ATTR AMYLOIDOSIS REVEALED™

EDUCATIONAL BROCHURE

GO BEYOND THE SURFACE OF ATTR

MICHAEL,
living with wtATTR

Uncover more about ATTR amyloidosis (ATTR), an underdiagnosed and progressive disease.

THERE'S MORE TO KNOW ABOUT ATTR

ATTR is a progressive disease, which means symptoms can get worse over time and affect everyday activities, such as using the stairs or going for a walk. That's why it's important to work with your doctor to get an accurate diagnosis as soon as possible and discuss your disease management plan.

This brochure is intended to give an easy-to-understand overview of ATTR and its cause. Use it to uncover the layers of ATTR and have more informed conversations with your doctor.

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What is ATTR amyloidosis (ATTR)?

ATTR is an underdiagnosed disease caused by the buildup of abnormal proteins called amyloid deposits.

Amyloid deposits damage parts of the body, causing symptoms of ATTR that can worsen over time. These symptoms affect multiple parts of the body including the **heart, nerves,** and **digestive system**.

WHAT CAUSES ATTR?

TTR

Transthyretin (TTR) is a protein made primarily in the liver that carries vitamin A and other substances throughout the body.

Abnormal TTR

In ATTR, TTR proteins become toxic to the body by **misfolding** and taking on an **abnormal shape**.

Amyloid deposits

This abnormal shape causes the protein to build up over time in various parts of the body, including the **heart, nerves,** and **digestive system**. The buildup of abnormal proteins is called **amyloid deposits**.

What are the different types of ATTR?

There are 2 types of ATTR, wild-type (wtATTR) and hereditary ATTR (hATTR).

wtATTR This type is not inherited and may be associated with aging.

hATTR This type is caused by an inherited gene variant, or change, in the TTR gene passed down through family members.

The gene variant causes the TTR protein to misfold and build up in the body as amyloid deposits.

Either type of ATTR can manifest in a variety of ways. wtATTR is more commonly associated with heart-related (cardiac) symptoms, and hATTR is more commonly associated with heart-related and/or nerve-related (polyneuropathy) symptoms. ATTR with heart-related symptoms may be referred to as **ATTR with cardiomyopathy (ATTR-CM)** and ATTR with nerve-related symptoms as **ATTR with polyneuropathy (ATTR-PN)**.

For a closer look at the inherited condition, visit **ATTRrevealed.com/hATTR**

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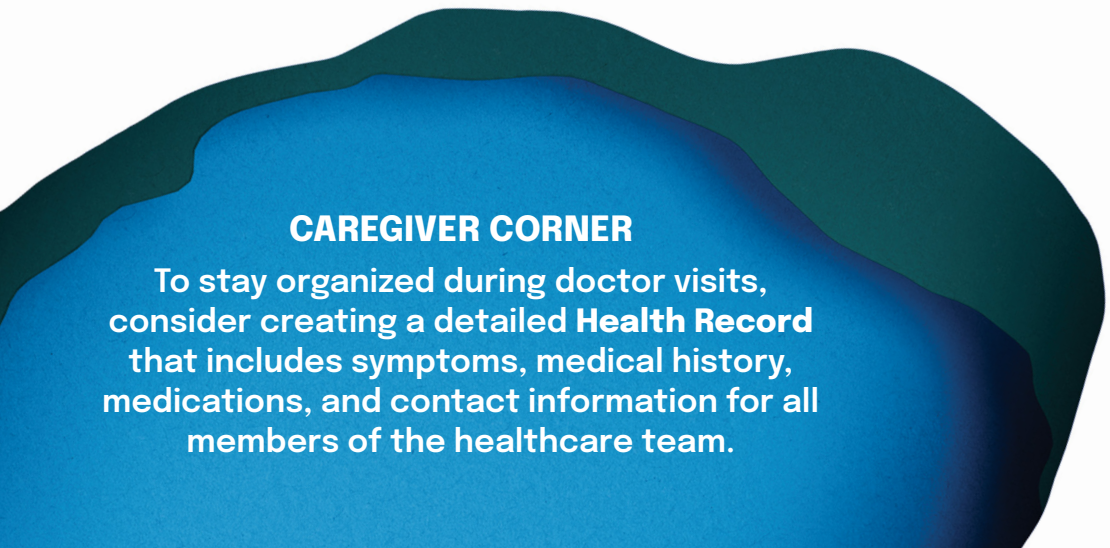
What are possible symptoms of ATTR?

Continuous amyloid deposit buildup can lead to various symptoms and conditions, including cardiomyopathy and polyneuropathy:

- **ATTR with cardiomyopathy (ATTR-CM)** means the buildup of amyloid deposits causes the heart muscles to thicken and makes it difficult for the heart to pump blood to other parts of the body.
  - Cardiomyopathy can lead to **heart failure,** commonly experienced as shortness of breath, fatigue, weakness, and swelling of the legs, which may limit physical activity.
- **ATTR with polyneuropathy (ATTR-PN)** means the buildup of amyloid deposits damages the nerves affecting sensation, movement, strength, and bodily functions such as digestion, urination, and sexual function.

Tell your doctor about all your symptoms, even if they seem unrelated.

Reveal more with the Symptoms Tracker & Checklist
at **ATTRrevealed.com/tracker**



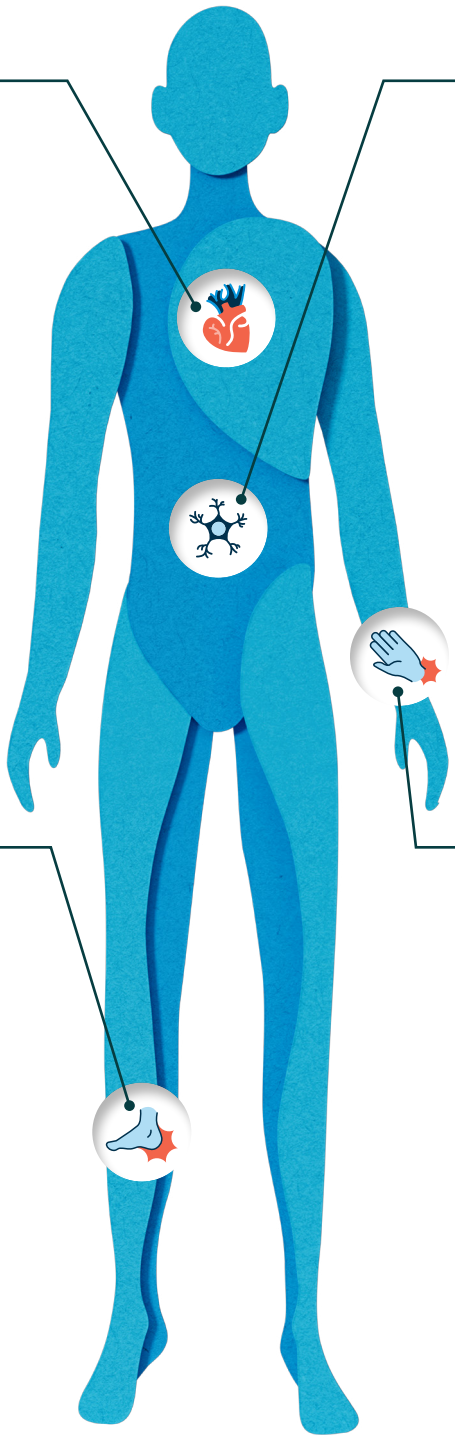
CAREGIVER CORNER

To stay organized during doctor visits, consider creating a detailed **Health Record** that includes symptoms, medical history, medications, and contact information for all members of the healthcare team.

What parts of the body are affected by ATTR?

Symptoms/conditions related to the heart:

- Heart failure
- Abnormal heart rhythms (arrhythmias)
- Irregular heartbeat
- Shortness of breath
- Fatigue
- Fainting
- Leg swelling (edema)



Symptoms related to control over bodily functions:

- Digestive issues (nausea and vomiting, diarrhea, constipation)
- Dizziness upon standing
- Unintentional weight loss
- Recurrent urinary tract infections (UTIs)
- Abnormal sweating
- Sexual dysfunction

Symptoms related to nerves in hands, feet, arms, and legs:

- Tingling
- Numbness
- Burning pain
- Loss of sensitivity to temperature
- Loss of movement control
- Weakness

Symptoms related to the muscles, joints, and tendons:

- Carpal tunnel syndrome
- Lumbar spinal stenosis
- Biceps tendon rupture
- Rotator cuff injury
- Osteoarthritis
- Trigger finger

This is not a complete list of symptoms that may be experienced by people with ATTR. Each person has a different experience, and you may not have all of these symptoms, or you may not have them at the same time.

What are some of the signs of ATTR?

Because ATTR can be mistaken for other conditions, it's important to recognize possible signs of the disease, including:

Heart failure with a history of other conditions unrelated to the heart, such as nerve damage, biceps tendon rupture causing a sudden sharp pain in the elbow or shoulder, and/or carpal tunnel syndrome

Heart failure that doesn't get better with common medicines prescribed by your doctor

Symptoms of nerve damage such as a loss of sensitivity to temperature, tingling or numbness in the hands and feet, digestive issues, and sexual dysfunction

Carpal tunnel syndrome, especially in both wrists, may be one of the first symptoms of ATTR. This condition is common and can cause pain, numbness, and tingling in the hands, wrists, and arms. Carpal tunnel syndrome may appear up to **10 years** before ATTR is diagnosed.

Symptoms that affect the muscles, joints, and tendons may appear years before symptoms of heart failure in people living with ATTR.

CAREGIVER CORNER

Helping your loved one track their symptoms can make it easier for you to talk with their doctor about diagnosis and disease management.

How can ATTR affect your health?

ATTR is a progressive disease, which means symptoms get worse over time.

New or worsening symptoms such as increased difficulty walking, trouble breathing, or heart palpitations may be possible signs of ATTR progressing. In ATTR, continuous amyloid deposit buildup can cause continued damage that could lead to:

Decline in physical health

Reduced ability to participate in social activities

Increased emotional burden

It is important to partner with your healthcare team. Whether you're diagnosed or not, keep track of how you're feeling and how your symptoms may be affecting your life. That information is critical for your doctor in managing your disease.

Tell your doctor if you have any new symptoms or if they have worsened over time.

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Why is an accurate diagnosis important?

ATTR can affect how you live your life, and symptoms can get worse over time. So it's crucial to partner with your healthcare team to get the right diagnosis as early as possible.

Misdiagnosis or delays in diagnosing ATTR are common because the varying symptoms can be mistaken for other conditions, including:

- **Hypertensive heart disease:** damage to the heart caused by high blood pressure
- **Hypertrophic cardiomyopathy:** disease that thickens the wall of the left ventricle of the heart and impairs heart function
- **Chronic inflammatory demyelinating polyneuropathy (CIDP):** autoimmune disorder in which the body attacks its own nerves
- **Idiopathic neuropathy:** damage to the nerves with an unclear cause

An accurate diagnosis is essential to ensure your doctor and healthcare team are managing your condition appropriately. Misdiagnoses may lead to unnecessary complications. That's why open communication with your healthcare team is so important.

If you have questions about the path to diagnosis, ask your doctor for more details.

How can you prepare for a diagnosis?

Here are some ways you can help with the diagnosis process:

- **Know the condition.** Uncovering the layers of ATTR and understanding how the disease develops better prepares you to recognize symptoms and possible signs of progression.
- **Track and share your symptoms.** Tell your doctor about all the symptoms you are experiencing, even if you think they're unrelated to each other or don't apply to your doctor's specialty.
- **Talk to your family.** Even if your family members may not have been diagnosed with hATTR, a family history of symptoms related to hATTR may be a sign of the disease. It's important to understand if your condition may run in the family.

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living with hATTR

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What tests may be needed for a diagnosis?

There are several tests your doctor may use to help in getting an accurate ATTR diagnosis. Being familiar with these tests can help you talk with your doctor about the diagnosis process.

PRELIMINARY TESTS

Depending on your symptoms, your doctor may conduct assessments of heart and nerve function or order imaging studies or laboratory tests to determine the cause of your symptoms, including:

- Electrocardiography (ECG/EKG)
- Echocardiogram (Echo)
- Cardiac MRI (CMRI)
- Nerve conduction study (NCS)
- Electromyography (EMG)

CONFIRMATORY TESTS

If preliminary test results suggest the possibility of ATTR, your doctor may perform additional tests to help confirm the diagnosis, such as:

- Technetium pyrophosphate scintigraphy (PYP scan)
- Tissue biopsy
- Genetic testing

GENETIC TESTING

Genetic testing is needed to determine if you have wtATTR or hATTR and if other family members should get tested to understand their own risk of inheriting a gene variant associated with the disease.

These are not complete lists of tests that can assess symptoms or help confirm diagnoses related to ATTR. Depending on your symptoms, your doctor may order other tests.

Explore the process with the Guide to Diagnosis
at **ATTRrevealed.com/diagnosis**

What treatment options are available?

If you are diagnosed with ATTR, starting treatment right away is key to managing your symptoms.

There are treatment options available for patients with certain symptoms and types of ATTR that address the underlying cause of the disease. These work by:

- **Silencers:** Reducing the amount of TTR protein made in the body, which can help decrease the formation of amyloid deposits
- **Stabilizers:** Decreasing the amount of TTR proteins that take on an abnormal shape and form amyloid deposits in the body

Since ATTR can worsen quickly over time, **it is important to share any new or changing symptoms that you or your loved one are experiencing**. Managing the condition is an ongoing process, so it is important to have these conversations with your healthcare team.

Talk to your doctor about what treatment plan may be right for you.

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How can you partner with your doctor?

TTR amyloid deposits continue to build up over time, which can cause symptoms to worsen. So it's important to work with your healthcare team to get a diagnosis early and talk to your doctor regularly about your condition.

Having a strong relationship with a doctor who knows how to manage ATTR can be key to determining a diagnosis. Here are ways to get ready for your next conversation with your healthcare team.

Prepare a list of your symptoms. Because ATTR can affect many parts of your body, it's important to be aware of possible signs and symptoms. Even if you've already been diagnosed, let your doctor know about any new or changing symptoms, whether they seem related to each other or not.

Gather your medical and health information. Have your and your family's health history and test results ready to help your doctor determine if you have the hereditary form of the disease. Additional data from any health tracking devices or apps, like activity-level trackers or a heart-rate monitor, can help with assessments during your visits.

List all your medications. Maintain a list of your current and past medications, especially if you've taken medicines for heart failure that may not be improving your condition.

What are some key questions to ask?

Asking key questions will help you understand the next steps and establish how you can best work with your doctor. For example:

> What is the best way to track my symptoms?

> Which details of my symptoms are important to record and share?

> How can ATTR worsen over time?

> What should I do to monitor my symptoms?

> Can we talk about next steps if I am diagnosed with ATTR?

CAREGIVER CORNER

Communication is key to caregiving, as it helps strengthen your bond with your loved one. Open communication with the healthcare team is also vital to managing your loved one's health.

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What other resources are available?

Whether you are starting your ATTR journey or have been managing the disease, here are some sources for additional information and support:

Amyloidosis Foundation
www.amyloidosis.org

Amyloidosis Research Consortium
www.arci.org

Amyloidosis Support Groups
www.amyloidosissupport.org

Caregiver Action Network
www.caregiveraction.org

The Foundation for Peripheral Neuropathy
www.foundationforpn.org

Global Genes
www.globalgenes.org

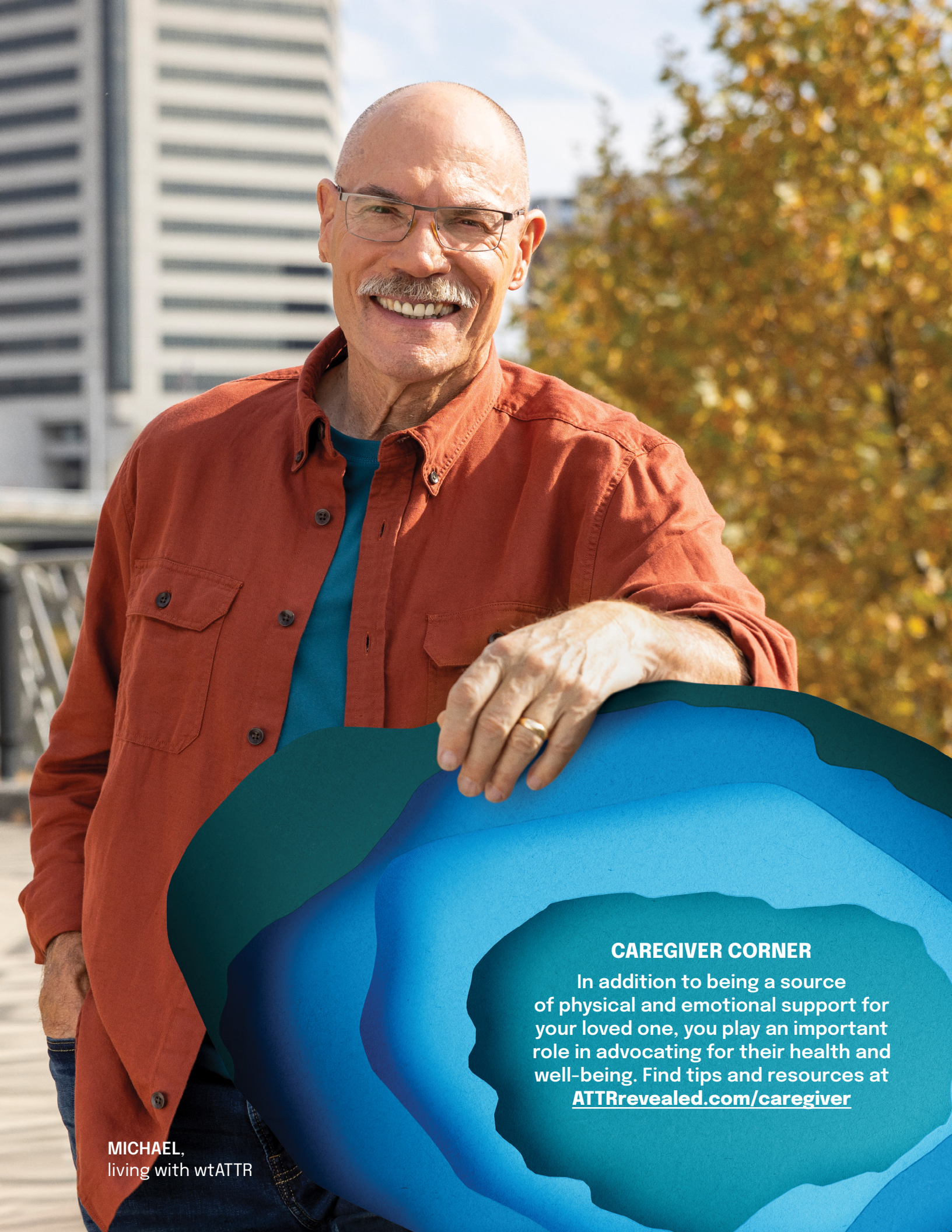
Mackenzie's Mission
www.mm713.org

National Alliance for Caregiving
www.caregiving.org

National Organization for Rare Disorders
www.rarediseases.org

oneAMYLOIDOSISvoice
www.oneamyloidosisvoice.com

Now that you've gone beyond the surface of ATTR, it's time to have an informed conversation with your doctor.



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In addition to being a source of physical and emotional support for your loved one, you play an important role in advocating for their health and well-being. Find tips and resources at **ATTRrevealed.com/caregiver**

Scan the code or visit www.ATTRrevealed.com to learn more about ATTR and take advantage of other resources.

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