



Arthritis & Joint Insight

A Publication by Dr. Robert Lock, II

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Ceramic Total Hip Replacement: The future gold standard?

Total hip replacement surgery is a common procedure with more than 190,000 surgeries performed each year in the U.S.. Hip replacement is indicated for individuals in whom non-surgical interventions are no longer effective. Conditions such as avascular necrosis, osteoarthritis, inflammatory arthritis and congenial malformations often lead to the need for hip replacement surgery. The surgery yields excellent results with 80% of patients still having a functioning hip after 20 years.

A traditional hip replacement is metal (cobalt chrome) and plastic (high-molecular weight polyethylene). The normal "life expectancy" of a hip implant is 20-25 years. In the younger, more active patients hip replacements tend to wear faster, thus warranting a revision surgery. A revision hip replacement is needed when the implant begins to show wear or loosens from the bone. Revision surgery is more complicated and the results are not as favorable as a primary surgery. These factors have fueled orthopedic research to find alternative bearing surfaces for hip replacements.

Ceramic (aluminum oxide ceramic) hip replacements are

a relatively new alternative to traditional metal on plastic components. Ceramic implants are very hard and smooth. Initial studies show that ceramic implants produce the lowest quantity of wear particles of all known combination materials. A study by Heisel in 2003 found that ceramic implants produced greater than a 1000% less wear particles than other total hip implant combinations.

Although ceramic implants are very hard they can also be very brittle when a blow strikes against a small area of its surface. With repeated small blows to the implant it can weaken and eventually fracture sending small splintering pieces into the surrounding area. I often describe the failure of this component to patients by making them visualize dropping a ceramic vase or pot. Catastrophic failure is a known complication of ceramic total hip replacement.

The component more recently has been made famous for a clicking sound that some patients experience when changing positions. Several newspaper articles have been written about the annoyance of the click along with countless videos on YouTube™, an internet video sharing website,

where individuals reproduce the clicking for cyberspace patrons. Some surgeons have replaced the noisy components at their patients request. Studies proved that in those cases even with slight wear the components would have still outlasted their counterparts.

The ceramic implant is known to have better wear characteristics than other bearing surfaces according to laboratory and short term studies. The drawback, however, is that this relatively new alternative has no long-term scientific data. Despite the lack of long term studies this might be an attractive option for a young arthritic who hopes to prolong revision.



(References/Sources: Total Joints Info, Zimmer, AAOS, B. Feder (NY Times) 2008 "That must be Bob. I hear his new hip squeaking.", NIH, CDC, YouTube)

In This Issue:

Ceramic Hip	1
Walking	2
Prophylaxis	3
Hydrocodone	3
Knee Arthritis	4
Shoulder	4
LCP Disease	5
Fall Prevention	6
Tell your Story: Lorraine Anderson	7
About Dr Lock	8

Walking your way to healthy a “new” you

We continue our spotlight on exercise, “New Year-New You”, with a look at walking. Although its something we do daily with little thought, there are ways to make your walking workout more productive and enjoyable. Whether you prefer an indoor treadmill or the beauty of the outdoors, walking is a great exercise for those who suffer from arthritis.

When choosing an activity to add to your exercise routine more often than not we think of equipment or a gym membership, but a low cost, natural option could involve just moving your own two feet. More and more individuals are taking advantage of walking as their choice to living a more healthy and active life. Walking doesn't require costly memberships and can be done at your own pace and preferred time of day.

Researchers recommend walking a total of 3 hours per week. A brisk walk has been shown to reduce bad cholesterol, decrease the risk of some cancers, improve diabetes, and aid in weight loss. Walking is also an effective way to improve joint mobility, muscle tone and decrease pain. Here are some tips to getting the most out of your walking workout:

- **Equipment**– Although you probably already own these they are essential to making your walk a pleasurable experience. Don't forget your sun block, sunglasses, water bottle,

hat and comfortable layered clothes. Invest in comfortable walking or running shoes and thick socks. Walking shoes are usually defined as ones with flexible soles. Proper fit for a walking shoe should be 1/2 size larger than your dress shoe.

- **Positioning**– Stand up straight. Do not arch your back. Eyes forward and chin up.
- **Walk**– You want to roll through your steps from heel to toe. Take small steps. Research shows that the same amount of calories are burned with long or small steps and that fewer injuries are reported when small steps were taken rather than large ones.
- **Starting out**– Warming up for 5-10 minutes can help decrease pain after a walk. Stretching post-walk will add flexibility and has been shown to aid in weight loss.
- **Pace**– Start out slow. Most trainers recommend starting out with a 10-15 minute walk for individuals who have been sedentary for a while. Work your speed up over a few weeks to prevent strain and injury.
- **Permission**– It's best to check with your physician before starting any new activity. Individuals with a history of diabetes, high blood pressure or heart disease should make sure to have

their activity monitored by their doctor.

- **Stop**– Sudden onset of chest pain, dizziness or feeling faint are reasons to abort any exercise. Contact your physician or call 911 if symptoms persist.
- **Enjoy**– You don't need to be “gasping” for breath to get the benefits from physical activity. Take time to clear your mind, deep breathe and de-stress.



WALK FOR A CAUSE

10th Annual Domestic Violence Fun Run/Walk
ONE VOICE
Saturday, October 11th, 7am
West Care Arizona
Bullhead City
(928) 763-1945



Komen Race for the Cure
(Breast Cancer)
Sunday, October 12th
Phoenix, AZ
For more info: (602) 544-2873



Arthritis Foundation Creep Walk
October 25th
Las Vegas, NV

Total Joint Implants: Magnets for bacteria? The need for antibiotics before certain procedures

Prior to certain procedures, a course of prophylactic antibiotics will be given for those individuals living with a total joint replacement. Dental work and bowel surgeries are among some common procedures that will likely warrant antibiotic pre-medication, due to the large amount of bacteria that live in the mouth and gut. Bacteria travel through the bloodstream and can easily attach to a prosthetic joint. Once the bacteria attaches to the implant it forms a glycocalyx

slime layer around the implant. The lack of blood supply to the implant and this slime layer make it difficult for the body's immune system to fight any infection. Current standards in the U.S. are that all individuals with a joint replacement in the last 2 years and the immunocompromised be treated prophylactically with a course of antibiotics. It is important to speak with your physician, surgeon and dentist to determine your susceptibility to infection, as treatment of

an infected prosthesis could mean lengthy antibiotic treatment and/or surgical intervention. In certain cases infection warrants removal of the implant.



The Hype behind Hydrocodone

Hydrocodone is the most frequently prescribed opiate in the U.S. with nearly 130 million prescriptions dispensed in 2006. It was first developed in the 1920's in Germany by the pharmaceutical company Knoll, now part of Abbott pharmaceuticals. The FDA approved Hydrocodone for use in the U.S. in March of 1943. Hydrocodone is a semi-synthetic opioid derived from codeine. Knoll pharmaceutical believed the compound would decrease side effects of stomach pain and nausea.

Upon studying the compound here in the U.S., researchers soon learned that Hydrocodone was effective for pain control but produced a feeling of euphoria, thereby making it highly addictive. In the early 1930's, one of the leading researchers for the U.S. National Research Council noted that Hydrocodone was a powerful

drug and had the ability to cause addiction without the person even being aware. Studies confirm that the drug is habit forming and individuals can become both physically and psychologically dependent on it.

All U.S. drug companies combine Hydrocodone with either Tylenol, Aspirin, Ibuprofen, or certain antihistamines. The combinations of these drugs with Hydrocodone increase the effect of pain control. Some believe that the addition of acetaminophen is to decrease the likelihood of abuse, as it can be highly toxic to the liver. There are hundreds of trade names of the different compounds of Hydrocodone. Some of the more popular formulations are: Lor-tab™, Vicodin™, Lorcet™, Hycodan™ and Tussionex™.

Hydrocodone, in combination therapy, is used as an analgesic for pain control and as an antitussive

or cough suppressant. Certain studies have shown Hydrocodone, in its pure form, to be stronger than or nearly equivalent to morphine for pain control.

To decrease the likelihood of dependence patients should follow package and physician instructions closely. Individuals taking Hydrocodone should not drive or drink alcohol, due to depression of the central nervous system. In 2005, Hydrocodone overdoses attributed to more than 50,000 emergency room visits. Despite its addiction potential, Hydrocodone remains an excellent cost-effective treatment for moderate and post-operative pain. To learn more visit nih.gov.



(Reference: NIH, Medline, Detox Center, DOJ)

One and Done: Tips to prolong the life of your Shoulder Replacement

The goal of total shoulder replacement is to reduce pain and increase quality of life. A prosthetic joint is not as strong and durable as a natural, healthy joint. Excessive physical activity and trauma can result in loosening, wear and fracture of the implant. Below are some precautions that individuals with shoulder implants should follow to prolong the life of their implant:

- Avoid repetitive heavy lifting
- Avoid “jamming” activities such as hammering
- Avoid boxing, tennis or handball

- Avoid lifting or pushing large, unstable and/or heavy objects
- Avoid chopping wood
- Avoid contact sports with major risks of fall like rugby or football
- Avoid lifting heavy weights or heavy resistance exercises
- Consult your physician before adding any new activity to your regimen to discuss potential adverse effects.
- Annual X-rays to monitor your implants position and wear

(References: Zimmer Orthopedics)



Painful Knee Arthritis to Increase Dramatically

In the United States one in five (46 million people) suffer from painful and debilitating arthritis and research shows that the number will likely rise to 67 million by the year 2030. A new government study suggests that nearly one in two people will develop knee osteoarthritis in their lifetime, with the highest risk among those who are obese.

The study, published in the September issue of Arthritis Care and Research, was conducted using data from the Thurston Arthritis Research Center along with the University of North Carolina. It is one of the largest studies conducted to monitor the onset and progression of knee and hip arthritis.

The study determined that there were no differences seen in the factors of race, sex or education. The

most alarming discovery was that nearly 2 in 3 people who are obese will develop knee osteoarthritis in their lifetime. Obesity is defined as someone whose body mass index is 30 or higher. Normal weight people were 35% likely to develop knee osteoarthritis compared with the obese at a staggering 65% due to the abnormally high loading forces on the knee joints.

Many individuals are unaware of the difficulties that face arthritis sufferers. Arthritis is the leading cause of disability and costs the economy more than \$128 billion annually. Osteoarthritis is the most common form of the more than 100 different types of arthritis. Knee osteoarthritis accounted for more than 496,000 hospital admissions in 2006 and raked up a staggering \$19

billion in hospital charges. Knee replacement surgery rose 65% in the last decade mostly related to increased sedentary lifestyles and the aging baby boomer population.

“Obesity is at an all time high, putting millions at risk for disabling arthritis,” according to Dr. Klippel, CEO of the Arthritis Foundation. Literature points out that losing 10-15 pounds can cut knee pain in half for current arthritis sufferers and losing as little as 10 pounds can cut your risk in half for developing the disease later in life. The CDC and the Arthritis Foundation urge individuals to learn about the disease and what they can do to decrease their risk of this debilitating disease.

(References: CDC, Arthritis Foundation, Zimmer, MSNBC)

Legg-Calvé-Perthes (LCP) Disease



Arthur T. Legg Jacques Calvé Georg C. Perthes

Legg-Calve-Perthes disease is a disease of the hip that afflicts approximately 1 in 1200 children. It was first discovered in the early 20th century following the invention of X-ray. Almost simultaneously Dr. Legg of Boston, Dr. Calve of France and Dr. Perthes of Germany documented the disease, hence the name Legg-Calve-Perthes. This disease is also called idiopathic avascular necrosis, LCP, or simply Perthes.

The disease is a form of osteonecrosis that only affects children. It is primarily seen in Caucasians and boys. Boys outnumber girls 4 to 1. The average age at diagnosis is 6 years old but can be seen in children as early as 2 years of age.

Children who are diagnosed with Perthes tend to be of shorter stature, thin, wiry and very active. Unfortunately no one knows for sure what causes Perthes disease but some researchers feel that the condition is related to abnormal clotting factors in the blood. Several studies suggest that maternal and secondhand smoke play a role in the development of the condition as well.

Perthes disease occurs when the blood flow to the femoral head

(ball) at the top of the thighbone is interrupted, causing death and collapse of the bone. As part of the normal healing process the body breaks down this dead bone before new bone is made. The absorption of this dead bone leads to structural weakness causing collapse and deformity. The whole process takes many years to complete.

The first symptom usually seen is a slight limp. Some children may exhibit pain in the groin or referred pain to the thigh and knee. Some cases of Perthes are diagnosed after the child has had an accident, such as a fall, when X-rays may be obtained. Other's seek treatment once the child complains of pain and exhibits a limp without having an accident or traumatic event.

The Pediatrician is often the one who first suspects the disease and a referral to a pediatric orthopedic surgeon is quickly made. Children usually develop premature degenerative arthritis and can lose movement in their hips if the condition is not monitored aggressively.

Unfortunately there is nothing parents or children can do to prevent the disease. The goals of treatment are to reduce pain, restore or maintain mobility and to prevent the hip from collapsing. Physicians use a classification system to determine the severity of the disease and prognosis. The prognosis is poor if greater than 50% of the ball or head of the fe-

mur is involved.

Typically children with Perthes disease are monitored for disease progression and stay under the care of a Physical Therapist. They work with the child to maintain good range of motion and mobility in the affected hip. Other forms of treatment involve crutches, traction, medication, activity modification and casting. Surgical treatment typically involves an osteotomy, or cutting of the bone. There are different types of osteotomies that can be performed at different stages of the disease. The goal of the surgical procedures are to help the ball or the femoral head stay positioned in the hip socket to prevent deformity which can occur as the disease progresses.

The hip affected by Perthes disease will not be a normal hip with many individuals developing degenerative arthritis before they turn 50. Although it can not be prevented, research continues to provide insight into this debilitating disease. Early diagnosis and treatment is paramount to long term mobility and pain control.

(References: Zimmer, NONF, CDC, Wikipedia, Seattle Children's Hospital, NIH)



Fallen and Can't Get Up? Tips to make Stumbles less likely

Most of us remember the television commercial where the lady yells out, "Help, I've fallen and I can't get up!" At times standing on your own two feet can be difficult, but add the normal changes of aging to the equation and it becomes that much more challenging. As we age, vision and hearing decline along with muscle control, reflexes and strength. Certain conditions such as heart disease and diabetes can amplify the aging process. Each year thousands of older Americans fall and break a bone. Here we will share some tips and advice on making you and your environment safer.

Increasing age and health problems are risk factors that make falls and fractures more likely. Addressing health concerns and making your environment safe are simple ways that you can protect yourself from a serious fall or broken bone.

There are numerous ways to make your home and surrounding environment safer. Listed below are some simple steps to help prevent a life-changing tumble.

- Talk with your physician about a bone density test. This test will help your physician identify and treat those who may be at risk for osteoporosis. Osteoporosis is a condition where the bones become thin and break easily. Each year, Osteoporosis contributes to 1.5 million fractures. Medications are available to help strengthen bones and make fractures less

likely.

- Exercise! By keeping your joints and ligaments flexible you improve muscle tone and become stronger.
- Annual vision and hearing tests.
- Talk with your pharmacist or physician about taking medications that cause dizziness at night or possibly changing to a medication with fewer side effects.
- Be Slow to Rise! Stand up slowly after sitting for prolonged periods or when waking up in the morning. Getting up quickly can cause low blood pressure, or hypotension, which can lead to dizziness or fainting.
- Use Assistive Devices such as a cane or walker to help you move around.
- Wear proper-fitting shoes with low heels and a wide base. Avoid bare-feet or wearing thong sandals or high heels as these make falls more likely.
- Never climb on furniture or counters to reach high objects. Place frequently used objects within reach.
- Train your little four-legged friend to stay in one place, like a dog bed or cat post, while you are walking to and from different areas to help prevent tripping over them.

- Illuminate! Make sure areas of your home are well lit, especially patios and garages. Don't let the "bump in the night" be you falling down on your way to the bathroom. Invest in affordable night lights to help illuminate your hallways, bedside and bathroom.
- Keep walkways clear of furniture and clutter.
- Keep a portable phone with you while in your home and take a cellular phone with you when you are outside. Talk with your friends and family to see if a home monitoring device might be a better option for you.
- Avoid small rugs and keep all electrical cords and wires out of sight.
- Install grab bars in your bathroom, near your toilet and inside your shower. Install handrails on both sides of steps leading into your home and inspect them often to make sure they are secure.
- Contact the US Consumer Product Safety Commission (800-638-8270) for a free copy of *Older Consumers Safety Checklist*, which will provide more information on things you can do to improve your surroundings. The National Institute on Aging (800-222-2225) has free information on Aging, Osteoporosis and Safety.

(References: National Institute on Aging, US Department of Health and Human Services, National Institutes of Health.)

Getting back in the Swing of Things:

Avid Golfer, Lorraine Anderson, shares her experience with Total Hip Replacement

Thirty years ago, Lorraine Anderson, 74, and her husband, Clive, made the move to the warm climate of Bullhead City from California. They have spent most of those years on the golf course at Chaparral Country Club or in the cool waters of the Colorado River. When she was unable to stand during her golf game she sought an answer right away. The verdict was advanced hip arthritis. Lorraine, a former registered nurse, who spent 22 years with the Los Angeles American Red Cross, understood the diagnosis and decided on joint replacement. "Years ago, I had back surgery which left me with little feeling in my right leg, for years I favored my left leg so I wasn't surprised that my hip was damaged by wear," Lorraine said.

Earlier this year, on April 29th, she was admitted for a left total hip replacement. She immediately was put at ease by WARMC anesthesiologist, Dr. Wood, whom she thinks could have a side career as a "stand up comic." He had her laughing and made it easy for her to forget that she was about to undergo a major surgery.

Once she was admitted to her room post-operatively she was informed that the nurse call light system was being upgraded. Initially this made her nervous just coming out of joint surgery and now relying on a small silver bell. "It was kind of interesting being given a little bell to call my nurse but they really surprised me with how quickly they answered. The whole staff was right there for me whenever I

needed them."

She reported mild to moderate discomfort at first but was able to sleep through the night. She recalled no problems with nausea or vomiting post operatively but did notice that she had a decreased appetite for several weeks after surgery. She had some initial bruising on her lower leg and some mild swelling that resolved on its own.

Due to other health issues, Lorraine spent a total of 3 nights in the hospital. Once cleared for discharge by her medical doctor she wasted no time learning how to manage her new prosthetic hip. "Initially I had some discomfort but nothing that a little Tylenol or Ibuprofen couldn't fix." She credits her husband of 50 years, whom she wed in a double ceremony in Las Vegas, for helping out while she was recovering. "He's big and strong so that made me feel safe." She was also thankful for those who helped both pre- and post-operatively around her home. Kay, an RN and neighbor, made herself available to answer questions and "assist" with the ever-cumbersome white compression stockings. Joint replacement patients usually wear these stockings for 6 weeks to decrease the risk of blood clots. Her longtime friend, Doug, whom she calls her "top-notch" handy man, installed a toilet riser, which she feels was "worth a million bucks" during her recovery.

Lorraine maneuvered around her home with a walker, dodging her 2 large furry canine friends, for two and a half weeks before switching

to a quad cane. She feels that she didn't need her cane as much for stability as for security.

Anxious to get her golf game going again she worked religiously on her exercises and therapy and spent a lot of time walking. "I don't like to sit very long anyway. I just need to be doing something and moving." Two months after her procedure she was walking with the occasional use of a cane and reported a dull ache on the outer area of her hip.

Lorraine recommends education about the procedure as a key to successful joint replacement. She and her husband attended an arthritis lecture and reviewed pre-operative education. She was thankful that she prepared her home pre-operatively by removing throw rugs and installing the toilet riser. Luckily for her husband, Clive, she can now "coach" him through his own recovery, as he recently underwent total knee replacement surgery.

We are sure this fun loving couple will be back on the course soon.



(Pictured Above: Lorraine and Clive Anderson, of Bullhead City, standing next to a total hip replacement model and hip diagram.)



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Dr. Robert Lock, II, of Tri State Orthopedic Institute, is a board certified Orthopedic Surgeon who has been practicing in Mohave County and the surrounding area for 13 years. A native of Tucson, he graduated from the University of Arizona with honors. He attended medical school in Texas and his internship in Phoenix. He completed his residency at Ohio University/ Grandview Hospital in Dayton, Ohio .

Choosing to further his orthopedic training he was accepted to a joint replacement fellowship at the Florida Orthopedic Institute in affiliation with the University of South Florida in Tampa. This additional year of training laid the foundation for his expertise in complex Joint Reconstruction Surgery.

Dr. Lock offers the latest, advanced treatment options available for individuals suffering with osteoarthritis. Specialty services include: Minimally Invasive, Fast Recovery Joint Replacement, Complicated Total Joint Revision, Computer-Assisted Surgery, Shoulder resurfacing and Replacement. Dr. Lock also offers the Zimmer Gender Knee for women as well as their High-Flexion implants to help safely accommodate deep knee bends.

Dr. Lock is currently the Chief of the Medical Staff at Western Arizona Regional Medical Center and a board member of Hualapai Mountain Medical Center. He is a member of the American Medical Association, the Arizona Osteopathic Association, the American Academy of Orthopedic Surgeons and the American Osteopathic Academy of Orthopedics. He was recently awarded the title of “Fellow of the AOA” for his outstanding commitment to orthopedic research and education.

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