

A Healthier You



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Our mission at National Wellness & Fitness Association is to enhance the quality of life for our members by providing educational information, benefits and services. The articles in this newsletter are meant to be informative, enlightening, and helpful to you. While all information contained herein is meant to be completely factual, it is always subject to change. Articles are not intended to provide medical advice, diagnosis or treatment.

When Cancer Spreads Improving Treatments for Metastasis

(NIH-News In Health) A cancer diagnosis can be scary. Some cancers can be cured if caught early. Treatments like surgery, radiation, and chemotherapy can destroy many early-stage cancers. But cancer can be difficult to treat when caught later on, after it spreads.

Cancer cells are sneaky and stubborn. They are hard to stop from growing and spreading. Cancer cells can also break away from their original location and settle in other parts of the body.

When this happens, it's called metastatic cancer, or metastasis. This is sometimes called stage 4 or stage IV cancer. When cancer migrates to other organs, it can disrupt their function and cause life-threatening problems.

Metastatic cancer is serious and hard to treat. In fact, most cancer-related deaths (about 90%) are caused by metastatic cancer and not the original tumor, called the primary tumor.



Researchers have been working to better understand how metastasis occurs so they can find new ways to prevent or treat it. Thanks to medical advances, some people can live for many years with metastatic cancer when it is well-controlled.

Adapting to New Locations

Cancer cells can spread to almost any part of the body. The liver, lung, and bones are the most common places. Different types of cancer tend to spread to certain locations. For instance, pancreatic and colon cancer commonly spread to the liver. Breast cancer and a type of skin cancer called melanoma can spread to the brain.

Metastatic cancer is considered to be the same type of cancer as the original tumor, even though it has moved to a new place.

“It can sometimes be confusing. Breast cancer that spreads to bone is still considered to be breast cancer and not bone cancer,” says Dr. Rosandra

Kaplan, a physician and cancer researcher at NIH. “So a patient with cancer may have bone pain or feel a lump somewhere else. But it doesn’t mean there’s a new primary cancer. It’s most often the original cancer. But it has figured out how to escape and grow in a new place.”

Researchers have been scrutinizing how cancer cells do this. Once cells break away from the original tumor, they can squeeze into blood vessels and travel to other sites. At this point, escaping cells are usually destroyed by the body’s immune system.

But sometimes our own body helps hide or protect the tumor cells. If any cells survive, they can take root in a new location. The cells can form a growing clump that prompts new blood vessels to grow. This blood supply then helps the metastatic tumor to thrive.

Cancer cells have to undergo many changes to survive in a new part of the body. They keep some features of the original tumor cells.

“But we are learning that as cancers become metastatic, they become very different from the primary tumors they started off as,” explains Dr. Karuna Ganesh, a physician scientist at Memorial Sloan Kettering Cancer Center. “Once these cancers spread, they become really hard to treat.”

The treatments used to shrink the original tumor become much less effective in the cancer that spreads. Ganesh and colleagues have been studying the complex changes that occur when cancer cells adapt to new environments. They’ve found that the invading tumor cells can easily turn different genes off and on. This helps them adapt to new places and resist treatment.

“We’ve found that there’s a crosstalk between the tumor cells and the surrounding cells. The cancer cells can reprogram the surrounding cells to support them,” Ganesh says. “By understanding this crosstalk, we can manipulate those interactions to better control the cancer cells.”

Revvng Up Defenses

In recent decades, scientists have uncovered new ways to use the body's own immune system to fight cancer. This is called immunotherapy. One type, called immune checkpoint inhibitors, is now widely used. It can extend the lives of many patients with metastatic cancer.

"Tumor cells are good at hiding from the immune system. They do this by displaying proteins that send the signal: 'Do not attack me,'" explains Dr. Christine Nadeau, an NIH expert on metastasis. "Immune checkpoint inhibitor drugs block those protein signals." This "unmasks" the cancer cells so immune cells can destroy them.

Immune checkpoint inhibitors can treat patients who have metastatic melanoma and some types of kidney, lung, head, and neck cancers. Although these drugs can be effective, they don't work for everyone. And they can have harsh side effects. Researchers are developing artificial intelligence tools to help doctors identify who will most likely benefit from these drugs. That way, patients who won't be helped can receive different treatments.

Another type of immunotherapy is called cell-based therapy. It essentially uses a person's own immune cells as drugs. "Cell therapies involve removing some of the patient's immune cells and then altering them so they can work even better against their cancer," Kaplan says. The enhanced immune cells can be grown in large batches and injected back into the patient's bloodstream.

One type of cell therapy, called CAR T-cell therapy, has been used for years to treat some blood cancers, like leukemia. In early 2024, the U.S. Food and Drug Administration approved the first cell-based therapy for treating a solid tumor. It's used to treat metastatic melanoma. Recent clinical trials at NIH have used other types of cell therapy to treat people who have metastatic cancer of the colon or breast.

"Cell therapy may become a real game-changer for many patients with metastatic cancer," Kaplan says. She is now leading a first-in-human clinical trial to see if another type of immune cell therapy, called GEMys, can keep cancer from spreading.

Coping With Metastatic Cancer

"A diagnosis of metastatic cancer can be overwhelming," Nadeau says. "But treatment options continue to improve. There are reasons to be hopeful."

The goal of treating metastatic cancer is usually to stop or control its growth to extend the person's lifespan. Other treatments are designed to relieve symptoms and improve quality of life. This type of treatment is called palliative care. It can be given at any point during cancer treatment.

"Joining advocacy or support groups for your particular cancer can also help," Nadeau adds. "These groups include people who have been through similar treatments. They understand the challenges."

Recognizing Metastatic Cancers

Symptoms often depend on the size and location of metastatic tumors. Common signs include:

- Pain.
- Fatigue.
- Fractures, when cancer has spread to bone.
- Headache, seizures, or dizziness, when cancer has spread to the brain.
- Shortness of breath, when cancer has spread to the lung.
- Jaundice (yellowish skin or eyes) or swelling in the belly, when cancer has spread to the liver.

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What conditions can be treated?

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Sound Check

Tracking Voice, Speech, and Breathing for Health

(NIH-News in Health) Speaking, singing, and making other sounds require many parts of your body to work together. Your brain thinks of ideas. Your lungs move air in and out. Your vocal cords vibrate. Your mouth and nose help shape sound.

“Our whole body participates in the production of voice, speech, and breathing. So we can get a lot of information about our health from them,” says Dr. Yael Bensoussan, a voice researcher at the University of South Florida.

Many conditions can impact the various body parts involved in sound production. These include depression, Parkinson's disease, dementia, lung problems, and even cancer. Measuring voice, speech, and breathing patterns could help diagnose health problems.

Researchers are testing ways to use apps and other tools to let people measure such information at home. For example, a recent study showed that a computer program could identify patients with Parkinson's disease by their breathing patterns during sleep.

"Voice, speech, and breathing are easy to access, inexpensive, and non-invasive to measure," Bensoussan says. "For example, for a test for lung function, you currently have to go to a hospital and blow into a machine. Then you need someone to analyze that test. Just recording your voice or breathing sounds on your phone would be a lot cheaper and easier."

Speech pattern analysis has shown promise for diagnosing impairments in memory or thinking abilities, and mental health conditions like depression. The way people speak, the tone of voice, and even the words used can all change when someone develops depression, explains Dr. Gari Clifford, a biomedical engineer at Emory University and Georgia Institute of Technology.

Clifford's team is trying to use speech patterns and facial expression changes to catch depression early in people with dementia. They are now testing

their technology in certain tablet and smartphone apps to track changes in people's daily health. This could help doctors see the effects of depression treatments in real time and change them quickly if needed. It could also provide early warning that someone's health is declining.

Other NIH-funded research teams are testing speech analysis to screen for additional mental health problems, like anxiety. They're also looking at speech patterns to help diagnose diseases like amyotrophic lateral sclerosis (ALS) early.

Bensoussan's team is building the world's largest collection of voice and speech samples related to health information. They're including people from a wide range of backgrounds and health conditions. They hope this will aid researchers in building new tools for diagnosis.

Voice and speech analysis tools will eventually have to take people's whole health into account, just like a doctor would, Bensoussan says. "Multiple different diseases can cause the same voice changes. For example, for a hoarse voice, someone with cancer of the throat and someone with laryngitis can sound exactly the same," she explains.

You can't yet talk into your phone and get a full health report. But Bensoussan encourages people to pay attention to changes in their voice and speech. "If you have a voice change for more than two to three weeks, it may indicate an issue with your health," she says.

Pay Attention to Your Voice

Talk with your doctor if you notice changes in your voice, speech, or breath lasting over a few weeks:

- Hoarseness or a raspy quality to your voice.
- Changes in the pitch of your voice (how low or high it is).
- Your throat feeling raw, achy or strained.
- Difficulty talking.
- Repeatedly feeling the need to clear your throat.
- A cough that doesn't go away.
- Problems thinking of the words you want to use or putting words in the right order.



NOTICE OF ANNUAL MEETING OF MEMBERS

The Annual Meeting of the Members of National Wellness & Fitness Association will be held at 12444 Powerscourt Drive, St. Louis, MO 63131, on Wednesday, December 11, 2024 at 6:00 p.m. (CST) for election of Directors and for the transaction of such other business as may properly come before the meeting and any adjournment thereof.

The above notice is given pursuant to the By-Laws of the Association.

PROXY

National Wellness & Fitness Association December 11, 2024 Annual Meeting of Members THIS PROXY IS SOLICITED ON BEHALF OF NATIONAL WELLNESS & FITNESS ASSOCIATION

The undersigned member of National Wellness & Fitness Association does hereby constitute and appoint the President of National Wellness & Fitness Association, the true and lawful attorney(s) of the undersigned with full power of substitution, to appear and act as the proxy or proxies of the undersigned at the Annual Meeting of the Members of National Wellness & Fitness Association and at any and all adjournments thereof, and to vote for and in the name, place and stead of the undersigned, as fully as the undersigned might or could do if personally present, as set forth below:

1. FOR [], or to [] WITHHOLD AUTHORITY to vote for, the following nominees for Board of Directors:
Ryan Kerner, Mike Lorenz and Adam Ansberry
2. In their discretion, the proxies are authorized to vote upon such other business as may properly come before the Meeting.

This proxy, when properly executed, will be voted in the manner directed by the undersigned member. If no direction is made, this proxy will be voted for the election of directors and officers.

DATED: _____, 2024

Signature _____

Name (please print) _____

Please date and sign and return promptly to 12444 Powerscourt Drive, St. Louis, MO 63131 whether or not you expect to attend this meeting. The Proxy is revocable and will not affect your right to vote in person in the event that you attend the meeting.

St. Louis, Missouri
November 4, 2024
Date

National Wellness & Fitness Association

A Healthier You is published by:
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For information regarding your membership
and association services, call or write:

**Membership Services Office
National Wellness & Fitness Association
12444 Powerscourt Drive
Suite 500A
St. Louis, MO 63131**

1-800-992-8044 or (636) 530-7200

Benefits may not be available in all membership levels.
For more information, or to upgrade your membership, please call 1-800-992-8044