

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 what to do next.

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 with symptoms that can worsen over time and 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**.



Amyloid deposits damage parts of the body, causing symptoms of ATTR.

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)**.

CAREGIVER CORNER

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

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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. Visit ATTRrevealed.com/tracker to download a Symptoms Tracker & Checklist.

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 related to the heart:

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

Symptoms related to control over bodily functions:

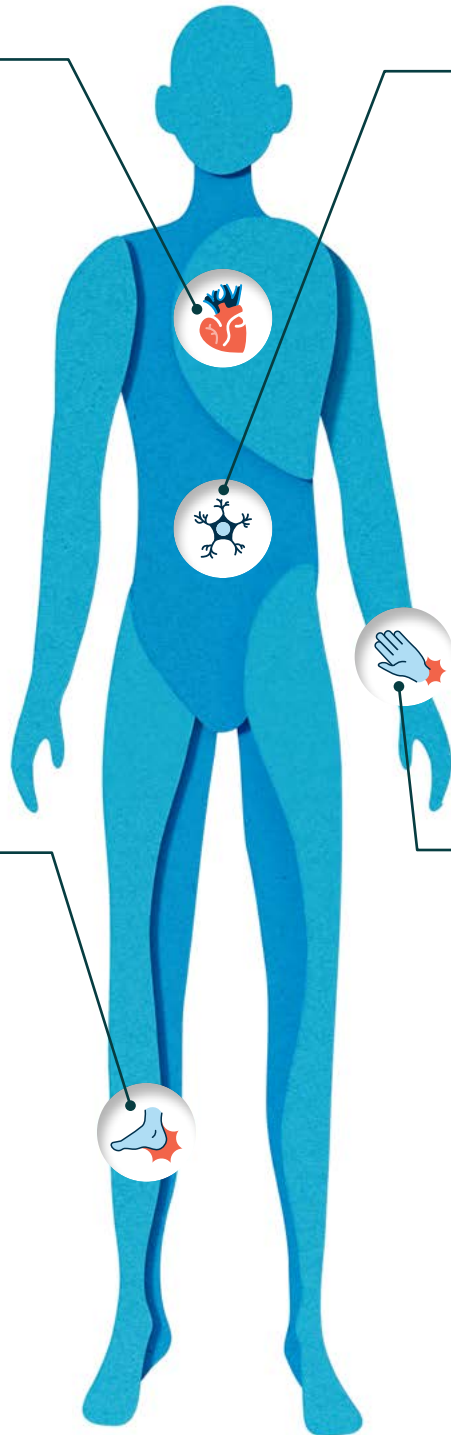
- Digestive issues (nausea and vomiting, diarrhea, constipation)
- Dizziness upon standing
- Unintentional weight loss
- Recurrent urinary tract infections (UTIs)
- Abnormal sweating
- Sexual dysfunction

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:

- Having heart failure and 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
- Experiencing 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

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



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.

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 can 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

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



It's 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.

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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.



CECE,
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.

For additional information about these tests, visit ATTRrevealed.com/diagnosis

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

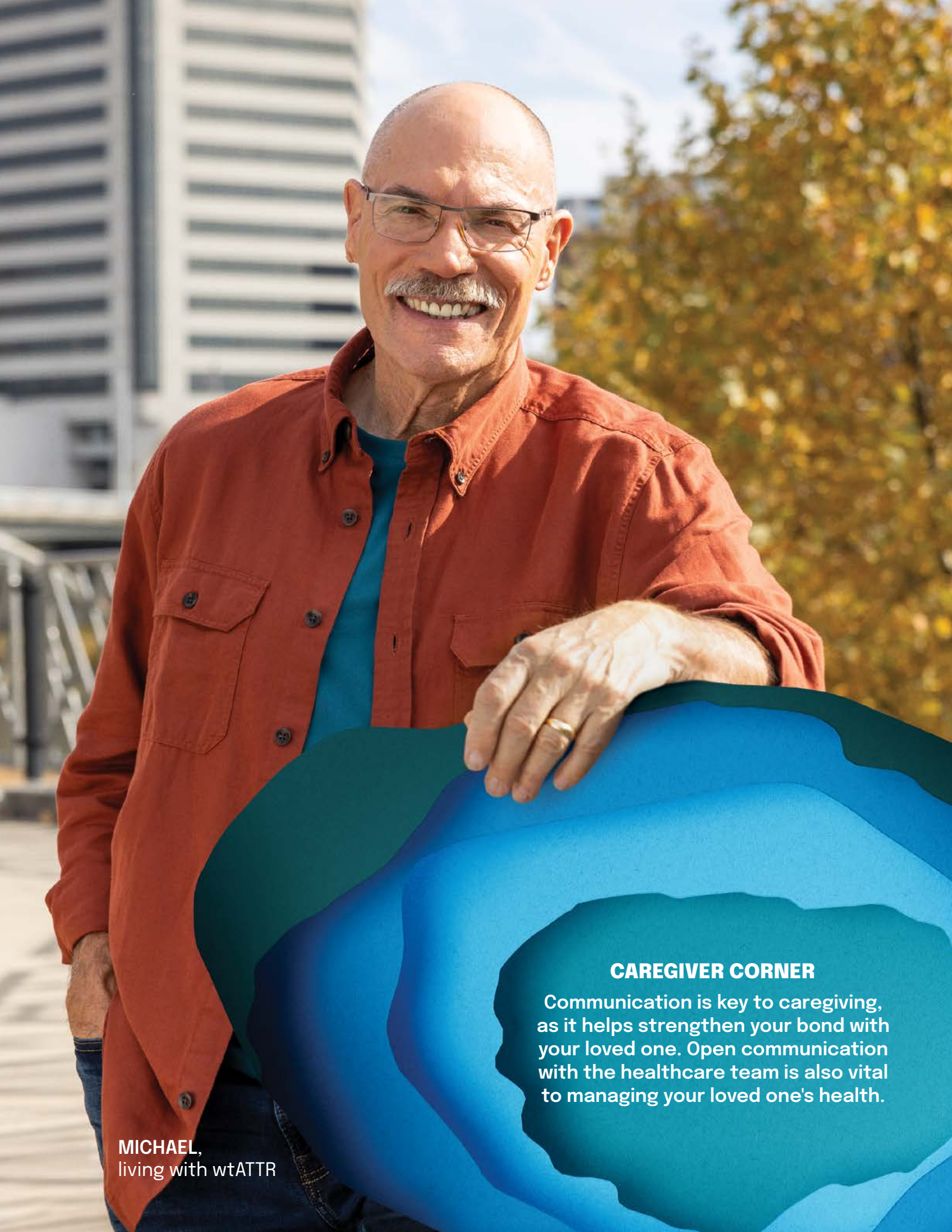
If preliminary test results suggest the possibility of ATTR, your doctor may perform additional tests to help confirm the diagnosis, such as:

- 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.



MICHAEL,
living with wtATTR

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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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 medical history and test results ready. 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.



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

- 01** What is the best way to track my symptoms? Which details are important to record and share?
- 02** How can ATTR worsen over time? What should I do to monitor my symptoms?
- 03** Can we talk about next steps if I am diagnosed with ATTR?

What other resources are available?

Whether you're starting your ATTR journey or have been managing the disease, there are helpful resources and support for you.

Here are some sources for additional information and assistance:

Amyloidosis Foundation

www.amyloidosis.org

Amyloidosis Research Consortium

www.arci.org

Amyloidosis Support Groups

www.amyloidosisupport.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.

IRV, living with wtATTR, and
REBECCA, his spouse and caregiver



Scan the code or visit www.ATTRrevealed.com
to receive more educational resources and
learn about ATTR.



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