Help for knees in need

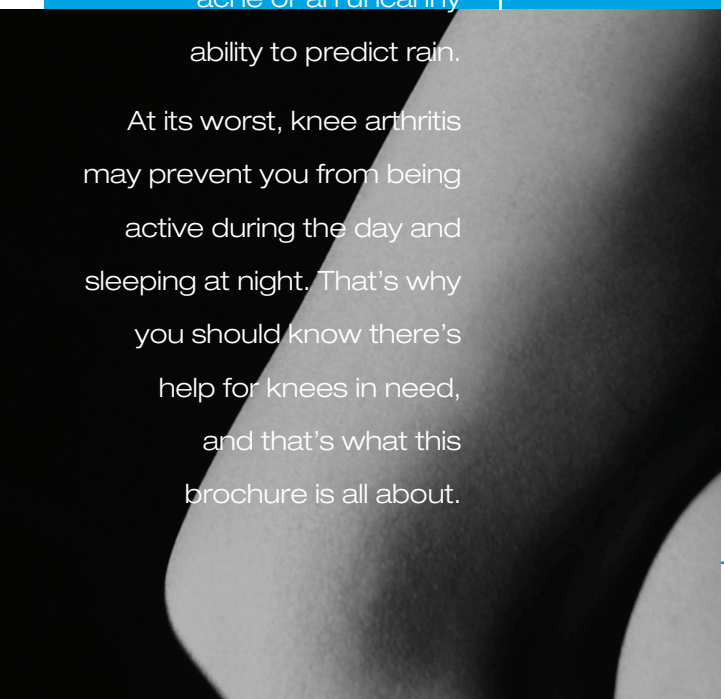
Understanding knee arthritis and today's treatment options

zimmer

Table

Unfortunately, the knees you're born with don't come with a lifetime warranty. When working properly, they give you decades of mobility and help you lift everything from groceries to grandchildren. But, as years pass, arthritis often sets in. It may start with an occasional ache or an uncanny ability to predict rain.

At its worst, knee arthritis may prevent you from being active during the day and sleeping at night. That's why you should know there's help for knees in need, and that's what this brochure is all about.



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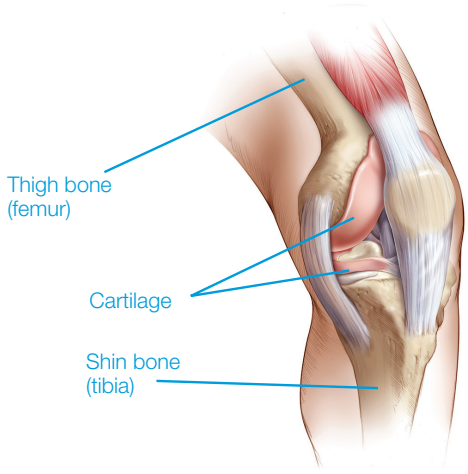
Knee Arthritis

If your knees ache, they have lots of company. Over 46 million Americans suffer from arthritis.[1] Osteoarthritis is the most common type, and the way it works in the knee is pretty simple. Three bones meet up at the knee joint: the end of the thigh bone (femur), the top of the shin bone (tibia), and the kneecap (patella). Those bones are cushioned by cartilage, but when the cartilage is injured or worn away—which is actually the definition of osteoarthritis—the bones grind against each other. That grinding *hurts.* You can feel it climbing stairs, working in the garden, or just bending your knees to sit. It may even keep you up at night.



The knee is like a hinge that joins your thigh bone (femur) to your shin bone (tibia). Cartilage provides a cushion between the bones. Muscles and tendons connect them and keep the joint stable. When healthy, these parts work together to let you bend your knee smoothly and without pain.

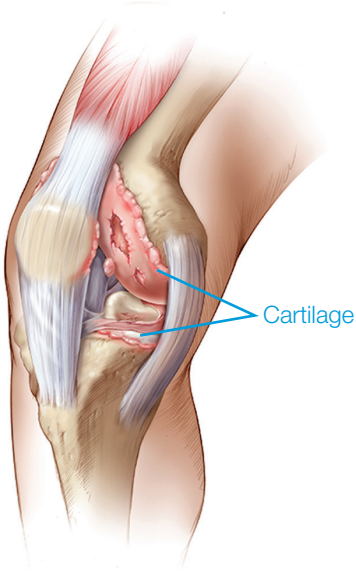
Why you?

Researchers are finding a strong link between genetics and osteoarthritis. In other words, if your mother had it, you're more prone to have it too.[2] Other contributing factors may be trauma to the knee, overuse on the job (think of those major league baseball catchers), or being overweight. In addition, osteoarthritis can occur when joints are out of alignment, as in people who are bowlegged or knock-kneed.

Diagnosis

Early diagnosis of arthritis and tailored treatment are crucial in slowing or preventing damage to your joints. Only a physician can determine if you have arthritis, based on:

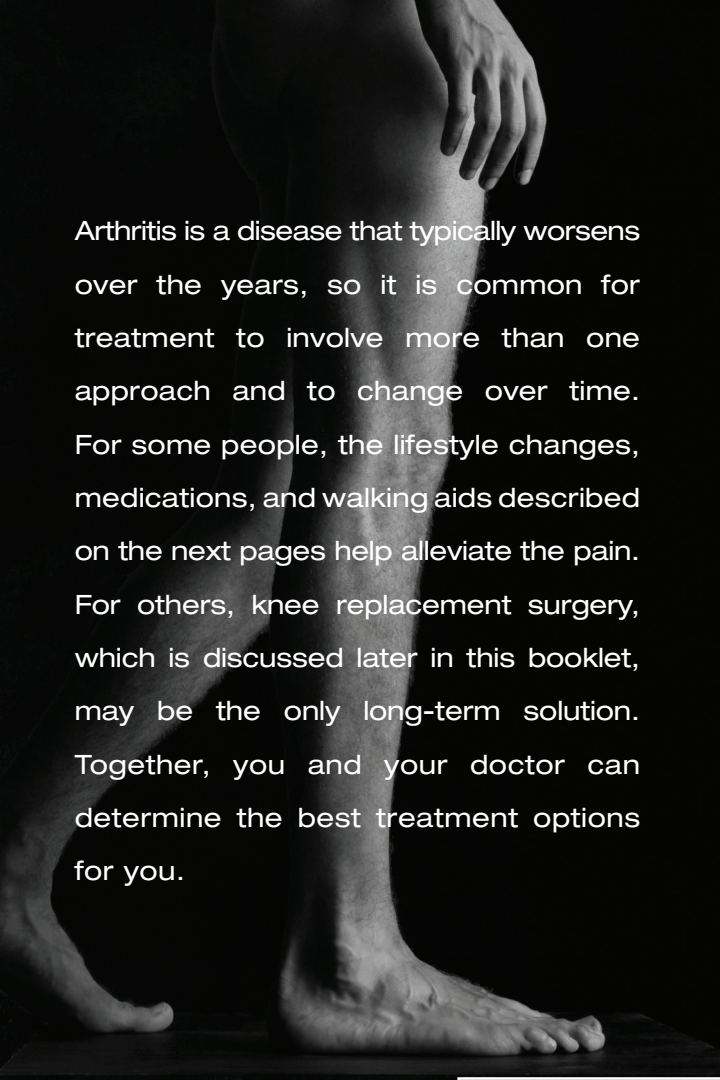
- the overall pattern of symptoms
- medical history
- physical exam
- X-rays and other imaging techniques
- lab tests



In an osteoarthritic knee, the cartilage has thinned and deteriorated, allowing bone to rub against bone and cause pain.

The good news about arthritis in the knee is that it can be treated. Here are some signs that it might be time to talk to your doctor:

- Pain persists or recurs over time
- Pain worsens after exercise or other weight-bearing activities
- Pain in rainy weather
- Pain prevents you from sleeping
- A decrease in knee motion or the degree to which you're able to bend your knee
- Stiff or swollen knees
- Difficulty walking or climbing stairs
- Difficulty getting in and out of chairs and bathtubs
- Morning stiffness that typically lasts less than 30 minutes (as opposed to stiffness lasting longer than 45 minutes, a sign of an inflammatory condition called *rheumatoid* arthritis)
- "Grating" of the joint
- Previous injury to the anterior cruciate ligament (ACL) of the knee



Arthritis is a disease that typically worsens over the years, so it is common for treatment to involve more than one approach and to change over time. For some people, the lifestyle changes, medications, and walking aids described on the next pages help alleviate the pain. For others, knee replacement surgery, which is discussed later in this booklet, may be the only long-term solution. Together, you and your doctor can determine the best treatment options for you.

Nonsurgical Treatments

The following nonsurgical treatments are often recommended for knee pain:

Pacing Your Activities helps protect your joints. This involves alternating periods of activity with periods of rest, so your joints don't tire from the stress of repeated tasks.

Assistive Devices may help you maintain mobility, while easing joint stress and pain. For example, shoe inserts called orthotics are designed to support, align, and improve the function of your foot. In turn, they may lessen the pressure on your knees. A cane can also be very helpful (not to mention dapper).

DID YOU KNOW?

For a perfect fit, the top of your cane's handle should reach the crease of your wrist, when you are standing with arms at your side. The cane should be held in the hand opposite the painful knee.

Low-Impact Exercise is important to keep the body moving and flexible. And contrary to popular opinion, when done properly, it will not "wear out" joints or increase osteoarthritis.

DID YOU KNOW?

Many range-of-motion exercises and aerobic exercise programs, including fitness walking and swimming, are often beneficial for people with osteoarthritis. Strengthening of the quadriceps (thigh muscle) can help reduce knee pain caused by kneecap (patella) problems and several different kinds of ligament tears.

Weight Loss reduces the stress on your knees and is beneficial for people in all stages of osteoarthritis. After all, your knees bear the full load of your weight plus everything you carry.

Bracing may help reduce knee pain and improve function and mobility. Different types of braces are available. For example, a "support" brace supports the entire load on your knee, but an "unloader" supports the weight on only one side, when only one side of the knee is damaged.

Heat or Cold treatments may provide short-term relief from arthritic pain and stiffness. Using cold packs helps reduce inflammation and swelling and may be useful in flare-up situations. Heat assists in relaxing muscles and increasing circulation.

Physical & Occupational Therapy can help you manage the pain of osteoarthritis.

DID YOU KNOW?

Physical therapists can work with you to create a personalized exercise program and show you how to use therapeutic heat and massage. *Occupational* therapists can introduce you to all kinds of beneficial devices, such as those used to elevate chair or toilet seat height.

Medications are used by millions of people to treat osteoarthritis. They run the gamut from over-the-counter to prescription drugs, including aspirin-free pain relievers, anti-inflammatory drugs, corticosteroids, disease modifiers, and sleep medications. Nonnarcotic and narcotic pain relievers can also be used. However, some of these can be addictive over time.

Primary care physicians often begin treating osteoarthritis with a simple pain reliever such as acetaminophen[3] (Tylenol). If the pain persists, oral NSAIDs (nonsteroidal anti-inflammatory drugs) may be tried.

DID YOU KNOW?

It is important to talk with your doctor about all medications and dietary supplements you are taking or are considering taking, even those available without a prescription. All drugs have side effects, and some of the medications used to treat osteoarthritis increase the risk of liver and kidney damage. Even nonprescription NSAIDs, such as ibuprofen and naproxen, have potential cardiovascular and gastrointestinal risks.

Injections of hyaluronic acid, a substance produced in natural, healthy joints, are sometimes used to provide temporary relief from knee pain. Anesthetics also may be injected with a corticosteroid (usually cortisone), to numb your knee and help keep pain at bay.

Nontraditional or Alternative Treatments are used by many people who suffer from knee osteoarthritis, although the effectiveness of these treatments is usually not supported by widely accepted scientific research. In addition, herbal and dietary supplements are not regulated by the FDA. Because drug interactions and side effects can occur, it is extremely important for you to consult with your physician about all supplements and medications that you are taking or considering taking.

DID YOU KNOW?

The National Institutes of Health (NIH) conducted a study called the Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT), the first multicenter study to test the effects of these dietary supplements in treating knee osteoarthritis. The study found that these supplements, when used in combination, may provide pain relief for people with moderate to severe knee osteoarthritis. People with mild osteoarthritis did not experience significant pain relief.[4]

Knee Surgery

If nonsurgical treatments aren't relieving your pain and your mobility is affected, you may still achieve the results you want with surgery on your knee. There are better surgical choices today than before.

Arthroscopy

Often the first surgical treatment for knee osteoarthritis is arthroscopy, a surgical procedure used to see, diagnose, and treat problems inside the joint. Arthroscopy typically involves inserting a small camera into the knee and then treating identifiable problems, which may include:

- trimming damaged cartilage
- removing loose debris within the knee (debridement)
- irrigating the inside of the knee (lavage)
- removing/repairing a torn meniscus (cartilage) or reconstructing a damaged ligament

Arthroscopy has been shown to diminish pain, and it may help delay the progression of knee osteoarthritis.

Is it time for knee replacement?

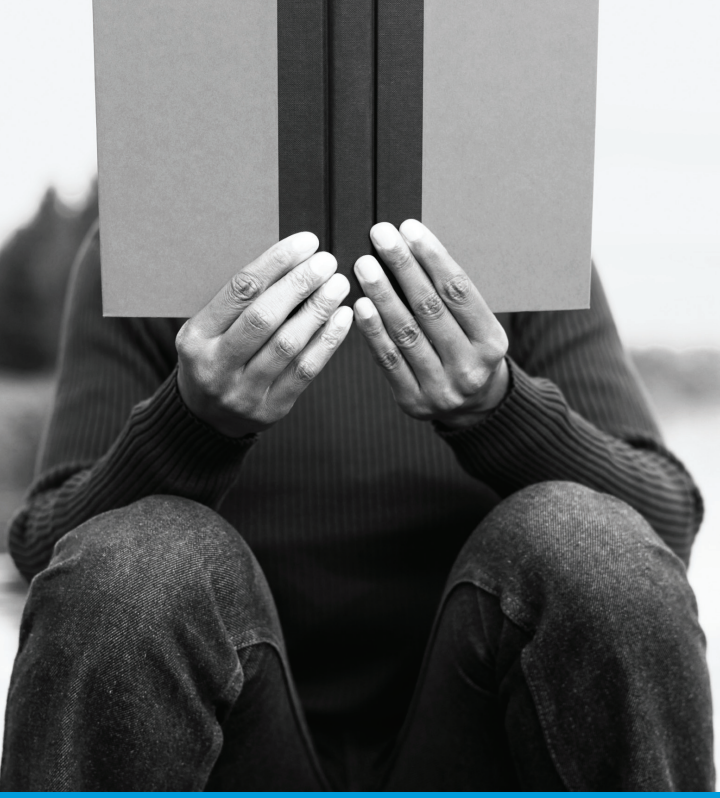
That's a question you and your orthopedic surgeon will have to answer together. But when knee pain is so bad it actually interferes with the things you want or need to do, the time may be right. Here are some signs to consider:

- Medication and using a cane just aren't delivering enough relief
- Pain is keeping you up at night
- Your knee aches during and after exercise
- Your knee stiffens up sitting in a car or a movie theater
- You are no longer as mobile as you'd like to be

What is total knee replacement?

It's the same idea as having most things fixed—worn parts are taken out, and new parts are installed in their place. In total knee replacement surgery, the damaged portions of the knee bones are removed, and the knee is resurfaced with metal and plastic implants. A National Institutes of Health (NIH) Consensus Panel concluded that total knee replacement is extremely successful, resulting in "rapid and substantial improvement in the patient's pain, functional status, and overall health-related quality of life in about 90% of patients."[4] Over 250,000 people a year undergo the procedure, in the US alone.

Total Knee Replacement



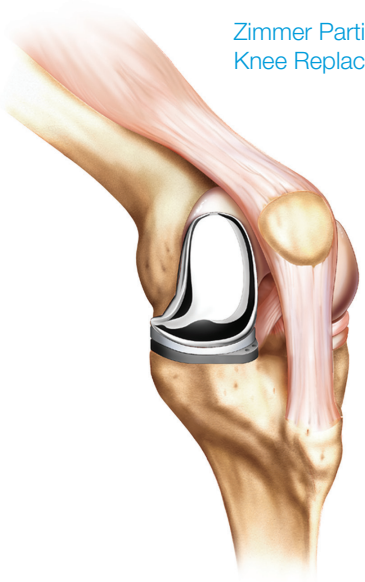
The surface of the thigh bone (femur) is replaced with a contoured metal component designed to fit the curve of your natural bone. The surface of the shin bone (tibia) is typically replaced with a flat metal component and a smooth plastic component that serves as cartilage. The undersurface of the kneecap may also be replaced with an implant made of plastic, or a combination of metal and plastic.

What is partial knee replacement?

Partial knee replacement is an option for the patient whose knee is damaged on one side and healthy on the other. The surgeon removes only the diseased portion of the knee before placing the implant, leaving the healthy portion untouched. As with any surgery, there are risks, and only a surgeon will be able to tell you if a partial knee is right for you.

DID YOU KNOW?

Sometimes, partial knee replacement can be performed with minimally invasive surgery. Hospital time is minimized, and the procedure may even be done on an outpatient basis. Talk with your surgeon to find out if you are a candidate for minimally invasive surgery.



Zimmer Partial
Knee Replacement

How long does knee replacement last?

That's a question no one can answer for sure. The patient's physical condition, activity level, and weight all play a role. With appropriate activity, knee replacements can last many years. Your individual outcome depends on many factors that you can discuss with your surgeon.

What risks are involved?

Every surgical procedure has some risks and benefits. Your individual results will depend on your personal circumstances, and recovery takes time. Infection is a risk in any surgical procedure, and according to the American Academy of Orthopaedic Surgeons, 1.8% of patients get an infection in the first 2 years. When infection occurs after total knee replacement, it is most commonly caused by bacteria that enter the bloodstream during dental procedures or from urinary tract, skin, or fingernail infections. Although uncommon, when these complications occur, they can delay full recovery. For the first 2 years after your knee replacement, you must take preventive antibiotics before dental or surgical procedures that could allow bacteria to enter your bloodstream. After 2 years, talk to your orthopedist and your dentist to see if you still need preventive antibiotics before other procedures.

Dislocation can result from improper positioning during surgery. Joint fracture has been reported following joint replacement and is typically caused by heavy weight or people with unrealistic performance expectations. How long a knee replacement will last varies from person to person. It depends on many factors, such as your physical condition and activity level, body weight, and the surgical technique.

Blood clots in the leg veins are the most common complication of knee replacement surgery. Your surgeon will outline a prevention program. This may include periodic elevation of your legs, lower leg exercises to increase circulation, support stockings, and medication to thin your blood.

How do I know which knee is right for me?

Knee replacements have been highly successful for more than 30 years. According to the National Institutes of Health, 9 out of 10 patients who undergo the procedure report improved pain relief, knee function, and overall health-related quality of life. It is important to be involved in your recovery, and there are some additional things about knee replacement you may wish to discuss with your primary doctor and an orthopedic surgeon:

WOMEN ARE NOT SMALLER MEN!

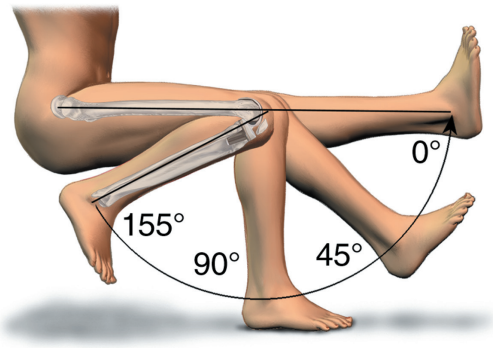
The *Zimmer Gender Solutions*™ Knee is the only knee replacement specifically designed with a woman's shape in mind. There are three distinct differences from unisex implants:

1. The *Zimmer* Gender Knee has a **thinner profile** than traditional knee replacements
2. It **allows for more natural movement** of the kneecap
3. It has a **shape specially contoured for women**

Be flexible

Flexion, or bending, is an important subject when talking with your doctor about which knee replacement is right for you. Many everyday activities require good range of knee motion, such as climbing stairs (75-140 degrees) and sitting in a chair (90-130 degrees). Other activities, such as gardening, golfing, kneeling, or sitting cross-legged, can demand an even greater degree of bending. Zimmer was the first to develop several high-flex knee implants, including *NexGen®* and *Gender Solutions* Knees, which accommodate 155 degrees of deep-knee bending in patients who are able. Most other knee replacements accommodate knee bending only up to 125 degrees. Talk to your doctor about the risks on page 18 that are associated with knee replacement.

Additional information on implant materials and a “Find a Doctor” tool to help you identify surgeons who offer these technologies is available at **zimmer.com**. You also may call toll free, **800-447-5633**.



Minimally Invasive Options

Traditional knee replacement surgery involves a long incision (8 to 12 inches) and a lengthy rehabilitation. Over the past decade, however, minimally invasive techniques have been developed to place the very same clinically proven joints. Today, there are even minimally invasive procedures for partial knee replacement. You and your surgeon can determine if you are a candidate for minimally invasive surgery.

Zimmer MIS Knee Replacement

Zimmer's minimally invasive knee replacement techniques involve less cutting of skin than traditional surgery, and less or no cutting of key muscles and tissues. The goals of the *Zimmer* MIS techniques are to alleviate pain, restore mobility, and get you back to your everyday activities sooner.

Zimmer MIS procedures are named based on how your surgeon accesses your knee, so that the damaged areas can be replaced with new parts. You may hear your doctor talk about these techniques. The most commonly used *Zimmer* minimally invasive and "mini-incision" total knee replacement techniques are called:

- MIS *Quad-Sparing*™ Total Knee Arthoplasty
- MIS Subvastus
- MIS Midvastus
- MIS Medial Parapatellar

DID YOU KNOW?

The best way to find out if you are a candidate is to talk to an orthopedic surgeon who offers these techniques. These surgeons can be identified using the "Find a Doctor" tool on zimmer.com or by calling toll free, 800-447-5633.

What is it like to have knee replacement surgery?

Before Surgery Once you and your surgeon decide that total knee replacement is right for you, a surgery date will be scheduled, and you may need to do some preparation. For example, your surgeon might ask you to have a physical examination by an internist or your regular doctor. And because blood transfusions may be needed during surgery, you may want to "bank" one or two units of your own blood, to have on hand. You can draw one unit per week, before your surgery.

During Surgery On the day of surgery, a small tube (intravenous line) will be inserted into your arm. This tube will be used to administer anesthesia, antibiotics, and other medication. After the anesthesia takes effect, your knee will be scrubbed and sterilized with a special solution.

Surgery will take anywhere from 1 to 3 hours, and it will begin with an incision over the knee that will expose the joint. When the bones are fully visible to the surgeon, precision guides and instruments are used to remove the damaged surfaces of the bones.

The replacement parts are then secured to the bones. It might also be necessary to adjust the ligaments that surround the knee. When the surgeon is satisfied with the fit and function of the joint, the incision will be closed.

A tube may be placed in the incision to drain fluids that naturally develop at the surgical site. A sterile bandage will then be applied, and you will be taken to the recovery room, where you will be closely monitored.

Recovery You will be sent to the recovery room, and as the anesthesia wears off you will slowly regain consciousness. A nurse will be with you, and may encourage you to cough or breathe deeply to help clear your lungs. You will also be given pain medication. When you are fully conscious, you will be taken back to your hospital room.

What Can I Expect After Surgery?

Rehab begins quickly! On the day after your surgery, you'll get a visit from your physical therapist and begin learning how to use your new knee. You may be fitted with a "continuous passive motion" machine that will gently straighten and bend your knee. Other exercises that promote blood flow to your legs include ankle pumps and pedaling your feet.

Getting up and around soon is important. If you had considerable pain before surgery, you probably cut back on your activities, so your leg muscles may be weak. You will need to build up enough strength to control your new knee, and early activity encourages healing, too. Your doctor and physical therapist will give you specific instructions on wound care, pain control, diet, and exercise.

At home, you will need to continue your exercises, and your physical therapist may continue to work with you. Within 6 weeks after surgery, most patients are able to walk with a cane; and in 6 to 8 weeks, you will probably feel well enough to drive a car.

Even after you have fully recovered from your surgery, you will still have some restrictions like contact sports or other activities that put excessive strain on your knees. Remember, although your artificial knee can be replaced, a second replacement is seldom as effective as the first. But the good news is—in most cases—successful total knee replacement will relieve your pain and stiffness, and allow you to resume most of your normal daily activities. And that really is a happy ending.

Two New Knees and Brenda Madera Is Cooking Again

A young woman with old knees — that's how Brenda Madera started thinking of herself in her early 40s when her arthritis-riddled knees began preventing her from doing many things she enjoyed. Brenda particularly missed cooking her family traditional Puerto Rican meals. Standing at the stove hurt too much, so Brenda's famous rice and beans were replaced with microwave dinners.

Exercise and shopping at the mall were other activities that went by the wayside. Brenda took medication for the pain and had the occasional steroid injection, but the relief lasted for only a few weeks each time. When she found herself shopping from an electric scooter, Brenda knew something had to change. "I thought, 'This is horrible, I'm too young for this,'" she said. "I used to want to scream. I cried to my family and friends, 'I can't walk, I can't function.' It's very depressing." A few months after her 42nd birthday, Brenda had both knees replaced.

Her recovery was hard work but well worth it, she said. Brenda lost 50 pounds before the surgery. With her new knees, she is now able to do the moves in her favorite Tae Bo and *The Biggest Loser* videos, and is determined to lose another 40 pounds. She also is enjoying being able to stand and cook again, and is taking long walks, swimming, lunching with coworkers, and going to the movies.

Before she had her knees replaced, Brenda sometimes had to crawl upstairs to her bedroom on all fours. She missed out on family get-togethers, because her knee couldn't tolerate long drives. At work, she had to hide how difficult it was for her just to stand up to find a file. Today is a completely different story. "My friends say, 'Look at you walking around!'" Brenda said. "I feel like a normal person again. It's great—I'm really happy."

Patient testimonial included in this material reflects actual patient experience. Results are not necessarily typical, indicative, or representative of all knee replacement patients. Your results will depend on many factors, such as pre- and postoperative health conditions, weight, activity level, and adherence to instructions regarding the use of your new knee. In return for allowing Zimmer, Inc. to share her personal story with others, the patient identified received nominal compensation.

Notes

Notes

References: 1. National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. National Arthritis Action Plan: A Public Health Strategy. January 2009. Available at: http://www.cdc.gov/nccdphp/publications/aag/arthritis.htm. **2.** National Institute of Arthritis and Musculoskeletal and Skin Diseases, Department of Health and Human Services' National Institutes of Health (NIH), Handout on Health: Osteoarthritis. May 2006. NIH Publication No. 06-4617. Available at: http://www.niams.nih.gov/hi/topics/arthritis/oahandout.htm. **3.** Clegg DO, Reda DJ, Harris, CL, et al. Glucosamine, chondroitin sulfate, and the two in combination for painful knee osteoarthritis. *N Engl J Med.*. 2006;354:795-808. **4.** NIH Consensus Statement on Total Knee Replacement. *NIH Consens State Sci Statements*. 2003;20:1-32.

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☐ Yes! I would like to receive more information on Zimmer's latest joint replacement technology. [Please print clearly.]

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In order to send you the most relevant information, please complete the short questionnaire below. Please choose your level of agreement by circling a number in the scale below.

1. My knee causes me difficulty in walking, even short distances.

Do not agree 1 2 3 4 5 6 7 Completely agree

2. Joint replacement surgeries have a very high success rate.

Do not agree 1 2 3 4 5 6 7 Completely agree

3. My pain is not severe enough to have the replacement surgery yet.

Do not agree 1 2 3 4 5 6 7 Completely agree

4. My doctor has told me that I am not old enough to have the surgery yet.

Do not agree 1 2 3 4 5 6 7 Completely agree

5. I am a caregiver for someone and am concerned about who will take care of them during rehab from the knee replacement surgery.

Do not agree 1 2 3 4 5 6 7 Completely agree

6. I am still looking for a surgeon whom I can trust and feel comfortable with.

Do not agree 1 2 3 4 5 6 7 Completely agree

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Knee Pain

There's help for knees in need

To learn more about Zimmer joint replacements, obtain helpful information for patients and caregivers, or for assistance in finding a surgeon familiar with our products and surgical techniques,

call toll free: 800-447-5633
or visit zimmer.com

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Important Note: This brochure is intended to provide an overview of knee replacement surgery and should be reviewed with your doctor. It does not include all of the information needed to determine eligibility for knee replacement or for the proper use and care of artificial knee replacements. Please consult your surgeon for more information. Information may also be obtained by calling the toll free number or visiting the Web site. The toll free number also can be used to obtain complete product contraindications, warnings, precautions, and possible adverse effects. Individual results may vary. Your results will depend on your personal circumstances. How long a knee replacement will last varies from patient to patient. It depends on many factors, such as the patient's physical condition, activity level, and body weight and the surgical technique. Replacement joints are not as strong or durable as a natural, healthy joint, and there is no guarantee that an artificial joint will last the rest of a patient's life. All knee replacements may need to be replaced at some point.

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