

Cancer Answers

What exactly is cancer? What factors play a role in causing it? Two Baylor patients opt for genetic testing to help them make crucial decisions about their health

We hear the word—“cancer”—all the time. But what does it mean, really? Even the word itself is a bit misleading—there’s not just one type of cancer. “Cancer” refers to a lot of different diseases, but they share some traits: cancerous cells divide abnormally, and they are able to destroy normal body tissue and to spread to other parts of the body.

Cancer generally stems from damage to the cells’ DNA—long molecules that carry genetic information. Normal cells can develop changes in their DNA, but usually the cells are able to repair those changes. When they lose that ability to repair themselves they can grow uncontrollably or live beyond their normal lifespan. That’s when problems can start.

While treatments vary depending on the type of cancer, the parts of the body affected and the person being treated, doctors frequently use several tactics to thwart cancer. Vikas Aurora, M.D., a medical oncologist at Baylor Regional Medical Center at Grapevine, outlines the most common methods:

Surgery removes the cancerous cells and a slim margin of healthy cells around them.

Chemotherapy hinders the ability of rapidly dividing cancer cells to divide.

Radiation damages DNA in a specific area of the body, targeting cancerous locations.

Targeted therapies, a new class of drugs, block the growth of cancer cells by interfering with the pathways they use to communicate.

“Many cancers can be successfully treated if diagnosed early,” explains Lynn Canavan, M.D., a breast surgeon on the medical staff at Baylor Regional Medical Center at Plano. “That’s why regular mammograms, colonoscopies, gynecological exams and prostate screenings are so important.”

HOW DOES CANCER START?

Most of the time, cancers stem from environmental triggers (such as tobacco smoke), viruses or unknown causes. Sometimes—in 7 to 10 percent of cases—genes can put people at increased risk. That’s when genetic testing can help. Genetic testing can show people if they are at increased risk for breast, ovarian or other cancers. But the tests aren’t for everybody. Because genetic causes of cancer are less likely, the tests are appropriate for people with specific risk factors. (See “Breaking Down BRCA” on page 5.)

The test itself requires a simple blood draw. The blood is sent to an outside lab, with results back in about two to three weeks.

“If the BRCA1/2 test is positive, people can be proactive in their health care,” explains Estelle Brothers, R.N., a Baylor genetics nurse.

For women who have a new diagnosis of breast

Genetic testing helped Nacia Dexter make decisions about her health.

Need Cancer Answers?

If you’re wondering about your risk for developing certain types of cancer, don’t go it alone. For a referral to an oncologist on the medical staff at Baylor, call **1-800-4BAYLOR** or visit **BaylorHealth.com**. You also can choose Cancer Care from the list of Specialties and Services at **BaylorHealth.com** to find out more.



BREAKING DOWN BRCA

Baylor offers genetic counseling and testing for BRCA1/BRCA2, the gene mutations linked to high risk of breast and ovarian cancer. If you test positive for BRCA1/BRCA2, your lifetime risk of breast and ovarian cancer is significantly higher than the general population.

Genetic testing for BRCA1/BRCA2 should be considered if you or your close relative has had breast cancer prior to age 50, ovarian cancer at any age, a family history of a male with breast cancer, Ashkenazi (Eastern European) Jewish heritage, or bilateral breast cancer.

cancer and are found to have inherited a BRCA1/2 gene mutation, the woman can use this information to work with her surgeon in planning optimal surgery for best risk reduction, bilateral mastectomies, as opposed to breast conservation (lumpectomy and radiation therapy). Women who choose not to have bilateral mastectomies, can embark on intensive surveillance with mammograms and breast MRIs so that if breast cancer subsequently develops, it can hopefully be identified early before it has spread. Removal of the ovaries and fallopian tubes also substantially lowers the risk of developing ovarian cancer by 96 percent in women with a BRCA1/2 gene mutation and also reduces the risk of developing breast cancer in young women.

The genetic counseling program at Baylor has been in place for more than 10 years. “Our genetic counselor is able to expertly explain these complex issues for patients so they can make the best choices for themselves,” says Joanne L. Blum, M.D., Ph.D., director, Hereditary Cancer Risk Program at the Baylor-Sammons Cancer Center.

INFORMATION IS POWER

Shirley Carpin’s mother was diagnosed with breast cancer 18 years ago and survived. When genetic testing became available, her mom got tested—and found out she carried a genetic mutation that caused her cancer. Armed with this new knowledge about her family history Shirley, 45, was tested, and she too carried the mutation, meaning it was likely she would develop breast cancer herself.

“I made the decision I was going to be a survivor. I have three boys and a husband. I can’t leave my children without a mom,” the Frisco resident says. Though she doesn’t have breast cancer, the genes show she has a 54 to 87 percent chance of developing the disease. She had her ovaries removed and is in the process of having her breasts removed, reducing her risk by about 95 percent.

It’s important to know that family history doesn’t guarantee a positive genetic test, or a cancer diagnosis. Shirley’s mom and one sister both tested positive, and both developed breast cancer, Shirley tested positive for the gene but shows no signs of cancer so far, and another sister tested negative for the gene.

Necia Dexter, 48, of Plano, was diagnosed with breast cancer in 2007, and the cancer had spread to her lymph nodes. After her treatment, she decided to get genetic testing, and tested positive. “After that, I made arrangements to remove my other breast, ovaries and cervix,” she says.

Her 19-year-old daughter also tested positive for the mutation, and knows that her risk affects her family planning decisions. Her 17-year-old daughter can be tested when she turns 18. “The diagnosis of cancer is a life-changing event,” Brothers says. “Knowing if you have a BRCA mutation, at a young age, enables you to make informed choices for your future.” But with knowledge comes the opportunity to reduce risk and potentially stay a step ahead of cancer. *By Stephanie Thurrott*

Stress can affect your stomach, skin and even your sex drive. Don't let it get the best of you

Lisa Baker learned to conquer stress with help from Baylor.

A Mess of Stress

Lisa Baker, 44, of Garland, had been a stay-at-home mom for 13 years, caring for her now 12-year-old daughter and 5-year-old son. But when the flailing economy took its toll on the six furniture stores her husband owned, she went back to school and became certified as a reading teacher.

"I got a job at the first interview I went on," she says. But adding a 40-hour workweek on top of the busy life she already lived brought with it stress—and health challenges.

"After the first couple of weeks I didn't feel right. I would wake up with palpitations in my chest and I could hear my heart beat in my ears. I was feeling tired and panicky," she says.

A visit to her doctor showed that stress was affecting her health in a number of ways. For one, her blood pressure was high enough to warrant medication. Her doctor also recommended yoga, and felt that once Baker settled in to her new routine her stress levels would decline.

Jane S. Sadler, M.D., a family medicine physician on the medical staff at Baylor Medical Center at Garland, says, "A lot of people come in complaining of physical symptoms—neck pain, headaches—and I find out they are under a lot of stress."

Some common symptoms of stress are headaches, sleep disorders, difficulty concentrating, short temper, upset stomach, skin problems such as hives, job dissatisfaction, reduced sexual desire, low morale, depression and anxiety, says Armando Yepes, M.D., an interventional cardiologist on the medical staff at Baylor Medical Center at Irving.

For most patients, Dr. Sadler recommends:

- counseling
- yoga, stretching exercises
- walking and other types of exercise
- seven to eight hours of sleep a night
- healthy eating. "I tell them to avoid fast food and avoid eating on the run because of a stressful situation," she says. "Stress increases cortisone levels, which makes it more likely that people will gain weight."
- a four-ounce glass of wine in the evening, as long as it doesn't interfere with sleep
- an antidepressant, if warranted

The key is to recognize when stress is affecting your health, and then take steps to help counteract it. *By Stephanie Thurrott*

Relax, Baylor Is Here for You

With the tax deadline looming and financial woes causing constant worry, it's easy to let stress get the best of you. For tips on coping with stress, visit BaylorHealth.com and type "stress management" into the search engine.

Age-Defying Action



If you want to stay young at heart and keep a spring in your step, don't stop moving. Just do it right

Getting older doesn't mean you have to sit on the sidelines watching everybody else have all the fun. You may not be up for a 10K run or a rough game of soccer anymore, but you can still find activities suited to the realities of your aging body.

Just ask Jeffrey B. Klein, M.D., an orthopaedic surgeon on the medical staff at Baylor Medical Center at Garland. He's 58 years

old and was still playing basketball and running regularly when he injured his knee. After having knee surgery in 2008, he knew he shouldn't go back to the same sports, so he found new ones, such as elliptical machines and long walks.

"When I exercise, I feel good," Dr. Klein explains. "My body feels better, my brain's working better—and

I can get the same feeling that I did when I played basketball by working out at the gym."

As we age, our bodies are less equipped to handle the wear and tear that comes with punishing or high-impact exercise, making low-impact activities a smarter choice.

"Find aerobic exercise that's easier on the lower extremities but still gets the heart and lungs pumping, such as swimming or stationary biking," recommends Steven Sanders, M.D., a specialist in minimally invasive total joint replacement and sports medicine who is on the medical staff at Baylor Medical Center at Irving.

He also recommends muscle conditioning. "You don't need heavy weights or high repetitions," Dr. Sanders says. "Everything should be in moderation."

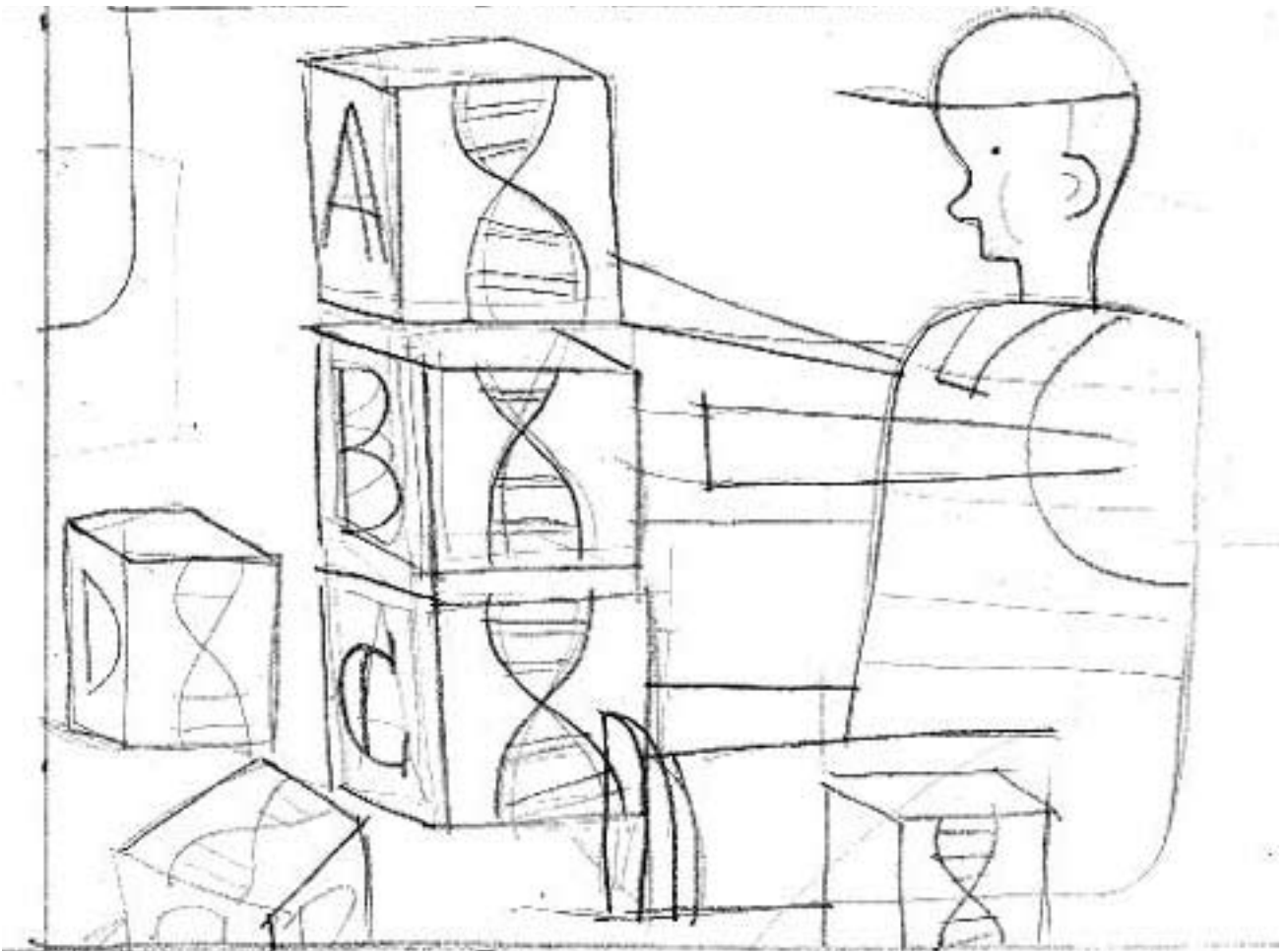
Warming up and cooling down properly is critical, too. On a stationary bike ride, for example, start and end at a slower pace to ease in and out of your exercise session.

Stretching is especially important for older people, Dr. Klein adds. "As we get older, the muscles tighten up a bit," he explains. "You need to stretch them out—holding each stretch for a count of five or 10—before and after you put them through any type of stress."

Still, don't be surprised if exercise leaves you a tad sore. "I've had patients say, 'I never felt this way before,' and I remind them, 'Well, you were never 80 before,'" Dr. Klein says.

But don't ignore recurring pain or discomfort. "If your knee hurts every time you exercise, go see an orthopaedic surgeon," Dr. Sanders suggests. "An expert can tell you whether something needs to be done, which could be as simple as making modifications to your physical activity." *By Amy Lynn Smith*

■ **For a referral to an orthopaedic specialist on the medical staff at Baylor, call 1-800-4BAYLOR or visit BaylorHealth.com and choose Find a Physician.**



Unlocking the Secrets to Metabolism

Baylor looks
at how the
body uses
energy

Metabolism allows our bodies to turn proteins, fats and carbohydrates from the food we eat into energy. It's a complex chemical process that is critical to life. But sometimes, a rare inherited condition prevents metabolism from taking place properly. Our bodies have missing or insufficient levels of important enzymes, amino acids or hormones that help build, repair or break down cells no longer needed.

For more than 25 years, researchers at the Kimberly H. Courtwright and Joseph W. Summers Institute of Metabolic Disease (IMD) at Baylor have been looking for answers to metabolic disorders. Their work has led to many discoveries, from identifying previously unknown diseases to developing therapies for infants, children and adults affected by these medical problems.

As a component of the Baylor Research Institute, the IMD is an internationally recognized resource in this field and conducts extensive clinical research, testing and diagnosis for dozens of metabolic conditions. It is a pioneer in developing metabolic screenings for newborns, now a mandatory program in every state. A simple heel prick that extracts a few drops of blood can analyze whether the most common metabolic conditions are present in babies at birth. The IMD also offers a Supplemental Newborn Screening, a more comprehensive program that tests for 30 additional disorders not covered by the state screening.

PREVENTING SERIOUS CONSEQUENCES

Baylor's research into metabolic conditions is vital for many reasons, says Raphael Schiffmann, M.D., director of the IMD. Untreated metabolic disorders including PKU and Tay-Sachs can thwart normal physical development, cause mental retardation and potentially be life-threatening.

"Our understanding of the nature of the metabolic defect and how to compensate for it contributes to prevention," says Dr. Schiffmann. "For example, if congenital hypothyroidism is identified early and the infant is given the missing thyroid hormone, the child will grow up without hypothyroidism."

Dr. Schiffmann was a lead investigator in developmental and metabolic neurology at the National Institutes for Health for 16 years before coming to Baylor last year.

Under his direction, the institute is continuing its contribution to global understanding of rare inherited metabolic disorders, and also is pursuing efforts to see if there may be a potential link between acquired metabolic deficiencies and more common public health concerns.

AN EXPANDED FOCUS

Researchers at the Institute of Metabolic Disease are investigating whether metabolic imbalances may be one of the underlying factors in everything from diabetes and heart disease to Alzheimer's and Parkinson's.

"We know that a vitamin deficiency is associated with a higher risk for Alzheimer's and that a deficiency in folic acid has an effect on dementia," Dr. Schiffmann explains. "Now we are looking at whether another type of defi-

ciency or imbalance may be associated with Huntington's disease and other conditions."

For Dr. Schiffmann, taking the knowledge learned from studying relatively rare metabolic problems and applying it to the general population is the perfect marriage of scientific research and clinical application.

"Almost everything we understand about common medical conditions has come out of studying those families who have a rare genetic mutation," he says. "It's a matter of working on rare diseases and then looking at what we know about them and seeing if there is an implication for the general population. It is the interplay between rare and common metabolic disease, inherited and not inherited."

Dr. Schiffmann is an expert in lysosomal storage diseases, a group of some 40 different inherited metabolic disorders that result from a missing or faulty enzyme. In particular, he is studying Fabry disease, a type of lysosomal storage disease in which the body cannot metabolize a particular group of lipids, a fat-like substance. The lipids build up to unhealthy levels, especially in the kidneys and cardiovascular system.

Previously classified as a rare genetic disorder, Dr. Schiffmann reports that current research shows Fabry disease might be more common than originally thought. "Based on newborn screenings, we find that a substantial portion of the general population could have this abnormality."

If that's the case, Dr. Schiffmann says, Fabry disease may be considered not so much a disease as a risk factor because the complications include stroke, heart disease and kidney disease.

To further investigate this possibility, IMD researchers recently initiated a clinical protocol to screen 5,000 Baylor patients with cardiac disease. The goal is to see whether these individuals may have the type of genetic abnormality that causes Fabry disease. Results could help identify an unknown metabolic risk factor—one that if modified or treated could reduce the chance of developing cardiovascular disease.

"There is a lot of potential here for the future of medicine," Dr. Schiffmann says. "We may be able to look at metabolic implications as risk factors for not just heart disease, but many different medical conditions."

■ To find out more about Baylor's research programs, visit BaylorHealth.com and choose the Advancing Medicine tab.

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Raphael Schiffmann, M.D.
director of the Institute of
Metabolic Diseases at Baylor





5 things you need to know
about digestive disorders

Quit Your Belly Achin'

Maybe you're in love. Perhaps it was something you ate. Or maybe you're experiencing hunger pangs.

Your stomach and other digestive organs experience a wide range of feelings—and not all of them are pleasant. But when should you worry? Here are five things you need to know about digestive disorders:

1. SYMPTOMS

"The symptoms experienced depend on the type of disorder, but the most common symptom is abdominal discomfort, including pain," says C. Richard Boland, M.D., chief of gastroenterology on the medical staff at Baylor University Medical Center at Dallas.

Other common symptoms include nausea, bloating, constipation, diarrhea, heartburn or blood in the stools. All persistent symptoms should be reported to your doctor.

2. DIAGNOSIS

Digestive disorders can be difficult to diagnose as most aren't detectable by blood or imaging tests. "Some digestive disorders, like irritable bowel syndrome [IBS] for example, are diagnosed by exclusion," Dr. Boland says. In other words, IBS is diagnosed when all other disorders have been ruled out.

3. TALKING TO YOUR DOCTOR

Because diagnosis of digestive disorders often relies on symptoms and patient history, it's important to be open with your physician. Keeping a journal of eating habits and symptoms can help him or her determine whether you have IBS, gastroesophageal reflux disease, ulcers, lactose intolerance, celiac disease or another disorder. "It might be hard to know exactly what it is you're eating," Dr. Boland says. "So keeping a diary can be helpful. And also note if you smoke or drink."

4. LIFESTYLE CHANGES

Once you have an idea what foods and behaviors might be causing your symptoms, you can reduce them by modifying your eating habits. For instance, if you get indigestion after eating pizza late at night, consider enjoying a less-greasy dinner earlier in the evening. Or, if you only get bellyaches after eating cereal with milk, you may be lactose intolerant and might need to take an over-the-counter pill when eating dairy products.

5. TREATMENT

Of course, not all digestive disorders can be remedied by watching what you eat and when. "In fact, while food is the first thing we think of with digestive disorders, not all of them relate to food," Dr. Boland says. But that doesn't mean they aren't treatable. A wide variety of prescription medications, natural remedies, stress reducers and in some cases surgery are available to alleviate symptoms. *By Shelley Flannery*

Gut Check

For a referral to a gastroenterologist on the medical staff at Baylor, call **1-800-4BAYLOR** or visit **BaylorHealth.com**.

BAYLOR MARCHES FOR BABIES



On April 18, Baylor Health Care System employees will gather at Norbuck Park's White Rock Lake to once again take part in the March of Dimes® biggest fundraiser, March for BabiesSM. To date, the event has raised more than \$1 billion to fund lifesaving research to help save babies born prematurely or with birth defects.

Baylor Health Care System has been a corporate sponsor of March for Babies since 1997, and each year, Baylor employees do their part by fundraising and participating in the walk. "Our healthcare system is responsible for the delivery and care of thousands of babies each year, and I think the March of Dimes mission is very much aligned with the mission and vision of the Baylor Health Care System," says Rose Johnson, director of patient care services for neonatology at Baylor Dallas and head of Baylor's walk team.

It's a cause Baylor and its employees are committed to. Even Baylor President and CEO Joel Allison is getting involved; he's chair of this year's walk. "Many staff members are passionate about this particular charity because we work so closely with premature babies and their families," Johnson says. "Everyone is really excited about the event."

■ **Want to get involved? Visit marchforbabies.org to find out more about the walk in April.**

THINK FAST, BABY BOOMERS

An estimated 10 million people in your generation will develop Alzheimer's in their lifetime, but staying mentally active will help lessen your risk, according to the Alzheimer's Association. Use these memory aids to help you stay sharp.

■ **Develop landmarks.** Place your keys, wallet, phone, medications and valuable documents in the same spot every time.

■ **Use visual cues.** Say to yourself, "Once I see this when I get home, I will remember to do this."

■ **Rehearse and repeat.** Repeating a quick phrase helps place the information in your long-term memory.

■ **Use external aids.** Try using cell-phone alarms, memo pads, appointment books and other scheduling aids.

■ **If you're worried that your memory troubles might be more than just normal aging, talk with your physician about your concerns. For a referral to a geriatrician on the Baylor medical staff who evaluate your health status, call 1-800-4BAYLOR or visit BaylorHealth.com.**



Cart Smarts

This plan of attack will help you make the most of your next trip to the supermarket.

Before you shop, eat a light meal or a healthy snack to help you avoid impulse buys based on hunger. Create a list that matches up with the meals and snacks you have planned for the week. At the store, start with the perimeter of the store, where you'll find fresh—not processed—foods such as produce, meat and dairy products.

Meat Gravitate toward fish, ground turkey, lean meat and boneless, skinless chicken.

Dairy Look for low-fat versions of milk, yogurt and cottage cheese.

Produce Choose for color with vegetables and fruits.

Frozen foods Avoid high-fat, high-sodium entrees. Choose fruits and vegetables not packed in syrup.

Bread Think whole grain, and avoid white bread, but don't be deceived by appearances. Choose breads that contain at least 3 grams of fiber per slice and say "whole wheat" on the label.