your brussels sprouts cut-side down in the pan and add your garlic. Sprinkle on your salt and pepper.
3. When your brussels sprouts have become brown on the bottom, it's time to move them to the oven to roast. You should shake the pan every five minutes and cook them until they are brown and tender all over. This should take 10 to 20 minutes.
4. Stir in the balsamic vinegar. Add more salt or pepper for the taste you're looking for.
5. Your brussels sprouts are ready to be served!

Happy holidays!

Interested in attending NATF's
"Avoiding the Avoidable: Pathways for VTE Prevention
in the Vulnerable Medically Ill" symposium?

Keep an eye out, because we're coming to a city near you!



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Upcoming Events for 2018

In-Person Blood Clot Support Group at BWH **Jan. 23 and Feb. 13**

All support groups start at 7:00 p.m. and are held at Brigham and Women's Hospital. To register, email Kathryn Mikkelsen at KMikkelsen@NATFonline.org or call 617-730-4120.

Online Blood Clot Support Group

Jan. 30 with Drs. William Auger and James Welker – CTEPH Awareness

Feb. 27 with Dr. Rachel Rosovsky – Cancer and

Blood Clots: The Importance of Follow-Up Care

March 19 with Dr. Aaron Kithcart – Lifestyle Changes After a Blood Clot

April 17 with Dr. Alec Schmaier – Treatment Options for PE/DVT: Demystifying the Drugs

NATF's Online Blood Clot Support Group offers patients the opportunity to share common concerns, offer support to one-another, and learn up-to-date and accurate information on research in the field of

VTE. Dates and speakers for our upcoming meetings can be found at www.natfonline.org. To register for this online support group, please contact info@natfonline.org.

Avoiding the Avoidable: Pathways for VTE Prevention

in the Vulnerable Medically Ill

April 19 – Philadelphia, PA

April 27 – Detroit, MI

NATF will be hosting a series of free programs, designed for medical professionals, that will center on protecting medically ill patients across the United States from VTE. Doctors, nurses, pharmacists, and other healthcare providers are invited to join us for the opportunity to earn CME credits and learn about the latest in VTE treatment and prevention.

For more information on any of these events,
email events@natfonline.org.

We look forward to hearing from you!

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