Medical Advances to Keep Your Joints Active

Principles of Safe & Effective Exercise
Welcome to Scott Orthopedic Center. and the third issue of our annual magazine We have had a tradition of dedicating ourselves to the orthopedic care of Tri-state area residents for over 80 years. We have provided this service uninterrupted 24 hours a day 365 days a year. I would like to take this opportunity to introduce you to our orthopedic center in the 21st century.

We have strived to create an environment where we can provide compassionate, comprehensive, efficient, up-to-date treatment of simple and complex orthopedic disorders, both operative and nonoperative. We have done this by being innovative and first in many areas of orthopedic practice.

We are the first and currently only private practice orthopedic group in the Tri-state to function as a true orthopedic specialty group. We have invested time and resources into bringing the best orthopedic specialists we can possibly have to the area. All of our physicians have a specialty area of focus as well as training in general orthopedics. We have fellowship-trained orthopedic specialists (which is an additional year of highly focused study) in the areas of hand and upper extremity surgery, microsurgery, trauma, joint replacement, sports medicine, foot and ankle. What this means to you, the patient, is that you will be diagnosed and treated with the most up-to-date techniques available, practiced by doctors with the experience of hundreds for most orthopedic procedures.

We are the first orthopedic practice in the area to use diagnostic digital imaging x-ray technology. This means more accurate diagnosis, effortless access and secure, accurate preservation of data.

We are the first orthopedic practice in the area to incorporate a fully operational electronic medical record for all patients. This means we have accurate up to date information about our patients at our fingertips. We are extremely efficient at obtaining test results, scheduling tests, reviewing and communicating with our patients about all aspects of their care.

We are the first and only orthopedic group in the Tri-state and state of West Virginia to have established a specialty hospital. Three Gables Surgery Center does approximately 3,000 orthopedic procedures per year, both inpatient and outpatient, in the areas of hand surgery, elbow surgery, shoulder surgery, knee surgery and foot and ankle surgery. What the specialty hospital concept means to patients is efficient, expert care with surgical teams that do more of these procedures than most any hospital in the area.

We also have a unique specialty service which includes knee and hip replacement and reconstruction, acute trauma and reconstructive surgery with the Regional Orthopedic Center at St. Mary's Medical Center that does approximately 1,000 cases per year. The level of orthopedic expertise, efficiency and experience of the surgical teams at Three Gables Surgery Center and St. Mary's Medical Center allows us to do our best work.

Our biggest asset is the patients who trust us with their care. We will continue to return that trust every day with the best effort from all our staff. We will continue to innovate and bring the latest and the greatest proven treatments to our patients.

Welcome to Scott Orthopedic Center!

Sincerely

Luis E. Bolano, MD
On July 1, 1963 I rejoined my father, Francis A. Scott, M.D., in practice at the old professional building at 1139 4th Avenue. Dad said it was the best location in town, as it was right next to the bus station. Awaiting me were over 30 letters of congratulations from various physicians in Huntington and the surrounding area.

My first patient was a referral from Dr. Foster Carr, whose office was down the hall. Later that evening St. Mary’s Emergency called, and said that Dr. Bill Sadler from Barboursville had sent in a child with a deformed forearm fracture. Reduction of this fracture was my first case under anesthesia. In the ensuing years, it has been wonderful and eventful to say the least.
I practiced with my father for several years. His efforts were limited by rather severe, symptomatic heart disease from aortic stenosis and angina. It was my good fortune when Dr. Colin Craythorne finished as the first orthopedic resident at West Virginia University in 1966, and joined me in practice. We worked together for well over 30 years. During that time Dr. Craythorne became the first arthroscopist in the State of West Virginia, and was the team physician for the Marshall University football team for many of those years. Shortly after his return from a tour of duty in Vietnam, we moved our office from downtown to 1611 13th Avenue next to Cabell Huntington Hospital early in 1968. Our office was in the first multi suite professional building outside of the downtown area. During that time Dr. Craythorne and I provided orthopedic coverage at Logan General Hospital one day a week for several years.

The most difficult time in my professional life occurred in November 1970 when the plane carrying the Marshall Football Team, four physicians, and several of my other close friends, crashed without survivors. I was President of the Cabell County Medical Society at that time and was a pallbearer on multiple occasions the week following the crash. A pall lay over our community for months afterward.

As we became busier, Dr. Robert Lowe joined us in 1971. Now we are 40 years later and Dr. Lowe and I continue to provide orthopedic consultation in our office, and spend an occasional afternoon on the golf course together. It was during those years while Dr. Craythorne was using the arthroscope I began replacing arthritic hip joints with metallic ones. I was fortunate enough to obtain additional training in Total Joint Arthroplasty in Atlanta, Boston, and Mayo, and was one of the first to perform these procedures in West Virginia. Dr. Lowe was the first surgeon in southern West Virginia to correct spinal curvature in children, either by bracing or surgical correction.

In 1976 Dr. John Mullen from the Mayo Clinic joined us, adding his expertise in total joint replacement of both knees and hips. He worked with us for nearly 35 years.

1980 was an important year with the addition of Dr. Earl Foster from Iowa. Dr. Foster was the first orthopedist in this area to have fellowship training, i.e. an additional year of training in hand surgery. It was at this time the practice had grown to the point that a practice administrator was needed. Fortunately Mr. Garry Black joined us and helped guide the growth of the practice for the rest of the 20th Century. We had outgrown the 13th Ave. office, and moved to the Highlawn Medical Building next to St. Mary’s Hospital, where we have worked since that time. This was in 1980.

Shortly after returning to Huntington, I became a disciple of Dr. Al Esposito’s and labored long and hard to help develop the Marshall University Medical School. When it became a reality our group provided all the instruction in orthopedics for medical students and residents for nearly twenty years.

In the latter years, we were again fortunate to work with some excellent men including Dr. Dan Carr and Dr. Scott Riley. Dr. Carr had a strong interest in sports injuries, while Dr. Riley was an additional fellowship trained hand surgeon. In recent years we were joined by Dr. Luis Bolano, another Mayo Clinic trained surgeon, Dr. Vivek Neginhal, a total joint replacement
surgeon, and more recently Dr. Steve Lochow, a trauma specialist, as well as Dr. Kevin Brown, a podiatric surgeon and Dr. Stanley Tao, another sports medicine specialist.

During the past five decades our group published over twenty papers in medical journals and gave hundreds of lectures and presentations to physicians and other health care professionals.

Dr. Lovejoy joined us in the early 1990s. A few years later he took a sabbatical fellowship in pediatric orthopedics. Two years after that he was called to Vanderbilt Orthopedic Program and is now their head orthopedic surgeon.

In summary, I have been fortunate enough to surround myself with surgeons whose skill level exceeded mine.

The character of orthopedic practice has changed dramatically over this period of time. In the early years, Plaster of Paris was used exclusively for the fabrication of casts. This has been replaced by fiberglass casting, and a greater tendency to treat fractures with operative repair. Joint replacement and arthroscopic surgery have become a mainstay of the current practice. We no longer develop Kodak x-ray films, but rely on digital computer generated images for radiographic diagnosis. Our medical records used to be typewritten on 4 x 8 card files, while today all records are electronically generated and maintained.

Over the years we have had satellite offices or clinics in various parts of the tri-state area. These include Ashland and Paintsville, KY, Logan and Man, WV, Hurricane, WV, and now Ironton, OH.

Throughout the entire span of practice, however, we have maintained our interest in participation in clinics for the care of orthopedically handicapped children. Our home clinic has been held once a month here in Huntington for the entire 50 year period. I personally have staffed clinics throughout West Virginia at various times in Logan, Welch, Princeton, Bluefield, Hinton, Ronsford, Lewisburg, Beckley, Phillippi, Charleston, and Parkersburg. Care of children with orthopedic impairments have indeed been one of the more gratifying parts of my practice experience.

We have been blessed by the aid and support of a wonderful staff. At least five of the members of our staff have been with me for over 40 years. Many others have worked here for 25, 30, and 35 years.

A few months after I started in practice I attended my first meeting of the West Virginia Orthopedic Society at the Greenbrier Hotel in White Sulphur. About 15 of the 26 West Virginia members of the American Academy of Orthopedic Surgeons were in attendance at this meeting. I was greeted like a long lost son or the new pledge in a fraternity. As a group, the West Virginia Orthopedic Surgeons of that time were extremely supportive of me and not only gave me good advice but referred patients to me. Dr. Judd Pickett of Morgantown was particularly kind to me. At that time he was the chairman of the Orthopedic Department at the West Virginia University Medical School.

During my formative years of practice, there were several laymen who were again of great help and support to me. This included Mr. Bill Powers, a banker, who lent me the money to build the first office building; Mr. Leland Bunch, a realtor, who helped me obtain the property to build the building; Mr. Bill Richardson, an accountant, who taught me the basics of money management,
and finally Mr. Jack Reardon who gave me all around solid advice in the ways of the world. I was very fortunate to have these mentors, and remember them unto this day.

In spite of the tremendous changes in the nature of the practice and the expansion of services offered by the group, there has been one constant, i.e. the patients. We have continued to provide care for people of all ages and all walks of life, including their children, grandchildren, and even great grandchildren. I can say that I look forward every day to coming to work.

In the early years of practice, my father offered this bit of advice, “Tom, be kind to your patients and tell them the truth, and the rest will take care of itself.”

I hope to continue to offer some level of consultation, advice, and service as long as I am able.

Kyle R. Hegg, MD, Jack R. Steel, MD, Luis E. Bolano, MD, Stanley S. Tao, MD, Vivek S. Neginhal, MD, Steven C. Lochow, MD, Robert W. Lowe, MD, Thomas F. Scott, MD, and Kevin D. Brown, DPM are pleased to announce that

Adam J. Dann, DO
has joined Scott Orthopedic Center.

Dr. Dann is an orthopedic and hand surgeon, receiving his medical degree from the New York College of Osteopathic Medicine. He completed an orthopedic surgery residency at Des Peres Hospital in Saint Louis, Missouri and is fellowship trained in hand and upper extremity surgery from Grandview Medical Center in Dayton, Ohio. He specializes in the surgical treatment of disorders involving the shoulder, elbow, wrist and hand. Dr. Dann is a member of the American Academy of Orthopedic Surgery, the American Osteopathic Academy of Orthopedics, and the American Society for Surgery of the Hand.

He is married to Tammy L. Dann, DO, who is a Pain Management Physician practicing with David Caraway, MD.

Dr. Dann brings the newest techniques in Hand and Upper Extremity and will compliment the full range of orthopedic services our facility provides to the Tri-state.

For more information about our services, facilities or to meet Dr. Dann, please contact us at (304) 525-6905. Visit our website at www.scottorthopedic.com
In the past 20 years, sports injuries in pediatric and adolescent athletes have dramatically increased. About 38 million young athletes participate in organized sports annually in the United States. Of these, nearly 2 million high school students and almost twice as many athletes 14 years and younger are treated for a sports-related injury each year. This has been thought to be due to a surge in participants, emphasis on year round competition, single-sport concentration and more intense training.

Injuries to the anterior cruciate ligament (ACL) were once thought to be rare injuries in pediatric patients. This however is not the case and the incidence of mid-substance tears and bony avulsions has increased considerably in recent years. In a recent study of high school athletes, female soccer players were found to have the highest rate of ACL injury followed by male football players.

Management of ACL injuries in the skeletally immature (not done growing) athlete is challenging. In the past, reconstruction by placing “bony” tunnels was avoided in younger patients because of the risk of damaging the cartilage that causes the bone to grow. Past treatment options have included activity modification and bracing until the onset of skeletal maturity (stopped growing) to do the traditional surgery. Recent studies show this leads to recurrent instability and a high incidence of damage to other structures in the knee. This is however a good option for a partial tear with no clinical evidence of instability on examination in the office.

Recent data suggests complete ACL ruptures should be managed surgically even in the very young patient. Skeletal bone age is one of the most important parameters in determining what surgery is to be done as patients mature at different levels and times. Prepubescent patients are a bone age of less than 12 years for boys and 11 years for girls. A bone age above this is considered adolescent. Adolescent patients can be treated with a traditional reconstruction with bone tunnels and a soft tissue graft. It is important to use smaller more vertical tunnels than normal with fixation away from the growth plate. If the growth plate is closing, an “anatomic” adult-type reconstruction may be done.

Newer procedures have been developed for the prepubescent patient with a complete ACL rupture. Most agree a growth plate sparing procedure is the best technique. The tunnels that are made do not violate the growth plate at all. Results are superior to non-operative treatment.

Another issue is graft selection. Controversy exists with the use of autograft (patients own tissue) versus allograft (donated tissue). In a recent study, patients between 10 and 19 years of age were found to have the highest percentage of graft failures regardless of type. More importantly, the odds of graft rupture were four times higher with allograft reconstruction than with autograft reconstruction. For this reason, autograft should be the graft of choice in this patient population.

Another frequent topic that comes up is what to do with an athlete with a first time shoulder dislocation. Shoulder dislocation and subluxation are common in young athletes. Controversy exists regarding optimal treatment of these injuries.

The young male athlete is at greatest risk of sustaining a shoulder instability injury. The highest rates are in contact sports such as football, wrestling and hockey. A traumatic dislocation has
a high incidence of tearing the labrum which is a ring of tissue that provides stability to the socket of the shoulder. This is called a Bankart lesion. This lesion can predispose the shoulder to redislocating and is documented with an MRI. It is also important to rule out any bony injury with a dislocation. Studies show that the risk of re-dislocation depends primarily on the patient’s age and activity level. Recently a study showed a recurrence rate of 27% in patients older than 30 and 72% in those younger than 23. Another study showed a recurrence rate of 87% in patients aged 15 to 20 years. One study showed shoulder arthritis occurred in up to 40% of patients with recurrent instability increasing with the number of dislocation events.

Nonsurgical treatment includes brief immobilization (3-10 days) with early rehabilitation and potential bracing. Return to play criteria typically includes symmetric pain free range of motion and strength, ability to perform sport specific drills and a normal stability examination. It is important to emphasize the relatively high risk of recurrence even if these parameters are met. Recurrent instability appears to produce more frequent and severe soft-tissue and bone pathology.

The decision to pursue surgical stabilization depends on many factors. Traditionally, failure of non-operative treatment (recurrent injury), bone loss greater than 25%, irreducible dislocation, associated rotator cuff injury or inability to resume normal activity were reasons to pursue surgery. Surgery generally is directed to repairing the torn capsulolabral complex to its anatomic position and addressing co-existing lesions. This can usually be done as an outpatient surgery either arthroscopic (with a camera) or a small open incision with success rates in the nineties. Return to full activity/sports is a six month recovery. A recent study that compared Bankart repair in a first time dislocator to either sling or arthroscopic lavage (cleaning out joint) showed that Bankart repair was superior. Given high re-injury rates in the younger patient with a traumatic dislocation, surgical intervention is a reasonable option to prevent future damage with a recurrent injury as well as potentially preventing future arthritis.
Present day life has become more demanding, as we are all working harder and longer
than ever before. Such High demand may lead to early wear and tear on the Hip and
Knee joints. this has stimulated several advances in fields of joint replacement, which
benefit both younger generation and baby boomers. In this issue I will highlight on the
procedure which has been successfully introduced in recent times - namely signature
Oxford Partial knee replacement.
Personalized Total Knee Replacement

Custom fit/ personalized knee was a major milestone in the history of joint replacements. New technology inherently brings controversies. There were many in the field very reluctant to embrace the new technology, called it as a passing fad. But it is now widely used and accepted all over the world because of its better accuracy. We are proud to say that St. Mary’s Joint Center was the first to introduce this technology in the state of West Virginia in 2008. The technique as of 2013 has been refined even further producing excellent results and making the procedure user friendly.

Personalized/Sigature, Partial Knee Replacement

Now this revolutionary technology of MRI navigated, personalized system has been made available in partial knee as well. Every individual is unique, so the solution should be unique too. Before this technology most surgeons made plans using two dimensional x-rays. Using MRI and computers, far more details are obtained. With this fascinating technology surgeons have better capability of planning, better accuracy and also enhanced the surgical efficiency.

To understand this procedure it would be useful to know what the knee joint consists of. Anatomically, the knee has three compartments. Patients can develop arthritis in any one of the compartments which can be exclusively replaced. This is called a partial knee replacement. The goal of this surgery is to get the patient to recover as fast and as functional as possible. The patients who qualify for this surgery do not have to quit their job or take a long term leave or wait till they get older, or till they retire. Some patients specifically put off their surgery due to inability to get off from their work for a long duration of time. There is no extensive physical therapy needed as in Total Knee Replacement. But the arthritis when left alone for long time will progress to the other compartments in the knee which will only aggravate the situation and causes deterioration. Ultimately when they decide, they may not be candidates for partial knee replacement. It would be beneficial for the patient to get the treatment before it starts to spread. There is reasonable window of time is available where the knee is still amenable for partial knee replacement.

Not everybody is a candidate for partial knee replacement. Orthopedic surgeon with expertise in this procedure will be able to tell the patient if partial knee would be a good option. Once it is decided that the patient is a candidate, next question is which kind to choose. Two broad kinds of partial knees are available one is fixed bearing e.g. like the one used for past 20 yrs. and in robotic surgery called makoplasty and Second one is the mobile bearing. Then the decision is to be made what technique is being used to implant it. This can be done with basic investigation like x-rays and is implanted with mechanical instrumentation. Or can be done with this latest technology where patient gets MRI of the whole lower limb. The special software calculates the limb axis and various other parameters in 3D. Then preliminary information is sent via internet to the operating surgeon. The surgeon then looks at the 3D models then decides where he wants to make bone cuts. The info is sent back to the manufacturer for creating a custom fit Jig. This is almost akin to operating on the patient on the drawing board even before making any incision! The jigs are made and sent to the hospital just before the surgery. These jigs are then sterilized and used during the surgery to make precise cuts. The jig comes with the recommendation of the size of implants to be used and level of the cuts to be made. Personally I have been using this for past five years in TKR; it has come to be very accurate. These jigs can be only used once because it is patient specific. This kind of technology prevents invasion into the marrow and provides more accuracy.

Myths in Partial Knee Replacements

Whenever there is a new procedure, people have lot of misconception about it. For e.g. that you are too old/young to be operated on or too obese to be operated on. Obesity up to certain extent may not be very ideal for partial just like total but is not an absolute contraindication. It has been reported to have successfully been done with body mass index of up to 48. Similar to a Total Knee Replacement it is always better to make an attempt to lose weight and be done between ages of 40 to
85. The other very common myth is that a Partial Knee Replacement is a stop gap surgery and ultimately needs to be converted to a Total Knee Replacement, this is not necessarily true! The Total Knee Replacement has a small percentage of patients that may have to undergo revision surgery. This may also be so for the partial knee replacement as well, but it is not a rule. After the tremendous success with this procedure, the manufactures of this implant came out, recently with LIFE TIME warranty! This kind of proposal is unheard of in the medical industry.

With the personalized partial knee replacement the following claims are being made

- Better range of motion
- Removes 75% less bone and cartilage compared to TKR (Total Knee Replacement)
- Better functionality and more natural motion than TKR
- Faster recovery and shorter hospital stay than TKR
- Substantial cost savings over TKR
- Fewer and less severe complications including fewer infections and less morbidity compared with TKRs
- Accurate up to several tenths of millimeter. This precision is hard to match with conventional technique even in the best of hands

**MAKoplasty**

Partial knee replacement is a more demanding surgery than a total knee replacement. It comes the robotic technology called makoplasty. This is a type of partial knee replacement which is done if the surgeon needs robotic assistance to perform this surgery. Unfortunately,
this kind of partial knee replacement does not give the option of a mobile bearing partial knee which is more natural.

**VERILAST KNEE THIRTY YEAR KNEE**

Preferably Total Knee replacement should be the last resort when all the conservative lines of treatment fail. A growing number of our population is in need of knee replacements at a younger age than previous generations. Obesity/Overuse could be the reasons; however, the option of knee replacement cannot be treated lightly. The scientific literature indicates that artificial knees generally have up to 94% survivorship at 15 years. We postpone this inevitable option because of concerns regarding durability. To address this situation years of significant research have gone into developing a durable implant. There has been a notable breakthrough recently with the thirty year knee, which has caused a stir in the joint replacement field.

This development has the potential to change the way we think about artificial joints. There is pervasive hesitation not just among patients, but also among doctors to consider joint replacements even when the joint is extremely deteriorated. This stems from the old school of thought when joint replacement was a fledgling field and implants were not durable. The recommendation was to do joint replacement only when you retire or at the very end of life. Unfortunately, the severity of the joint deterioration was not the prime consideration. This meant that the patients were not rescued from their misery when they required it most, i.e. during their most productive period. Having said that joint replacement surgery should still be a last resort and the controversy of when is the right time still continues. A balanced decision from both the patients and the surgeon is very important.

**ANTEROIR HIPS – MINIMALLY INVASIVE**

*It has made its mark!!*

In a matter of few years 20% of all the Total hip replacements done in the country are done through this approach. The tremendous popularity is probably due to its tissue sparing approach, less pain, faster recovery and improved mobility. Some patients are walking with no crutches/walker in the first or second week post-op and returning to work earlier than ever. Precautions like - avoid crossing legs, pillows between legs, no bending beyond 90 degrees are required in the commonly used posterior approach, but are not needed for the anterior approach. More surgeons have begun to embrace this technique, and it appears it is here to stay. We are proud to say that the joint surgeons at Scott Orthopedic Center have the largest combined volume of Anterior Total Hips done in the region. The prediction would be more and more surgeons are going to be trained in this technique which will benefit the patient to get back to their activities quicker and also reduce health care costs.

Our goal as surgeons at Scott Orthopedic Center and St. Mary’s Regional Joint Replacement Center is to bring to the community the very latest technology, so that the patients don’t feel helpless and have to leave the area in search of the higher centers to get the same caliber treatment. They can get treatment close to home and go back to being productive member of the society.

**MOBILITY IS ESSENCE OF LIFE!!**
A hip fracture can be a life changing event and is one of the most common ailments treated by an orthopedic surgeon. Hip fractures typically require surgical repair followed by a period of healing and rehabilitation. Over the years, the treatment methods and rehabilitation protocols have been improved to benefit the healing process. In 2012, Scott Orthopedics and St. Mary’s Medical Center teamed up to create the St. Mary’s Regional Hip Fracture Center. St. Mary’s already had a five star rating from Healthgrades for hip fracture care and the collaboration was formed to improve care even further.

The hip joint is one of the largest weight bearing joints in the body and consists of a ball (femoral head) and socket (acetabulum). Most fractures occur in one of two places: The neck region (connects the head to the femur) or the intertrochanteric region (connects the neck to the top of the femur). The type of surgery depends on where the fracture occurs. The main goal of any hip fracture surgery is to make the hip stable enough so the patient can bear weight and mobilize immediately in an attempt to avoid complications. Newer techniques used in surgery increase the ability of the surgeon to allow weight bearing immediately.

A femoral neck fracture may be non-displaced (thought of as a crack in the bone that is not out of place) or displaced. The blood supply for the femoral head goes through the femoral neck and typically is not disrupted in a non-displaced fracture. Non-displaced fractures are commonly treated with 3 screws to prevent the fracture from displacing as the patient is encouraged to walk. For displaced fractures, the blood supply to the head is disrupted and the chances that the fracture will not heal or the femoral head will die are rather high. Therefore, displaced neck fractures are usually treated with some type of replacement. The replacement traditionally has been a hemi-arthroplasty, or “partial hip replacement”. In a hemi-arthroplasty, the head is replaced but the socket is left alone. In recent years, more complete hip replacements (ball and socket) have been done for femoral neck fractures. Additionally, St. Mary’s and Scott Orthopedics’ expertise in Anterior Hip Replacements (a new muscle sparing approach to the hip) have been applied to the treatment of femoral neck fractures by allowing the replacements to be done through an anterior approach. This has resulted in less pain and faster recovery in some patients.

An intertrochanteric fracture has great healing potential as the blood supply to this region is very good. The technique used to fix this fracture depends on the stability of the fracture as well as the preference of the surgeon. Either a plate and screws or a rod may be used to fix these fractures. Again, the goal is the same and that is to reduce pain and to allow the patient to get out of bed immediately.
A successful hip fracture program requires a large team of people including physicians, nurses, physical and occupational therapists, social workers and many others. St. Mary’s Regional Fracture Center has put this team in place to improve patient care. Improvements have already been seen in many areas. One particular area of improvement is the time it takes for a patient to go from the emergency room to the operating room to have their hip fixed. Minimizing the amount of time a patient lies in bed is important to prevent complications such as pneumonia and bed sores. The goal at St. Mary’s is less than 24 hours and great strides have been made to achieve this. Improvements have also been made in reducing the time a patient needs to spend in the hospital. Also Calcium and Vitamin D levels are now routinely checked and corrected as necessary.

Even though a hip fracture may be a life changing event, St. Mary’s and Scott Orthopedics are working together to lessen the effect on the patient and their families. St. Mary’s Regional Hip Fracture Center provides timely, compassionate faith based high quality care to patients. The goal is to offer rapid diagnosis, early intervention, prevention of complications and prevention of second injury. This is accomplished through a multidisciplinary, comprehensive approach to care including evidence-based management and patient education.
One of the most effective medical interventions of all time is joint replacement or joint arthroplasty. The tremendous improvement in chronic pain and improvement of function to the individual patient has been studied and documented thoroughly. After many years of experimentation and development, hip replacement became realistic in the mid to late 60s. Knee replacements became effective in the early 70s. Hundreds of thousands of people who underwent these procedures had their lives changed for the better.

In spite of this effectiveness, early joint replacement had a number of problems that limited their long term success. There were early problems with both surgical techniques and the materials used to manufacture the components that were implanted into the patients. Surgical techniques were continually developed and improved. Instrumentation used to implant the devices were developed and improved. This led to better implantation of the devices and improved clinical success and longevity of the procedure.

At least as significant as all of the development of surgical techniques and instrumentation, was the constant development and improvements in the manufacture of the components. Early hip replacements used stainless steel which was widely and successfully used for fracture implants. Stainless steel is relatively brittle and would sometimes fatigue fracture from ongoing loading and use. Other alloys were developed that were much more appropriate for joint replacement procedures. The two main alloys used today are titanium alloy and an alloy of cobalt-chrome. They both work well with bone and have good fatigue resistance.

The biggest modern improvement to the longevity of hip and knee arthroplasties has been improvement in the bearing materials used. A hip or knee replacement is basically a replacement of your worn out bearings in your hip or knee. The very early hip procedures used nylon which was not durable. Eventually ultra high molecular weight polyethylene (UHMWPE) was found to be best. It is still used. Modern UHMWPE, or poly, is far better and longer lasting than when used 30 years ago due to ongoing development of manufacturing techniques. Modern poly has a reasonable chance of lasting 20 years or more in modern hip and knee replacements.

The bearing surface that articulates against the poly part of the bearing is generally metal, made of cobalt-chrome. Metal is durable, smooth, and straightforward to manufacture. Metal on poly bearings do slowly wear. This can cause eventual failure of the arthroplasty. The microscopic pieces of plastic debris can also cause a response by the body's immune system and can lead to loosening of the device.
In attempts to decrease these problems, other bearings were tried. Metal on metal bearings in hips had good longevity but still generated small particles of debris. These particles of cobalt and chromium have potential for causing problems such as tumor formation, both benign and malignant. The metal particles are also potentially neurotoxic.

Ceramic bearings have a long history of use in industry. Ceramics were tried on hip components starting in the 70s. Initially they did poorer than conventional bearings. Ongoing development improved them significantly. Ceramics have several big advantages over metal. They can be made smoother than metal, a good feature in a bearing surface. They are also somewhat porous and can use joint fluid as a lubricant, a great feature for bearings. When compared with metal, ceramic bearings against poly bearings result in significantly less wear of the poly, making them last longer.

The down sides to ceramic bearings are increased cost, a small potential for fracture, and the fact that so far it is not available for knee replacement surgery.

The potential for fracture, like any ceramic substance, is real. The current ceramic femoral heads, which are largely made by two companies, have a fracture rate of about 1/10 of 1%. They are quite rare but, if it occurs, a sudden revision is required.

The complex shape of knee components are still a problem for ceramics since the varied loads involved increase the risk of fracture. They are being developed however.

My current recommendation for ceramic total hip components is that most anyone under roughly 70 years of age should consider a ceramic on poly total hip replacement. They have the potential to significantly increase the longevity of your hip replacement.
The clinical team of Scott Orthopedic Center brings advanced diagnostic and surgical techniques, compassionate care and a dedication to achieve the best possible outcome for every patient.
LUIS E. BOLANO, M.D.
He is a board certified orthopedic and hand surgeon, received his medical degree from Baylor College of Medicine. He completed a general surgical internship and orthopedic residency programs at University of Oklahoma Health Sciences Center and is fellowship trained in hand/upper extremity /microsurgery from The Hand Center of San Antonio. Special interest include reconstructive/trauma surgery of the shoulder, elbow, wrist and hand. Dr. Bolano is a member of the American Academy of Orthopedic Surgery and American Society for Surgery of the Hand and is Board certified in Orthopedics with Specialty Board in Hand Surgery.

KYLE R. HEGG, M.D.
He is a board certified orthopedic surgeon, earned his medical degree from the Mayo Medical School and completed both his general and orthopedic surgery residency programs at the Mayo Graduate School of Medicine. Dr. Hegg has extensive experience in both knee and hip total joint replacements procedures and also specializes in arthroscopy, sports medicine. He is a member of the Arthroscopy Association of North America (AANA), a professional medical association comprised of a select group of orthopedic surgeons who have completed post-graduate training in the use of the Arthroscope.

JACK R. STEEL, M.D.
He is a board certified orthopedic surgeon, received his medical degree from West Virginia University School of Medicine and completed his post-graduate orthopedic residency program at the West Virginia Department of Orthopedics. Dr. Steel’s areas of specialization are sports medicine, arthroscopic surgeries and general orthopedic procedures. He is a member of the Arthroscopy Association of North America (AANA), and has practiced at Scott Orthopedic Center since 1988.

STANLEY S. TAO, M.D.
He is a board certified orthopedic surgeon, earned his medical degree from Case Western Reserve University School of Medicine. He completed both internship and residency programs in Orthopaedic Surgery at the Medical College of Ohio and a Sports Medicine and Arthroscopy Fellowship at Orthopaedic Research of Virginia. He has obtained a certificate of added qualification in Sports Medicine. Named annually since 2002 as an American Top Surgeon, Dr. Tao specializes in the areas of sports medicine and arthroscopic joint surgeries. He also serves as a team physician for local high schools and is an orthopedic consultant for Shawnee State University.

VIVEK S. NEGINHAL, M.D.
He is fellowship trained in total joint replacement at Lenox Hill Hospital, Cornell University, NY, with emphasis on surgical arthritis and uncommon primary joint replacements and at the University of Chicago Hospital with emphasis on minimally invasive techniques and adult reconstruction surgeries of hip and knee. Additionally, he underwent Traumatology training at Baylor College of Medicine, TX. In addition to general orthopedic care, Dr. Neginhal specializes in the following services, partial knee replacement, personalized knee replacement with MRI Knee, Computer Navigated Knee replacement, Anterior Hip Replacement and Birmingham Hip Resurfacing for the younger generation.

www.scottorthopedic.com
STEVEN C. LOCHOW, M.D.
He is a board certified orthopedic surgeon, received his medical degree from Marshall University School of Medicine. He completed an orthopedic residency in Greenville, South Carolina. He completed a trauma fellowship at Duke University Medical Center where he trained to perform Anterior Hip Replacement. His special areas of treatment include pediatric, adult, and geriatric fractures. He also specializes in hip replacement including the anterior approach and is certified to perform Birmingham Hip Resurfacing. Dr. Lochow is a selected member of the AO North American Trauma Faculty where he has the responsibility of traveling nationally to teach other physicians and staff about fracture care.

KEVIN D. BROWN, D.P.M.
He earned his podiatric degree from Temple University School of Podiatric Medicine. He is board certified in reconstructive foot and ankle surgery. He completed a 36 month residency in Reconstructive Foot and Ankle Surgery from the Kentucky Podiatric Residency Program, which is affiliated with the University of Louisville and Norton Community Hospital System. Dr. Brown joined Scott Orthopedic Center in 2007. From 2005 - 2007 he was in private practice in Louisville, KY. Dr. Brown has been named as one of “America’s Top Podiatrists” by the Consumers’ Research Council of America and is a Diplomate of the American College of Foot and Ankle Surgeons (ACFAS).

DR. ADAM DANN, DO
Board-eligible Orthopedic Surgeon Clinical specialties: Orthopedics for the Shoulder, Elbow, Wrist, and Hand Adam Dann, DO, is a board-eligible orthopedic surgeon. As a graduate of New York College of Osteopathic Medicine, he completed his residency in orthopedic surgery at Des Peres Hospital in St. Louis, Missouri and a fellowship in hand and upper extremity surgery at Grandview Medical Center in Dayton, Ohio. Dr. Dann is a member of a variety of respected medical organizations including the AAOS and the American Society for Surgery of the Hand.

Our Part-Time Consultants

THOMAS F. SCOTT, M.D.
He is a board certified orthopedic surgeon and former managing partner of Scott Orthopedic Center, is available for consultations of adult and pediatric orthopedic cases. Dr. Scott serves as an orthopedic consultant to Albert Schweitzer, des Chapellis, Haiti, the Shriners Crippled Children’s Hospital, Lexington, Kentucky, and as association director, for the West Virginia Handicapped Children’s Commission. He is a long-standing and distinguished member of the Tri-state medical community.

ROBERT W. LOWE, M.D.
He is a board certified orthopedic surgeon, earned his doctor of medicine degree from Vanderbilt University and completed his internship, general surgical residency and residency in orthopedic surgery, at the Vanderbilt Medical Center. A member of Scott Orthopedic Center since 1971, he specializes in spine disorders and non-operative orthopedics, as well as medical evaluations. Dr. Lowe has been named to the “Best Doctors in America” list, a prestigious, peer selected honor.
MICHAEL P. RIDDLE, P.A.-C.

He is a board certified physician assistant. He holds undergraduate degrees in Respiratory Therapy, Medical Science and a Master's Degree in Physician Studies from Alderson-Broaddus College. He joined Scott Orthopedic Center in 2005 and has previous orthopedic experience from 2004 – 2005 at the Orthopedic and Spine Institute, Williamson, West Virginia. His primary focus is in the clinical setting and total joint replacement. He is a team member of the St. Mary’s Regional Joint Replacement Center.
Services

In addition to comprehensive orthopedic care, our special areas of treatment include:

Senior Care
The orthopedic care of our senior population is an integral aspect of our practice’s mission. Our physicians offer the latest technology and experience in diagnosing and managing degenerative joint disease such as arthritis.

Joint Replacement Center: Since 2008, we have partnered with the St. Mary’s Regional Joint Replacement Center, which is the first in West Virginia and the Tri-State to earn the distinction of Gold Seal of Approval from the Joint Commission. We offer comprehensive surgeries and provide advanced care in hip and knee joint replacement and reconstruction.

We sponsor and participate in community programs that educate our seniors on how to lead healthier, more comfortable and active lives, as well as emphasize effective strategies for managing osteoarthritis, rheumatoid arthritis, osteoporosis and fractures.

Hand and Upper Extremity
Hand surgery is a subspecialty of the practice. As surgical techniques in the upper extremity have become more refined and complex, specialized training is an asset to our group. Our hand surgeons are fellowship trained and have specialty board certification in the treatment of hand and upper extremity disorders. We offer a Walk-In Hand Clinic on Monday, Wednesday and Thursday mornings at 7:30 a.m. to expedite care for patients referred by local physicians and hospital emergency rooms.

Sports Medicine
High School Sports Medicine Outreach Program: This program was designed to provide high quality medical care to participating schools and may help decrease the time students and parents miss from school and work. Scott Orthopedic Center provides an N.A.T.A., Certified Athletic Trainer (ATC) to the school on a weekly basis to assess any injured student athletes.

Quick Access Program: This program provides high quality, expedient medical care to our area high school and college athletes. High school/college certified Athletic trainers and coaches are able to have their injured athletes seen by one of our nationally recognized sports physicians and/or physician assistants within 48 hours of contacting our office.

Sports Injury Walk-In Clinic: This walk-in Clinic is on Monday evenings at 5:00 p.m. No appointment or referral needed. At our clinic, quality care is provided year round by one of our sports medicine physicians and support staff.

Sports Medicine Hall of Fame: Scott Orthopedic Center has worked with Marshall University’s Athletic Department for many years. Many physicians have been enshrined in the Marshall University Sports Medicine Hall of Fame.

Foot and Ankle Care
We are committed to providing excellent, comprehensive foot and ankle care. With our knowledge of the latest information and technology, we are committed to your care. Many problems can be solved with conservative management. However when surgery is necessary, our specialists offer the most advanced reconstructive techniques. To expedite care, a walk-in clinic is available Mondays and Wednesdays at 7:30 a.m. No appointment necessary, but a referral is needed.
A new Generation of Sports Stars

Rethinking Sports Role Models

A sport is bigger than just one player. A sport is about its history, the hall of famers, the big moments and the champions. Sports, and the teams, are made up of a collection of people that strive for wins and championships. However, every once in a while, a sport needs their "star."

The NBA needed Michael Jordan. The PGA needed Tiger Woods. Sports needed Derek Jeter, Lebron James, Pele, Secretariat, and Ali. What is common amongst the as for mentioned players? They were stars from the beginning. It is almost like they were born in front of the cameras, with wonderful smiles and even more spectacular athleticism. These stars were SUPPOSED to be stars. Tiger was putting as a two year old on the Bob Hope show. James was a freak athlete in high school and single handedly forced ESPN to begin televising high school basketball games. Ali begged the media to pay attention, and Secretariat was always the super horse.

That brings us to now. In the last few years there have been many role models in sports but none compare to Tim Tebow and Jeremy Lin. That's right. Tebow. Lin. I can't think of two players who have faced more obstacles and remained humble with their success. Can you?

Tebow ignited the NFL with his late season and late game heroics. He was outcasted and outnumbered. He was not supposed to be a college quarterback. Instead he went ahead and started for the nation's number one team, the Florida Gators, and won two championships. He was not supposed to be the game's best player. Instead he decided to go ahead and win the Heisman trophy… as a sophomore. He was not supposed to be a first round NFL draft pick. He was drafted 25th overall to the Denver Broncos. He was not supposed to be an NFL quarterback. He lead a team falling to shambles (1-4 when he became starter) into the playoffs in 2011. What else did he do? Two time SEC Champion. Two time First Team All American. Three time first-team All SEC. AP Player of the Year. Davey O'Brien Award. Two time Maxwell Award. NCAA QB of the year. Manning Award. William V. Campbell Trophy, etc., etc. At the end of his college career, Tebow held 5 NCAA, 14 Southeastern Conference, and 28 University of Florida statistical records. He was the SEC's all-time leader in career passing efficiency (176.0), completion percentage (67.1%), passing touchdown to interception ratio (5.5 to 1), rushing yards by a quarterback (2947), rushing touchdowns by players at any position (57), and total touchdowns responsible for (145). He also ranked second in career passing efficiency and third in career yards per attempt (9.33) in NCAA history.

I know what you are thinking… With those type of college statistics, why was he not a "star" like Jordan, and Woods? Let me put it this way: Because he is different. He is not your prototypical quarterback. His NFL statistics are less than impressive. He had the lowest completion percentage, td-int ratio and statistically was THE WORST quarterback in the NFL from quarters 1-3. In fact, he is the most scrutinized player in the NFL. Before being drafted, NFL analyst Mel Kiper Jr. believed Tebow did not have the intangibles to play quarterback in the NFL. "I don't think he can be a fulltime quarterback. I don't think he can be the quarterback of the future for you." He was not the only one. How did Tebow respond? "I just have a passion to play football. When you do things different than other people sometimes do them, and you don't settle for just being average, you open yourself up for criticism. But, I'm ready for it. I've learned to live with it. I never just wanted to do things the same way everybody else does."

Umm… Wow.
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It is refreshing to have a player rely on sheer determination and will to win ball games. What is more refreshing? Tebow gives all the credit during the press conferences to his teammates and his Lord. His faith pushes him, as he is constantly seen on the sideline down on one knee and praying after throwing a touchdown pass. And he is CRITICIZED for it? We should be PRAISING him for it. I mean, seriously? How dare he ruin the minds of our youth with his compassion, faith, team first attitude, and selflessness. How dare he continue to waste our minds with his winning spirit on and off the field, his heroic late game victories, and his constant charitable donations and personal time. Tebow may not be the prototypical star, but he is the star the NFL needs.

Now on to the latest flavor. I will be the first to admit that in 2012 I caught a case of Lin-sanity. Everybody who enjoys sports should have the same fever or they do not get to be called a sports fan. To say that he was expected to be a star would be one of the understatements of the century. The first time Lin went to a Pro-Am game in Kezar Pavilion in San Francisco someone there informed him: “Sorry, sir, there’s no volleyball here tonight. It’s basketball.” Lin was not recruited out of high school. When I say not recruited, I mean not AT ALL. Lin received ZERO athletic scholarships. That’s right... Zero. The new NBA All Star, tabloid baby, savior of the biggest stage in sports, New York City went to Harvard... for Academics. Even then, he was not even offered a guaranteed spot on the team. Bill Holden, a former assistant coach at Harvard, was not initially impressed with Lin, and told Lin’s high school basketball coach, that Lin was a “Division III player.”

Lin’s time at Harvard was very impressive. In the 2008–2009 season, he was the only NCAA Division I men’s basketball player who ranked in the top ten in his conference for scoring (17.8), rebounding (5.5), assists (4.3), steals (2.4), blocked shots (0.6), field goal percentage (0.502), free throw percentage (0.744), and three-point shot percentage (0.400). He led Harvard to more wins, home wins, road wins and non-conference wins in his senior season. He led Harvard to a win over then ranked 17 Boston College, and close games against highly ranked UCONN, in which UCONN coach, Jim Calhoun, labeled Lin “Just as good as any player that came to their building.” By the end of his career, Lin had become the first player in the history of the Ivy League to record at least 1,450 points (1,483), 450 rebounds (487), 400 assists (406) and 200 steals (225). However, those numbers were not enough to get Lin drafted in the 2010 NBA draft.

Lin was picked up on a small contract to play for the Golden State Warriors. Being one of the few Asian Americans to ever play in the NBA, he was popular to the fans, but not the coaches.

Three times during his first season with the Warriors, he was demoted to the NBA Developmental league. Lin began to question his own abilities. But how could he not.
The Warriors received more than one trade offer for Lin while he was in the D-League, but the Warrior coach stated, “He’s a minimum, inexpensive asset. You need to look at him as a developing asset. Is he going to be a superstar? No.” The Warriors would eventually waive Lin. And so would the Rockets. Soon there would be no other offers. The Knicks claimed him, but like his previous stint, he was sent down to the D-League. That is when Lin-sanity began.

He posted a triple double in his first game in the D-League under the Knick’s system. He was called up three days later. Coach Mike D’Antoni decided to give Lin a chance to play due to “desperation”, according to experts. “He got lucky because we were playing so bad,” said the Knicks coach. He took advantage. His first game: 25 points, 5 rebounds, 7 assists. Not bad for a kid who played only 55 minutes in the first 23 Knick games. The rest is history. Lin scored more points than ANY player in this history of the NBA over his first 10 NBA starts. The next few players on that list: Magic Johnson, Michael Jordan, Wilt Chamberlain. That is some good company. In his third career start, he hit a game winning shot. The 8-15 Knicks were suddenly 16-16. The League, the fans, the media, and this writer took notice and were compelled to watch whenever he played. There were still doubters. Stephen A. Smith, a national basketball analyst stated that Lin did this only against “poor competition”. How did Lin respond? Only 38 points and 7 assists against one of the League’s best teams and players, the Los Angeles Lakers and Kobe Bryant.

Lin, like Tebow, is good for sports. He gives the credit to his teammates and to his faith. He is not the most physical athletic specimen, 6’3, 185 pounds, but his heart has to be three times the size of the normal player. His determination and his drive set him apart from his fellow adversaries. His career has just begun, but his legacy is already legendary. Both of these players have shocked the world. They aren’t the first. Steve Nash was not supposed to play in the NBA, only to go on to back to back MVP awards. Tom Brady was drafted in the 6th round (out of 7) in the NFL, only to win 3 Super Bowls, and a few MVP awards himself. But today’s star title belong to Tebow and Lin. Both players have and will continue to answer questions and face ridicule and criticism. However, let’s not look at the inefficiencies for a minute. Let’s focus on the wins and leadership. Better yet, let’s focus on the character of these two players. The NBA and NFL can only be so lucky to have a poster boy fitting of the title “star”.

Photo Credit: Dave Saffra /MSG Photos
Principles of Safe & Effective Exercise

By Jack R. Steel, MD
The benefits of exercise are well recognized. These include weight control, stronger bones, improved cardiovascular health, better resistance to disease, elevated mood, increased energy levels, and higher self-esteem. Consistent exercise is the key to success.

Start with an exercise program that is realistic in terms of your physical abilities. Walking is an activity that is accessible to most everyone. Begin with a reasonable goal of walking 20 minutes four to five days out of seven. Dress properly and wear comfortable shoes. Set a schedule that you can consistently follow and don’t allow yourself to violate your routine. A partner you can share the experience with will increase your likelihood for long term success.

As you become more comfortable with 20 minutes of walking, gradually extend the time to 40-60 minutes. When the weather is inclement, locate an indoor venue such as a mall to permit uninterrupted participation. Adding a pedometer to your walk will allow you to track your mileage, which can further allow you to track your progress.

When you find walking becoming less challenging, you can obtain a pair of running shoes and add short burst of slow running or jogging. This can progress to more regular “running” on an alternating day basis with just walking.

If you prefer indoor activities, the use of a treadmill at home or in the gym can be equally effective. Music or a nearby television can help with entertainment while exercising.

Individuals with knee, hip or foot problems such as osteoarthritis, can benefit from non-loading activities. These activities include exercise bikes (upright or recumbent). The seat should always be adjusted so that the knee is fully straight during the pedal cycle. It is not necessary to add resistance to be effective. Same time goals as walking should be observed. Those interested in more intense cycling workouts can try group spinning classes. This adds to the fun of exercise with music in group camaraderie.

Elliptical trainers are also excellent machines for limited loading activities. Adding the arm component of elliptical trainers will increase the caloric expenditure of the exercise.

Swimming, aqua jogging and water aerobics for those with access to a pool are excellent cardiovascular activities for persons with lower extremity joint problems. Most YMCA’s and college rec centers offer community classes for individuals with arthritis. Some of these programs may be covered by health insurance with a doctor’s prescription.

Group exercise programs such as Zumba and aerobics classes are offered at many community centers. These group activities are fun and supportive. Some maneuvers in these programs, such as lunges, can cause knee discomfort and can be avoided by walking or jogging in place during the portion of the workout.

Weight training can be added on days between cardio workouts to improve upper and lower body muscle tone. Instruction by gym staff or personal trainers is recommended to safely accomplish these goals. Dead lifts and squats beyond 30 degrees of knee flexion are not necessary and can be detrimental to the back and knees. Multiple repetitions with lighter weights are adequate for toning and can decrease the risk for injury. Competition in a weight room is to be avoided as it can lead to joint and tendon injury.

Injury to bones, joints and tendons can be avoided with proper exercise, exercise technique and rest. Alternating daily activities such as running with swimming, biking, aerobics/Zumba and weight training avoids overuse injuries.

Initial muscle soreness during the first weeks of exercise is expected. Stretching before and after exercise can improve flexibility and may decrease muscle discomfort. Joint pain, joint swelling or bone discomfort should not be ignored. A good rule to follow is to avoid activities that cause these problems. If you experience these symptoms, an orthopedic consultation should be sought. Stopping all exercise is not usually required or desired as it can lead to abandoning a healthful behavior you have worked hard to establish.

Regular exercise is extremely beneficial to physiologic and psychological health. There is an appropriate exercise that is possible for most individuals regardless of their age and initial level of fitness. Internists, family practitioners, cardiologists, orthopedists and other health professionals can assist you with the help of physical therapists and personal trainers to find what is right for you. The time is now to get healthier, be happier and live longer.
CARPAL TUNNEL

WHAT IS CARPAL TUNNEL SYNDROME?

Carpal tunnel syndrome is caused by a pinched nerve in your wrist. The median nerve runs through a tight canal in your wrist along with the tendons that bend your fingers. This canal is called the carpal tunnel. Sometimes these tendons can become inflamed and place pressure on this nerve, causing symptoms in your hand and sometimes up your forearm.

HOW DO I KNOW IF I HAVE CARPAL TUNNEL SYNDROME?

The median nerve provides sensation in your thumb, index, middle, and part of your ring finger. The most common symptoms of carpal tunnel syndrome are numbness and tingling in those fingers. You may also experience some weakness in your thumb, as some of the muscles that move your thumb are supplied by this nerve. Occasionally you may have pain that goes up your forearm as well. The numbness and tingling often occurs at night, and many patients report waking up in the middle of the night with numbness in their hands.

IS THERE A TEST FOR CARPAL TUNNEL SYNDROME?

The diagnosis of carpal tunnel syndrome can be made based on your symptoms as well as your exam findings. Your doctor may order a test called an EMG or nerve conduction study that measures how fast and how well the nerve is transmitting signals. If this test shows slowing in the area of the carpal tunnel, then a diagnosis of carpal tunnel syndrome is made.
HOW IS IT TREATED?

Depending on the severity of the disease, there are various treatment options for carpal tunnel syndrome. You may try wearing splints at night that can help reduce some of the nighttime symptoms, and your doctor may try a cortisone injection into the carpal tunnel. The injection can provide some temporary relief, and also confirm that your symptoms are caused by carpal tunnel syndrome. The cure for carpal tunnel syndrome is through surgical release of the ligament that is the roof of the canal. This relieves the pressure on the nerve, and allows it to resume transmitting signals normally again. This surgery can be done through two different ways. It can be done open, through an incision in the palm, or minimally invasive with an endoscope inserted through an incision in the wrist. Both ways achieve release of the ligament, and relief of the pressure on the nerve.

WHAT CAN I EXPECT AFTER SURGERY?

After surgery, depending on the severity of your disease, the nerve will start to recover. As long as there aren’t any permanent changes due to severe disease, the numbness and tingling will slowly resolve, and you will start to regain sensation in your fingers. The pain going up your forearm will start to improve as well. You may resume your normal activities once the surgical incisions have healed. There will be some residual tenderness in your palm where the ligament was released, but you cannot damage anything by using your hand as tolerated. Usually by four weeks patients are back to work and doing all the activities they wish to be doing.
Since the 1800s when bicycles first made their appearance, cycling has become popular for commuting, recreation, exercise, and sport. Today, there are an estimated 80 million cyclists in the United States. Studies estimate that of these 80 million, 48 percent experience problems with their necks, 42 percent with knees, 36 percent groin and buttocks, 31 percent hands, and 30 percent back. Regardless of what you intend to use a bicycle for, there are some basic safety principles that you can implement to avoid common cycling injuries.

**HOW CAN CYCLING INJURIES BE PREVENTED?**

**Properly Fit Your Bike to Your Body** - First, make sure that you have a properly fitted bicycle. Proper fit is critical to minimize pain and injury! Make sure your bike seat is level. If your seat is tilted either downward or upward too much, extra pressure will be put on your arms, hands, knees, and hips. In order to obtain an appropriate fit you will need to adjust the height of your seat. Seat height needs to be evaluated with the pedal in the lowest position (6 o’clock) and in the horizontal position (3 and 9 o’clock). When the pedal is in the lowest position your knee should be almost completely extended with the pedal beneath the ball of your foot. With the pedals in the horizontal position, the tibial tubercle (bump just below your knee) will be directly above the middle of the pedal. Inappropriate height can result in knee pain, hip pain, or ankle problems. Your handlebars also need to be in a proper position to avoid overreaching. Incorrect positioning may result in neck, shoulder, back, and hand pain.

In general, the distance from the forward tip of the seat to the center of the handlebars should equal the distance from the tip of your elbow to the tip of the middle finger. This will allow you to comfortably use different grips on the handlebars and bend your elbows.

**WHAT ARE SOME COMMON CYCLING INJURIES?**

**Knee Pain** - The knee is the most common site for overuse injuries in cycling. Patellofemoral syndrome (cyclist’s knee), patella and quadriceps tendinitis, medial plica syndrome and iliotibial band friction involve pain around the kneecap while the last condition results in outer knee pain. Shoe implants, wedges beneath the shoes and cleat positions may help prevent some overuse injuries.

**Head Injuries** - One of the most common injuries suffered by cyclists is a head injury, which can be anything from a cut on the cheek to traumatic brain injury. Wearing a helmet may reduce the risk for head injury by 85 percent. Currently, the majority of states have no laws governing the use of helmets while riding a bicycle, but helmets are readily available for purchase and typically low in cost.

**Neck/Back Pain** - You will most likely experience pain in your neck when you stay in one riding position for too long. An easy way to avoid this pain is by doing shoulder shrugs and neck stretches which will help relieve neck tension. Improper form also leads to injuries. If your handlebars are too low, you may have to round your back, thus putting strain on your neck and back. If you have tight hamstrings and/or hip flexor muscles, you may find yourself rounding or arching your back, once again causing your neck to hyperextend. Stretching these muscles on a regular basis will create flexibility and make it easier to maintain proper form. Changing your grip on the handlebars will take the stress off of over-used muscles and redistribute pressure to different nerves.
**Wrist/Forearm Pain or Numbness** - Ride with your elbows slightly bent (never ride with your arms locked or straight). When you hit bumps in the road, your bent elbows will act as shock absorbers. This is also where changing hand positions will help reduce pain or numbness. Two common wrist overuse injuries, Cyclist's Palsy and Carpal Tunnel Syndrome, can be prevented by alternating the pressure from the inside to the outsides of your palms and making sure wrists do not drop below the handlebars. In addition, padded gloves and stretching your hands and wrists before riding will also help.

**Urogenital Problems** - One common complaint from male riders who spend a lot of time riding is pudendal neuropathy, a numbness or pain in the genital or rectal area. It is typically caused by compression of the blood supply to the genital region. Anatomic specific seats (male and female) can help to relieve pressure on the pudendal nerve and blood supply. Male riders who spend a lot of time riding also may experience a higher risk of urogenital problems, such as erectile dysfunction and infertility.

**Foot Numbness and Tingling** - Foot numbness and tingling are common complaints. Shoes that are too tight or narrow are often the cause. In addition, foot numbness can be due to leg and resulting compression of nerves. The diagnosis is made by pressure measurements and is treated with surgical release.

**TRAUMATIC INJURIES**
Cycling injuries account for 500,000 visits per year to emergency rooms in the US. Over half the accidents involve motor vehicles. Of participants in cycle events, 0.4% up to 10% sustain serious injuries, which are significantly more frequent in women than in men. The most common mechanism of injury involves a forward fall over the handlebars on the shoulder or on the outstretched arm resulting in direct or indirect lesions of the upper extremity. For cyclists, fractures (broken bones) are most common in the hand, wrist, forearm, or shoulder. They occur when the rider attempts to break his or her fall with an outstretched arm. After a fall, marked and immediate pain and swelling usually indicates a fracture of the distal radius, scaphoid, hamate, (wrist bones) or clavicle (collarbone). The most common bony injury is a clavicle fracture, which represents around 45% of all recorded fractures due to bicycle accidents. Other orthopedic lesions of the shoulder include Acromioclavicular (AC) joint dislocations, proximal humeral fractures, shoulder dislocations, rotator cuff tears and scapular fractures. Many of the above mentioned shoulder injuries can be treated conservatively but some may require surgical repair.

**Avoiding Injuries** - To avoid injuries, cyclists and motorists should be aware of each other’s presence and follow traffic regulations. Cyclists should follow the same traffic rules motorists do and should always dress appropriately with a helmet and bright reflective clothing. Motorists, in turn, should always be on the lookout for cyclists and should yield them the right of way when possible. Cyclists should be aware of road damage and debris, which can cause a fall and lead to injury. Interestingly, 47% of cyclists involved in accidents in urban settings, cited themselves as being at fault; therefore, an “ounce of prevention” truly is worth a “pound of cure.”
I believe the growing popularity of marathons among beginning runners has contributed to the increase in repetitive stress injuries, including stress fractures of the foot. Repetitive impact on feet can increase risk of damage.

Often, first-time marathoners enter a race with little or improper long-distance training. The lack of experience coupled with the repetitive impact placed on the feet during the run can produce enough stress to cause hairline breaks in the bones of the foot.

In my opinion, runners who increase their mileage too quickly or change to a more intense phase of training may be more susceptible to a stress fracture due to the increased force placed on the bones. A general rule of thumb for runners is to increase the mileage by no more than 10 percent each week. Runners who are training also need to have adequate rest time in between runs to help decrease the risk of a fracture.

Runners at all levels of experience are also at higher risk for stress fractures if they wear improper shoes while running or training, suffer from flatfoot or other foot deformities, or have osteoporosis. Signs of stress fractures can include: pain, swelling, redness and possibly bruising of the area. Stress fractures can occur anywhere in the foot and eventually lead to a complete break of the bone if left untreated. Early diagnosis and treatment are important to ensure proper healing.

If a break is suspected, I advise runners to immediately follow the RICE protocol:

- **Rest**
- **Ice**
- **Compression**
- **Elevation**

If pain and swelling last longer that a few days, an appointment for an x-ray and diagnosis is in order.

In most cases, treatment includes rest and immobilization with casting of the foot. Surgery may be required in certain instances to repair and stabilize a stress fracture that has progressed into a full fracture.

I encourage runners to take action to prevent repetitive stress injuries in their feet by wearing supportive athletic shoes and slowly building up their activity levels according to their abilities. If a runner suffers from abnormal mechanics in the foot, such as overpronation or hypermobility, custom orthotics can also be helpful to prevent these injuries.

If you suspect you have a foot injury or fracture, I encourage you to call our office at 304-525-6905 for an evaluation.
INCIDENCE

Post-operative nausea and vomiting (PONV) remains one of the most common complications related to surgery despite advanced surgery techniques and the improvement of anesthesia medications. Although preventative and rescue administration of anti-nausea medication is standard practice for surgery patients, the problem of PONV remains the most commonly reported fear before elective surgery (ASPAN, 2006). Because approximately 75 million people are affected by PONV annually, it is essential to establish which individuals are most at risk prior to surgical treatment (ASPAN, 2006).

RISK FACTORS

Although PONV can occur with any surgery, there are several risk factors (that have been supported by strong evidence): female gender, history of PONV, history of motion sickness, nonsmoker, postoperative use/administration of opioids (morphine, fentanyl), use of inhaled anesthetics (sevoflurane, desflurane), and use of nitrous oxide. Other risk factors (supported by weak evidence) are: age, duration of surgery, and type of surgery. According to the American Association of PeriAnesthesia Nurses’ guidelines, two or more of these risk factors places patients at severe risk for PONV (ASPAN, 2006).

PROPHYLACTIC TREATMENT

Current treatment for PONV involves identifying patients most at risk based on the risk factors mentioned above. Regardless of known risk factors, the vast majority of patients receive a combination of prophylactic intravenous (IV) medications such as dexamethasone (Decadron) and ondansetron (Zofran), and IV fluids prior to the induction of anesthesia. Other considerations include scopolamine (patch placed behind the ear), as well as IV droperidol (Inapsine) administration. In addition, a multimodal approach such as non-steroidal anti-inflammatory drugs (NSAIDS) and local anesthetics (lidocaine, marcaine) may be used in order to reduce the amount of narcotics used to produce analgesia.
RESCUE TREATMENT

If prophylactic treatment is unsuccessful, patients experiencing PONV after surgical intervention will receive an additional IV dose of ondansetron (Zofran) as well as additional IV fluids. Because adequate hydration is associated with a decreased reduction in PONV, it is necessary to consume liquids after discharge from the surgical hospital or recovery unit. Other medications routinely administered due to PONV in the recovery unit are IV droperidol (Inapsine), diphenhydramine (Benadryl), and metoclopramide (Reglan). Other non-pharmacologic treatment incorporated in the care of patients experiencing PONV includes the use of aromatherapy such as lavender and peppermint oil as well as the inhalation of rubbing alcohol. In addition, research suggests that acupressure at the P6 pressure point (located on the underside of wrist, in the center, 3 finger-widths from the wrist crease) is beneficial to reduce the incidence of PONV (Frey et al., 2009). Additional treatment includes decreasing environmental stimuli such as bright lights and harsh noise.

PONV AND YOU

What can you do to help reduce the chance of PONV for your surgical procedure? The best predictor for PONV is the risk factors stated above. If you, or your loved one has two or more of the included criteria notify the pre-admission testing department, nursing, or anesthesia staff to ensure your needs are identified prior to your surgical procedure.

References

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