

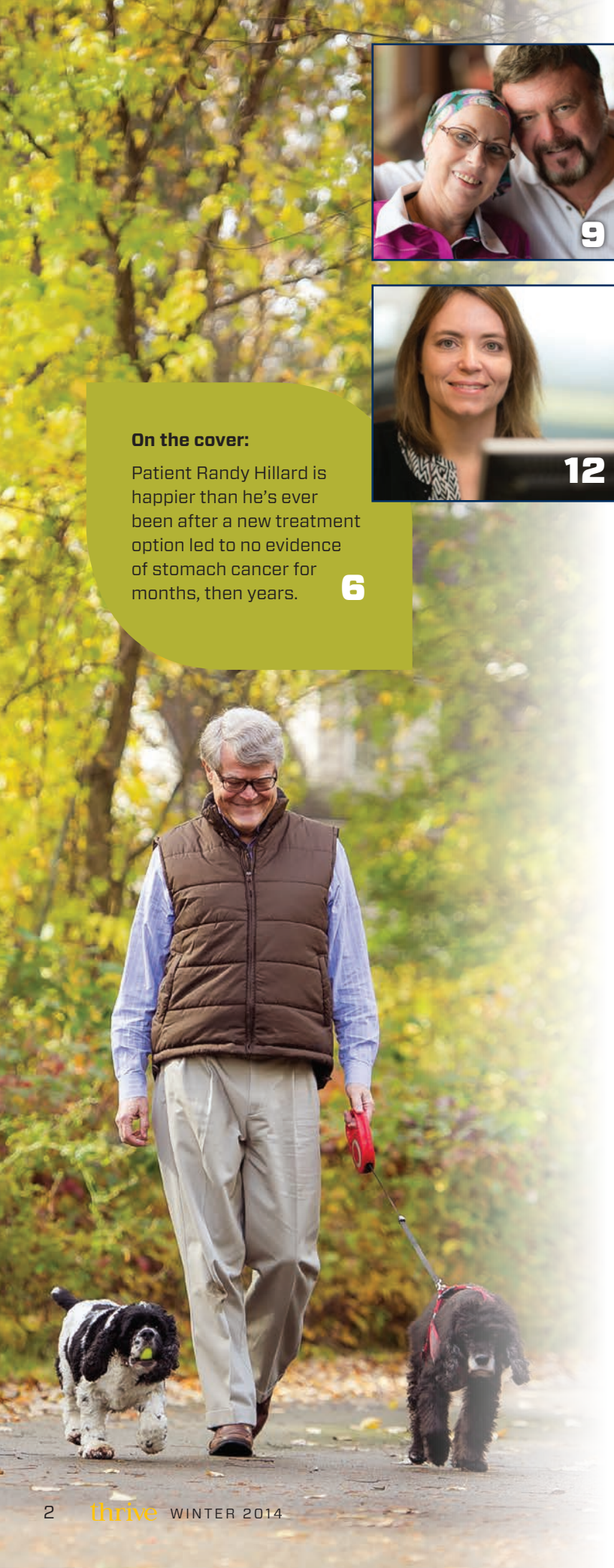
thrive

Finding Hope in Hopelessness

When advances in
care give patients new
treatment options



**COMPREHENSIVE
CANCER CENTER**
UNIVERSITY OF MICHIGAN
HEALTH SYSTEM



On the cover:

Patient Randy Hillard is happier than he's ever been after a new treatment option led to no evidence of stomach cancer for months, then years.

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For more information about the stories in Thrive or any other cancer-related information, please call the Cancer AnswerLine at 800-865-1125.

What does health care reform mean for our patients?

A new era in American health care has arrived: a time when everyone can get affordable health insurance coverage, no matter what your health history. Your cancer diagnosis cannot prevent you from getting insurance and, in fact, you might even have options to think about that cost less.

The Affordable Care Act, sometimes called “Obamacare,” takes full effect in 2014, does an expansion of Michigan’s Medicaid program.

Here’s a summary of what these changes may mean for you:

- If you have health insurance through your job, or you’re covered on someone else’s plan such as a spouse or parent, you don’t have to make any changes. However, if that coverage changes or goes away, you will be able to find affordable insurance coverage that will accept someone with a history of cancer—or someone who is undergoing cancer treatment.
- If you have Medicare or Medicaid, you don’t have to do anything different.
- If you buy insurance for yourself, your family or your small business, you may want to look at the new plans available under the Affordable Care Act, or see if you qualify for subsidies and tax credits to help pay for them.
- If you buy a COBRA plan from a previous employer, you can probably find a lower-cost plan on the individual marketplace, and you may be eligible for subsidies or expanded Medicaid.
- If you receive charity or discounted care through the U-M Health System’s M-Support program, you must now apply to see if you are eligible for expanded Medicaid or for an affordable individual or family plan on the Marketplace. M-Support will now be limited to those who do not qualify for either.
- If you don’t have health insurance, or any of your loved ones don’t, the new plans and expanded Medicaid offer new options. You will need to have coverage soon in order to meet federal requirements and avoid a tax penalty.

Visit www.healthcare.gov to explore the individual Marketplace or the SHOP marketplace for small businesses.

Important note: Make sure that the specific plan you choose will allow you to receive care from your usual doctors, hospitals and other locations. Visit www.uofmhealth.org/ACAPlans for the list of plans accepted at the U-M Comprehensive Cancer Center and other U-M Health System sites.



Call the U-M Health System’s Patient Financial Counselors at **877-326-9155** between 9 a.m. and 8 p.m. Monday-Friday, or email them at PFC-Counselors@med.umich.edu. This service is free and open to anyone, not just U-M patients.



More on the web: uofmhealth.org/newoptions

Photo: Karen Patker Moeller

Q&A

Getting Back to Your

How physical therapy and occupational therapy during and after cancer treatment can help recovery



Kathy Konosky,
OTR/L, MS, CLT-LANA
occupational therapy clinical specialist



Ron Sayre, PT, MSA
*supervisor of the Outpatient Physical
Therapy Team at University Hospital*

When you're diagnosed with cancer, everyone's first priority is doing what they can to get rid of it. You may need surgery. Your oncologist might prescribe chemotherapy or radiation. These things can take a toll on your body, even when the cancer is gone. Whether you're in treatment or done with treatment, what can you do to feel more like your old self?

We spoke to Kathy Konosky and Ron Sayre from the Department of Physical Medicine and Rehabilitation, who perform both occupational therapy and physical therapy in patients with cancer. They discuss the many ways OT and PT can help patients recover from symptoms and side effects of their diseases and treatments. You might be surprised by just how much they can help you accomplish.

Q. Can you define for Thrive readers what physical therapy and occupational therapy are?

Physical therapy aims to maintain, restore and improve movement, activity and health to allow a person to have the best functioning and quality of life. PTs evaluate, diagnose and manage patients who have impairments, activity limitations and restrictions. They promote health, wellness and fitness to reduce risk, slow or stop the progression of functional decline and disability, and enhance a person's quality of life so they can participate in chosen life situations.

Occupational therapy helps people get back to their everyday life activities with the goal to function as well as possible at home, school, work and the community. OTs can evaluate and treat the physical, cognitive, psychosocial, sensory-perceptual and other aspects of a person's performance. The goal is to support and improve engagement or involvement in occupations or activities that affect physical and mental health, well-being and quality of life.

Q. Since there seems to be some overlap, can you help us understand the differences?

Here's an example: A leukemia patient has lymphedema, or chronic swelling, due to radiation treatment she had years ago combined with medication she takes now. She goes to occupational therapy for her lymphedema, which includes treatments like skin care, lymphatic drainage through massage, compression and stretching. The OT also teaches her ways to manage symptoms at home.

The same patient sees a physical therapist because she has graft vs. host disease with symptoms off and on. This leaves her weak and fatigued, especially after a hospital stay. Her PT helps with building strength, primarily of her lower extremities, and developing more endurance. As a result, she has the energy for more day-to-day activities.

Q. When might a cancer patient be prescribed physical therapy and occupational therapy?

We receive a lot of referrals from the Cancer Center. We can help patients deal with anything that isn't the same as before their illness. Patients often feel like they don't want to complain about things like limited arm movement or a sore back when they have a much bigger battle to wage with their cancer. But we can help address those ongoing symptoms they're dealing with every day and help make daily life better.



Email the Transitions Studio about a free 30-minute consultation at pmr-transitions@med.umich.edu.

Life as Usual

Q. How does a cancer patient know when he or she needs physical therapy or occupational therapy?

The most important thing is to be honest with your primary doctor and oncologist about the symptoms you're experiencing. It is not complaining. Just because an issue might not be the biggest issue you're facing doesn't mean it can't be helped or corrected.

Symptoms a patient may have range from being too tired to function, to specific pain in the body to limited mobility. Patients might experience weakness, problems with coordination, lymphedema or problems with posture resulting from treatment.

Q. What kinds of side effects, specifically, do you improve upon for cancer patients?

There are all sorts of things. Cancer and cancer treatment are hard on a person's body. Lymphedema, for example, is a big issue in cancer patients and the buildup of fluid in a leg can affect things like joint mobility and balance. Scar tissue from surgery sometimes forms and causes pain or reduced movement. Nerve problems from treatments can cause weakness and numbness or tingling in your hands, making it difficult to perform daily tasks.

Then there's the problem of fatigue that affects so many patients with cancer. It can be chronic, which can cause functional problems that cascade into a lot of areas of a person's life. PTs and OTs get at the root of the problems and help patients overcome them.

Q. What can physical therapists and occupational therapists do for patients?

We help patients have more energy, better mobility and less pain. There is also psychosocial recovery in cancer, meaning PTs and OTs can assure patients that their symptoms are normal and can be improved or alleviated. We help patients become fitter and healthier. We're always thinking about how we can incorporate helpful, functional activities in a way they can do as easily as possible.

PTs and OTs want patients to be fully functional. We can educate patients on ways to help them lower the risk of certain problems coming back. For example, lymphedema is a chronic condition that puts people at a higher risk for developing infections. In addition to alleviating the swelling, we can teach people "risk reduction principles," including diet, skin care, stretching and deep breathing. We teach them self-management so they know what to do if symptoms arise in the future.

Q. What about patients who are done with treatment and want to feel better?

A: One great intervention we have to offer is personal training specifically for cancer survivors at our Transitions Studio in Ann Arbor. This is part of the University of Michigan's Department of Physical Medicine and Rehabilitation. Physical inactivity can lead to many disabling health issues. People want to feel better after cancer, not worse. Our certified trainers can help you develop a program that meets your goals and lifestyle.

“Pain is an indicator that something is wrong. We have to figure out how to get people back to daily living.”

—Kathy Konosky, occupational therapy clinical specialist

Ask your doctor whether physical therapy or occupational therapy is right for you based on your symptoms from cancer or treatment.

Finding HOPE

TO TREAT OR NOT TO TREAT?

When Randy Hillard was diagnosed with stomach cancer in 2010 at age 59, he researched everything he could find about the disease. As a professor of psychiatry at Michigan State University, his status as a physician gave him access to the most current and up-to-date information.

“I read everything I could. Each thing made me more depressed than the previous one,” Hillard says.

Hillard underwent surgery by Diane Simeone, M.D., at the University of Michigan Comprehensive Cancer Center, to remove the majority of his stomach, gallbladder and many lymph nodes. A small metastatic lesion was also found.

He seriously considered not having further treatment and letting the disease run its course.

“As a physician with knowledge of medicine and oncology, Dr. Hillard was quite pessimistic about his future prior to, and at our initial visit,” says Mark Zalupski, M.D., a medical oncologist within the gastrointestinal tumor program at the Cancer Center. “We discussed the relatively poor prognosis associated with advanced gastric cancer at that time.”

“This pond gives me hope and inspiration,” says patient Randy Hillard. “I plan to see it again next fall.”

HOPE COMES ALIVE

Then the landscape of cancer treatment changed as a result of ongoing research and clinical trials. Right around the time of Hillard’s diagnosis, a drug called trastuzumab was being studied in a phase III trial. The patients in the trial had advanced gastric cancer like Hillard. They also had a protein in their cancer called HER2, which is present in fewer than 20 percent of gastric cancers. The trial studied whether chemotherapy combined with trastuzumab was a more effective way to treat these patients than chemotherapy alone.

It was. Trastuzumab had been used for a decade to treat breast cancer, but now was approved by the U.S. Food and Drug Administration to treat gastric cancer when HER2 was present. Hillard had advanced gastric cancer and testing showed his cancer had the HER2 protein. Not only did he qualify to take the drug, his insurance covered the costs.

“At that time, I decided that if I wasn’t in hospice care a year from now, I’d become a hospice doctor,” Hillard said. “I’ve always been interested in end-of-life care. I also decided to start support groups

for people with stomach cancer.”

Following recovery from surgery, a treatment plan was developed to include months of trastuzumab, aggressive chemotherapy and radiation.

Hillard describes his time during his initial treatment as difficult. He had many side effects, especially from radiation, and took nine months off from his job as associate provost for human health at Michigan State. Since January 2013, he has continued receiving infusions of trastuzumab every three weeks.

(continued on next spread)

in Hopelessness

When advances in care give patients new faith

One Cancer Center patient's story of treatment success when advances in care led to a new option for patients with metastatic stomach cancer



Randy Hillard



The drug trastuzumab is sold under the brand name Herceptin.

Groups Randy Hillard has founded to fight stomach cancer and support patients and families:

- Stomach Cancer Warriors and Caregiver Family support group on Facebook
- East Michigan chapter of Debbie's Dream Foundation: Curing Stomach Cancer
- Campus Cancer Champions, a collaboration between the American Cancer Society and Michigan State University

Visit mCancer.org/thrive for links.

“There were difficulties along the way, but his efforts have translated into a full recovery and an active and productive life,” says Zalupski. “To this point, he has not had obvious progression or presence of the cancer over the past 34 months.”


MOVING FORWARD

As promised, Hillard now volunteers with hospice care in Lansing. To become an official hospice doctor, he plans to take his board certification exam this year. Additionally, he is the administrator for the Stomach Cancer Warriors and Caregiver Family support group on Facebook. Many people don't live near cancer centers like the University of Michigan, so the forum allows people to ask questions of other members on the group.

“Our general ethos is never give up,” Hillard says. “Just within the last month, the ‘C-word’ for me is that maybe I'm cured. My scan at the end of September showed no evidence of disease and my lab tests are good. I feel perfectly well. It gives people in the group hope.”

Until research provides more information, Hillard will continue to receive infusions of trastuzumab. His side effects are limited to minor peripheral neuropathy and “chemo brain,” which leaves patients feeling less able to concentrate and multitask.

To rebuild his strength, Hillard walks his pair of cocker spaniels around his Williamston neighborhood. He returned to work at Michigan State in the fall of 2011 and has a new outlook on life. Describing himself as “taking things way too seriously” before his cancer diagnosis, he now feels happier than he's ever been. He travels with his wife, Aingeal, and even went scuba diving in Curacao last summer with his chemo port in place.

He also takes great pride in his collection of Chinese ceramics, a hobby that began in the late 1980s when he attended the first Chinese/American psychiatric association meeting in Beijing. 

Better Cancer Treatment Starts With You

Doctors at the Cancer Center are working hard to find cures, but they can't do it alone. Patients play a vital role in finding better ways to treat cancer by participating in research studies, also known as clinical trials.

Call **800-865-1125**
to see whether a clinical trial
is right for you.

Facing the Unknown

Making the Most of Cancer's Uncertainties

AN UNEXPECTED DIAGNOSIS

Laura Fliss was busy living, working and spending time with her family before noticing a backache and some mild chest pain last spring. At 63, the married mother of two grown children runs a hair salon and day spa in Dearborn Heights, a job she's loved since it opened in 1984. She's a member of the Polish National Alliance, performing in its dance group for years.

When back spasms interrupted a summer trip with her granddaughter, Fliss returned home to receive a rare and serious diagnosis: cancer of unknown primary, also called CUP. What makes CUP unique is that it is advanced to the point where its genetic characteristics are lost, making it impossible to identify where the cancer started. For this reason, it is almost always metastatic and difficult to treat.

"My family rallied and was with me during summer vacation," Fliss says. "Of course I was scared, but they gave me the encouragement to fight and keep hope. If there's not a cure, I'll have some time and make the most of it."

SPRINGING INTO ACTION

Fliss immediately began treatment under the care of Alex Pearson, M.D., Ph.D., who alongside Laurence Baker, D.O., started a clinic at the University of Michigan Comprehensive Cancer Center for patients diagnosed with CUP.

"Laura is a great example of someone who has been utilizing the benefits of her chemotherapy regimen to the most extent," Pearson says. "She's taking day trips, spending time with her family, fundraising and working."

Pearson explains the goal for treatment of CUP today is not to cure, but to reduce a patient's symptoms so life can go on and patients can continue to accomplish their goals. Chemotherapy with milder side effects has been used in her case to allow her to keep working as much as possible.

Laura Fliss with her husband, daughters and granddaughter.



BUSY LIVING

Fliss made the decision early on to stay positive for the sake of her family. Though her treatment success is hard to predict, she has turned to her faith for help.

“I always knew I wanted to become a Catholic, especially when I got involved with the Polish National Alliance,” Fliss says. “I thought about being confirmed in the 1980’s when the pope was here. I never did it because I was always busy and working extra hours.”

Fliss finally achieved that goal in September when she was confirmed into the Catholic faith in a private mass for her and her grandson Avery.

“I feel great,” she says. “I feel blessed. It was something I should have done a long time ago.”

Social Worker Donna Murphy, LMSW, CCLS, from the Cancer Center’s PsychOncology Clinic says it’s important for patients to continue to find their life’s meaning when facing uncertainty.

“One thing that’s really hard about cancer is that it puts people into a place where they’re forced to deal with the unknown in a way most people never know. No cancer is ever the same. You’re beginning an uncharted journey,” says Murphy.

Fliss decided to become actively involved in the Cancer Center’s new CUP clinic by joining a clinical trial and allowing her biopsy results to be analyzed for factors like genetic changes, what proteins are being expressed and what pathways are involved in her cancer. Understanding the genome may help researchers find better treatments for not just cancers, but also other genetic-related diseases.

“I want to do what I can to help,” Fliss says. “If not myself, I’d like to help other people who are diagnosed with CUP in the future. It makes me feel like I’m taking some kind of action.”



Laura Fliss's friends and family gathered last fall for a charity golf outing.



LOOKING TO THE FUTURE

With the support of her husband, John, her children and grandchildren, Fliss plans to continue her treatment regimen, continue working and spend as much time with loved ones as possible.

The family held a golf outing to raise funds for her treatment costs. Fliss's daughters are in the process of developing a non-profit organization and website to raise money and awareness for CUP research.

"The most positive thing is my family and friends," Fliss says. "Not a day goes by when I don't receive a card in the mail giving me hope. You don't realize how many friends you have until something like this happens." **t**



Visit mcancer.org/thrive to learn more about how to donate to the Cancer Center.



Call **800-865-1125** for details on the new clinic for cancer of unknown primary or to ask whether you might qualify for a clinical trial.

The CUP clinic aims to bring patients together to leverage their experiences and information in an effort to improve treatment options.

"We don't know enough about what pathways are involved in many cancers. We want to learn what genetic signals are being turned on and off. We believe there may be information that differentiates certain types of cancer. As we gain more information from patients, decision points based on genetic studies will allow us to provide more targeted treatment options."

—Alex Pearson, M.D., Ph.D

The hope is to take cancers with a poor prognosis, like CUP, and give patients like Fliss more and better treatments.





Perking

The Cancer Center's Patient Educ

Cancer is overwhelming enough without having to worry about getting bad information.

Finding the right information can be tough, especially when it comes to something like researching cancer. A trip to the local library can lead you to books written years ago, before certain advances were made in cancer care. The Internet can be even worse, with an overload of information that may or may not be coming from a reliable source.

Your best bet? The Cancer Center's Patient Education Resource Center gives patients easy access to our complete library of all things cancer. And now, thanks to a major renovation, the PERC has a new and improved location and more up-to-date information than ever. Conveniently located on level B2 of the Cancer Center, next to blood draw, the PERC is open Monday through Friday, from 9 a.m. to 5 p.m., to all patients and family members.

"People come to the PERC in search of all types of information," says librarian Amy Schroer, MILS. "We have disease-specific resources, brochures to help understand treatments like chemotherapy and radiation, nutrition information and more."

Ann Marie Scholten was just 20 years old when she was diagnosed with sarcoma in 2005 and her mother took the lead on researching her illness. She remembers the two of them finding pamphlets about side effects at the old PERC location, which was limited to a small room with no windows.


"Walking into the new location, you can see how much more information there is," she says. "It would have been helpful to see all the information on side effects, which were a big problem for me. Just being able to find information on losing your hair would have been great. It was a tough time."

Scholten visited the new PERC while at the Cancer Center for a checkup with Rashmi Chugh, M.D., since she had some time between blood draw and her appointment. A college student at the time of her diagnosis, she is now a married mother of three and works in fundraising at Michigan State University.

"It can be intimidating for patients to find information," says Mandy Higgins, a staff volunteer at the PERC. "All of our information has been vetted by the librarians or the University. You're not going to get inaccurate stuff. Using the PERC can be more reliable than doing research on your own."

Patients needing a detailed search on a rare cancer or topic can tap the PERC staff to do the legwork. They have access to academic journals, as well as other less-common, but also authoritative sources. PERC staff will mail the research to a patient when it's ready.

One new addition to the PERC is a collection of human anatomy models to help patients understand the inner workings of our organs and their locations in the body. There are now four computer workstations instead of one, as well as a printer and copy machine for patient use.

"Patients can check out books and we'll provide a postage-paid envelope so they can send it back to us no matter when their next appointment takes place," says Schroer. "We have 270 brochures for people to take and are adding more all the time." 



PERC Librarian Amy Schroer, MILS, and Lori Boylan, information resource assistant

Up the PERC

Information Resource Center gets a new and improved home



Don't forget about the iPad Program at the PERC, where patients can borrow equipment for their day at the Cancer Center. We have headphones, too.



Visit the PERC on B2 of the Cancer Center, next to blood draw. Learn more at mCancer.org/perc.

For more information and tips for each category, check out thrive online! mCancer.org/thrive

& STARTS STOPS FOR 2014

BY NANCY BURKE, R.D., DANIELLE KARSIES, M.S., R.D., AND MELISSA SHANNON-HAGEN, R.D., CSO
U-M COMPREHENSIVE CANCER CENTER SYMPTOM MANAGEMENT AND SUPPORTIVE CARE PROGRAM

It's 2014! Why not start the year with lifestyle changes to improve your health during and after cancer treatment? To keep it simple, we created a list: 5 habits to start and 4 to stop. Taking one change at a time will improve your odds for success. Give yourself a month for each goal to allow it to become a habit before trying the next on the list.

Many of these changes are strategies to achieve and maintain a healthy weight, probably the most important goal for preventing cancer or recurrence.

What to START

1. Eating a healthy breakfast

Studies have shown this improves concentration and performance, decreases fatigue and helps with weight management. If weight loss is your goal, include lean protein to help you feel full until lunch.

2. Making half your plate fruits and vegetables

Try to include a serving or more of fruits and/or vegetables with each meal and snack.



3. Watching portion sizes

Get to know the recommended serving size of your favorite foods by reading the nutrition facts label. Make a pact with yourself to eat only 1-2 servings of a food at a time.

4. Drinking more water

The Dietary Reference Intake for water is 9 cups for women and 13 cups for men each day. Carry a water bottle with you and drink 1 cup of water before each meal.

5. Being Active

Physical activity can be as simple as walking for 30 minutes most days and avoiding long periods (more than 2 hours) of sedentary behavior.

What to STOP

1. Skipping meals

Research has shown that eating regularly throughout the day, about every four hours, can help with weight loss and improve mood, concentration and performance.

2. Eating out

Cook at home instead. If you do eat out, split the entrée with a friend or bring half home for leftovers. Eat a salad or side of vegetables with the reduced portion.

3. Focusing on a single food

There is no magic food that will meet all of your body's needs or be the single cause for disease. Eat a wide variety of foods to get the nutrients your body needs and protect it from cancer and other diseases.

4. Drinking too much alcohol

Remember the 1-2 rule: limit your alcohol consumption to 1 drink for women, 2 drinks for men daily (1 oz liquor, 12 oz beer, 4 oz wine).



To make an appointment for nutritional counseling, call **877-907-0859**.

Liquid biopsy could improve cancer diagnosis and treatment

A microfluidic chip developed at the University of Michigan is among the best at capturing elusive circulating tumor cells from blood—and it can support the cells' growth for further analysis.

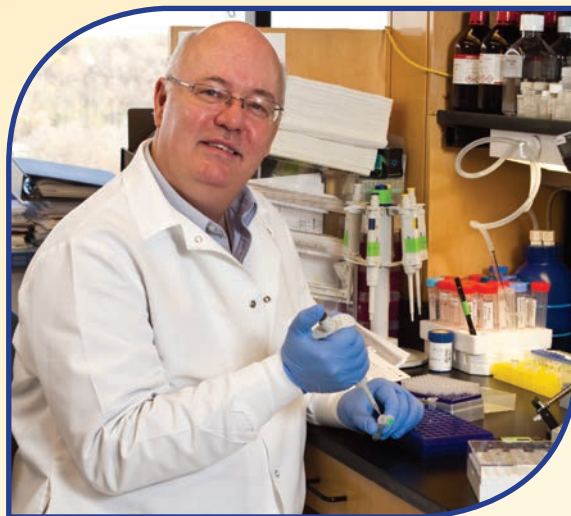
The device, believed to be the first to pair these functions, uses the advanced electronics material graphene oxide. In clinics, such a device could one day help doctors diagnose cancers, give more accurate prognoses and test treatment options on cultured cells without subjecting patients to traditional invasive biopsies.

"If we can get these technologies to work, it will advance new cancer drugs and revolutionize the treatment of cancer patients," said Max Wicha, M.D., Distinguished Professor of Oncology and director of the U-M Comprehensive Cancer Center and co-author of a paper on the new device, published in *Nature Nanotechnology*.

"Circulating tumor cells will play a significant role in the early diagnosis of cancer and help us understand if treatments are working in our cancer patients by serving as a 'liquid' biopsy to assess treatment responses in real time," said co-author Diane Simeone, M.D., the Lazar J. Greenfield Professor of Surgery at the U-M Medical School and director of the Translational Oncology Program.

"Studies of circulating tumor cells will also help us understand the basic biologic mechanisms by which cancer cells metastasize or spread to distant organs," Simeone adds.

The findings described here represent early laboratory research. More studies are needed before clinical trials with patients begin.



Dan Robinson, Ph.D.

Mutations linked to breast cancer treatment resistance

Researchers at the University of Michigan Comprehensive Cancer Center have identified a type of mutation that develops after breast cancer patients take anti-estrogen therapies. The mutations explain one reason why patients often become resistant to this therapy.

The discovery stems from a program at the U-M Comprehensive Cancer Center called Mi-ONCOSEQ in which patients with advanced cancer have their DNA and RNA sequenced to identify all types of genetic mutations that could play a role in the cancer. Researchers use the findings to help direct therapies they think will work best. But they also use the data to find new genetic links.

In this case, they looked at 11 patients with metastatic breast cancer that was classified as estrogen receptor positive, meaning the cancer is influenced by the hormone estrogen. This is the most common type of breast cancer.

The analysis found that six patients had mutations in the estrogen receptor. All of them had been treated with an aromatase inhibitor, a type of drug that blocks estrogen production.

What's more, the researchers found that the mutations were not present before the patients started their treatment, which means it was the therapy itself that caused the mutations to develop or be selected. The study was published in *Nature Genetics*.

"This is the tumor's way of evading hormonal therapy. These mutations activate the estrogen receptor when there is no estrogen—as is the case when a patient takes an aromatase inhibitor. It's essentially an on-switch for the estrogen receptor," says lead study author, Dan Robinson, Ph.D., research assistant professor of pathology at the U-M Medical School.

This on-switch essentially sidesteps the effects of the aromatase inhibitor, preventing estrogen receptor signaling from being shut down. That's when patients become resistant to the therapy, which leaves them with few other treatment options.

Now, we can look at how these estrogen receptors function and begin to develop drugs to shut down or attack this mutation," says study co-author Anne F. Schott, M.D., associate professor of internal medicine at the U-M Medical School.

PHARMACIST'S Corner



Do you have a question for the pharmacist? Email us at ThriveMagazine@med.umich.edu

PREPARING YOUR IV CHEMOTHERAPY

By Kelly Wright, R.Ph., M.S.,
U-M Comprehensive Cancer Center Symptom Management
and Supportive Care Program

It might seem like a lot of waiting when you come to the Cancer Center for infusion, but there is good reason. Pharmacists and technicians have important roles in preparing each dose of chemotherapy, making your safety our top priority.

Everything starts when the pharmacy receives your order, which may be written ahead of time or on the same day after you see your physician. Pharmacists prevent medication errors, advise physicians on drug choices and make sure you understand your medication.

Before your chemotherapy is mixed:

- The pharmacist checks your height, weight and laboratory values to ensure that it is safe to proceed with treatment
- A technician gathers all supplies needed to prepare each dose
- A second technician mixes each item one at a time
- A pharmacist checks the technician's work

Pharmacy technicians are experts at mixing techniques. They follow strict rules for preparing your dose in a germ-free area, exactly as ordered.

Pharmacists take additional measures to verify your order:

- It is checked to be sure it is the right medication in the right dose, given through the right route in the right amount of time
- The medications are checked for potential drug interactions

The infusion pharmacy at the Cancer Center mixes between 150-300 doses of medication a day. We invite you to visit the Patient Education Resource Center on B2 to grab some reading materials or borrow an iPad tablet while you wait.



Just a Phone Call Away

Art Therapy
877-907-0859

Cancer AnswerLine
800-865-1125

Clinical Trials
800-865-1125

Fertility Counseling
877-907-0859

Financial Counseling
734-647-5120

Guided Imagery
877-326-9155

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734-998-6893

Music Therapy
877-907-0859

Nutrition Services
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Patient Education Resource Center
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Practical Assistance Center
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PsychOncology
877-907-0859

Social Work
800-888-9825

Skills Lab
877-907-0859

Smoking Cessation Counseling
734-998-6222

Symptom Management and
Supportive Care
877-907-0859



THRIVE ONLINE

mCancer.org/thrive

Thrive doesn't end here! Visit mCancer.org/thrive for more. Here's what you'll find:

- More tips and lifestyle challenges for a healthy 2014
- Information on health insurance plans accepted by the University of Michigan Health System, including the Cancer Center
- Links to learn more about the diagnosis of cancer of unknown primary
- Details on how to borrow an iPad tablet during your day at the Cancer Center
- Support resources for patients with stomach cancer
- Cancer-friendly recipes and other nutrition tips
- Details on how to search for clinical trials that could help you become the future of cancer treatment