

Keeping you...

# Active



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Sports Medicine • Orthopedic Excellence

## Keeping you... Active

... is a quarterly newsletter from West Tennessee Bone & Joint Clinic.

The clinic's ten physicians specialize in sports medicine and orthopedic problems.

For copies of the newsletter, contact Adam Kelley, Marketing Director, at 731.661.9825.

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## Customized, knee-replacement surgery gives patient her mobility without pain

**P**am Coughlin's knees had been bothering her for a while. The worst was her left knee; the pain was getting unbearable.

"It ached, it hurt. I could hear the crunch whenever I went up and down steps," said Coughlin, office manager at Cupples J & J. As the pain worsened, she sought treatment from Dr. Kelly Pucek, a board-certified orthopedic surgeon at West Tennessee Bone & Joint Clinic, P.C. These days, she's walking nearly pain free, thanks to a new patient-customized, knee-replacement surgery.

The 51-year-old Coughlin, a mother of two and a grandmother, first saw Dr. Pucek three years ago. "My family had just moved our mom into assisted living," she says. "The lifting and moving boxes and cleaning up her house was a shocker to my knee. I needed to do something because of the pain."

After an MRI, Dr. Pucek found severe arthritis and a meniscus tear in her left knee. He did surgery to repair the tear and clean up her knee. After that, when the pain got bad, Dr. Pucek would give an injection in her knee to lessen the pain. Then her right knee started to hurt. A nerve block relieved her pain for a while, but her knees continued to get worse.

Coughlin heard good news from Dr. Pucek when she had an appointment with him around June 1. He had done his first customized knee replacement on a patient the day before. The technologically advanced surgical procedure uses a patient's MRI and x-ray im-

ages to design and build surgical instruments customized for that patient's unique knee anatomy. The end result is a better knee replacement, a faster recovery and an implant that should last longer. *(Read more about the surgery, Page 2.)*

He told Coughlin the surgery was so successful that if his wife had Coughlin's knee problems, that's the surgery he would want for her.

"I said, 'let's do it,'" Coughlin added. "If Dr. Pucek was that confident in the surgery, that's the decision I needed to make."

Coughlin had the customized knee replacement in both knees at Regional Hospital on June 28. On July 3, she entered Jackson-Madison County General Hospital's rehab unit. "The physical therapists already

were amazed with the range of motion I had in both knees," she said. "As I talked to other patients who had knee replacement surgery, I realized how much faster my recovery was."

She was out of rehab six days later and returned to work part-time August 2.

Today, she says, "the pain is much less, and my knees are getting better and better. I can look forward to taking my family to Disney World next year for vacation without my knees hurting."

Coughlin wouldn't hesitate to have the customized knee replacement surgery again. "I feel fortunate that Dr. Pucek knew how to do the surgery. I thoroughly enjoyed Dr. Pucek as my physician."



Pam Coughlin is happy to be walking again without severe pain.

# West TN Bone & Joint Clinic Physicians experienced in patient-matched, knee replacement surgery

**A** new technologically-advanced surgical procedure is customizing knee replacement surgery to each patient. The result is a knee implant that works more naturally for the patient and may last longer.

“Visionaire Patient-Matched technology is a remarkable system that uses your MRI and x-ray images to design and build surgical instruments customized for your unique knee anatomy,” said Dr. Kelly Pucek, who is one of several physicians at West Tennessee Bone & Joint Clinic, P.C., who have been trained to do the patient-customized, knee replacement surgery.

“Every person’s knee joint has subtle differences in shape and contour,” he explained, “but traditional surgical

instruments used to place knee implants are one-size-fits-all.”

Traditionally, an orthopedic surgeon spends time during the procedure adapting to the patient’s knee “terrain” in order to achieve the proper placement of the implant. “Misalignment is the leading cause of early implant failure, and it also can cause pain and instability,” said Dr. Pucek.

With the Visionaire technology, explained Dr. Jason Hutchison, who also practices at West Tennessee Bone & Joint, the orthopedic surgeon comes to the operating room equipped with instruments engineered exclusively for the patient’s knee by Smith & Nephew, an innovator in orthopedic implants. The computer-guided precision of Visionaire

Patient-Matched technology also assists the surgeon in choosing the correct implant size that matches the dimensions of the patient’s knee and helps the surgeon accurately place the knee implant.

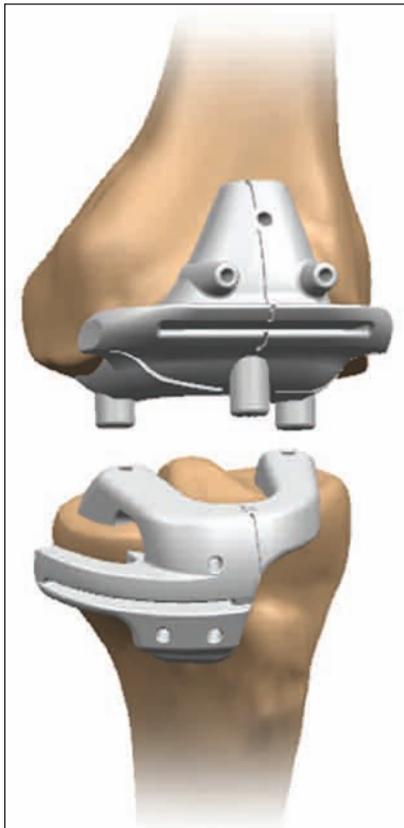
When possible, the orthopedic surgeons at West Tennessee Bone & Joint Clinic use minimally-invasive surgical techniques with the Visionaire instruments, which helps patients return to their active lifestyles faster.

Minimally-invasive surgery leaves a smaller scar, and patients may experience less pain during recovery than they would with a standard surgical approach to total knee replacement. The Visionaire system also eliminates multiple steps from the surgery, reducing the patient’s time under anesthesia.

Any surgery has potential risks, the physicians said, and recovery depends on factors like activity level, weight and age.

“Still,” said Dr. Hutchison, “the new patient-customized technology is an important advance in knee replacement surgery.”

Besides Dr. Pucek and Dr. Hutchison, the West Tennessee Bone & Joint Clinic physicians experienced in the new knee replacement surgery are Dr. Michael Cobb, Dr. David Johnson, Dr. Harold Antwine and Dr. David Pearce.



## Water: Essential part of any exercise, sport

Continued from back cover ...

frequently to avoid dehydration.

To find the correct balance of fluids for exercise, athletes should develop customized fluid replacement programs that prevent excessive dehydration (greater than 2 percent body weight loss from baseline body weight). The routine measurement of pre- and post-exercise body weights is useful for determining sweat rates and customized fluid replacement programs.

The Institute of Medicine says the need for carbohydrate and electrolyte replacement during exercise depends on exercise intensity and duration, weather and individual differences in sweat rates.

Carbohydrates provide energy for exercise over 60-90 minutes. This can also be provided through energy gels, bars and other foods.

Sports drinks can be helpful to athletes who are

exercising at a high intensity for 60 minutes or more. Fluids supplying 60 to 100 calories per 8 ounces help to supply the needed calories required for continuous performance. It’s not necessary to replace losses of sodium, potassium and other electrolytes during exercise since you’re unlikely to deplete your body’s stores of these minerals during normal training.

If, however, you find yourself exercising in extreme conditions over 3 or 5 hours (a marathon or Ironman, for example) you may likely want to add a complex sports drink with electrolytes.

### General guidelines for fluid needs during exercise

While specific fluid recommendations aren’t possible due to individual variability, most athletes can use the following guidelines as a start-

ing point, and modify their fluid needs accordingly.

- Drink 15-20 fluid ounces, 2-3 hours before exercise
- Drink 8-10 ounces 10-15 minutes before exercise
- Drink 8-10 ounces every 10-15 minutes during exercise
- If exercising longer than 90 minutes, drink 8-10 fluid ounces of a sports drink (with no more than 8 percent carbohydrates) every 15-30 minutes.
- Weigh yourself before and after exercise and replace fluid losses. After exercise, drink 20-24 fluid ounces of water for every one pound lost.
- Consume a 4:1 ratio of carbohydrate to protein within two hours after exercise to replenish glycogen stores.



# Tennessee implements new concussion policy

The Tennessee Secondary School Athletic Association drafted a new concussion policy that went into effect this school year. The policy is a result of an increase in concussions and closed head injuries across the country that affect young athletes involved in contact sports.

Education is the key to identifying and treating student athletes who show signs of a concussion during athletic participation. Concussions can be a serious health issue and should be treated accordingly. Coaches, parents, officials, athletes and health care providers should know the symptoms and what steps to take when an athlete displays signs of a possible concussion.

## Concussion symptoms that the athlete may report...

- Headache or pressure in head
- Nausea
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light, noise
- Feeling sluggish, groggy
- Does not “feel right”

## Possible concussion signs observed by others...

- Appears dazed or stunned
- Is confused about assignment
- Forgets sports plays, unsure of game score or opponent

By Harold Antwine, M.D.

- Moves clumsily
- Answers questions slowly
- Shows behavior or personality changes
- Cannot recall events before or after the hit or fall
- Looses consciousness

Take the athlete to an emergency room if any of these symptoms are present:

- Headaches that worsen
- Seizures
- Focal neurologic signs
- Drowsy or cannot wake up
- Repeated vomiting
- Slurred speech
- Cannot recognize people or places
- Increasing confusion
- Weakness or numbness in arms or legs
- Neck pain
- Unusual behavior change
- Significant irritability
- Loss of consciousness 30 seconds or longer

Any athlete with symptoms of a concussion should be removed from play and should not participate in games or practices until he or she has been evaluated and given permission by an appropriate health care provider.

Research indicates that high school athletes with less than 15 minutes of on-field symptoms exhibited deficits on formal neuropsychological testing and re-emergence of active symptoms, lasting

up to one week after injury.

Symptoms will typically worsen or re-emerge with exertion, indicating incomplete recovery. If the athlete is symptom free, provoking with exertion is recommended. (Example: 5 push-ups, 5 sit-ups, 5 knee bends 40 yard sprint.)

Return to play should occur gradually. An appropriate health care provider should monitor athletes for symptoms and cognitive function carefully during each stage of increased exertion. On-field followup evaluation is important, as symptoms of a concussion may evolve over time. The physician should give parents and caregivers information regarding the athlete's condition.

For example, the athlete should not operate a motor vehicle or participate in activities such as sports, PE class or riding a bicycle. The athlete also may experience cognitive/behavioral difficulties at home, making it necessary to reduce physical and cognitive exertion, such as running, lifting weights and intensive studying until fully recovered.

Finally, the athlete should receive followup medical and neuropsychological evaluation both for managing the injury and determining when to return to sports.

## Concussion Quiz True or False

**A.** Common symptoms of a concussion include headache, confusion, nausea, dizziness and mood changes.

**B.** An athlete may return to play or practice the same day the head injury occurred, as long as he is no longer having symptoms of concussion.

**C.** An athlete suspected of having a concussion should be evaluated by an appropriate healthcare professional within 48 hours after the injury.

**D.** Any athlete with a concussion can be cleared to return to play or practice by their head coach.

## Answers

**A. True:** All are common symptoms of concussion. Other symptoms include difficulty concentrating, difficulty with memory, slowed thought process, fatigue and blurred vision. Any player showing signs of a concussion should be removed from the sporting event.

**B. False:** Any athlete suspected of having a concussion should not return to play or practice the same day as the injury.

**C. False:** The athlete should be evaluated on the same day the injury occurred.

**D. False:** An athlete who has suffered a concussion must be cleared by an appropriate healthcare professional before resuming participation in any practice or competition. A “TSSAA Concussion Return to Play Form” also must be completed by the healthcare professional.

By Shea Cooper, Physical Therapist

For more information on the TSSAA Concussion Policy, go to [www.tssaa.org/concussion.pdf](http://www.tssaa.org/concussion.pdf)



## Fifth Quarter Clinic on Football Fridays

West Tennessee Bone & Joint Clinic opens its Fifth Quarter Clinic on Friday nights during football season. An injured athlete can be seen by a clinic physician for a specialty consultation instead of going to the emergency room. Athletes must be accompanied by a parent or coach and arrive immediately after the game.

# Water: An essential part of any exercise, sport

Water is the most essential ingredient to a healthy life. Water has many important functions in the body including transporting nutrients and eliminating wastes, lubricating joints and tissues, temperature regulation through sweating and facilitating digestion.

## Importance of water during exercise

Proper hydration is especially important during exercise. Adequate fluid intake for athletes is essential to comfort, performance and safety. The longer and more intensely you exercise, the more important it is to drink the right kind of fluids.

Athletes need to stay hydrated for optimal performance. Studies have found that a loss of two or more percent of one's body weight due to sweating is linked to a drop in blood volume. When this occurs, the heart works harder to move blood through the bloodstream. This also can cause muscle cramps, dizziness and fatigue and even heat illnesses including heat exhaustion and heat stroke.

## Causes of Dehydration

- Inadequate fluid intake
- Excessive sweating
- Exercising in dry, hot weather
- Drinking only when thirsty

By David Pearce, M.D.

- Failure to replace fluid losses during and after exercise

## Adequate fluid intake for athletes

Because sweat rates, losses and hydration levels of individuals vary widely, it is nearly impossible to provide specific recommendations or guidelines about the type or amount of fluids athletes should consume. Finding the right amount of fluid to drink depends upon a variety of factors, including the length and intensity of exercise and other individual differences. Here are two simple methods to estimate adequate hydration:

- **Monitoring urine volume output and color:** A large amount of light colored, diluted urine probably means you are hydrated; dark colored, concentrated urine probably means you are dehydrated.

- **Weighing yourself before and after exercise:** Any weight lost is likely from fluid, so drink enough to replenish those losses. Any weight gain could mean you are drinking more than you need.

## Factors that affect fluid loss in athletes

- **Temperature:** Exercising in the heat increases your fluid losses through sweating. Exercise in the

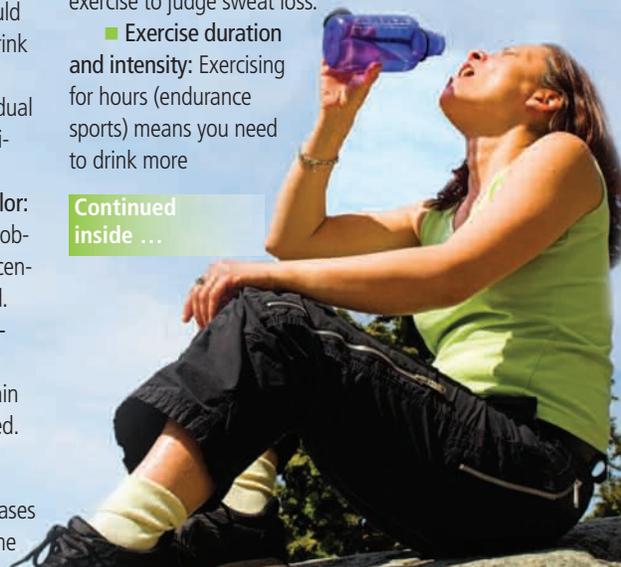
cold can impair your ability to recognize fluid losses and increase fluid loss through respiration. In both cases, it is important to hydrate.

- **High altitude:** Exercising at high altitudes increases your fluid losses and increases fluid needs.

- **Sweating:** Some athletes sweat more than others. If you sweat a lot you are at greater risk for dehydration. Again, weigh yourself before and after exercise to judge sweat loss.

- **Exercise duration and intensity:** Exercising for hours (endurance sports) means you need to drink more

Continued inside ...



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## Keeping You Active

The physicians at West Tennessee Bone & Joint Clinic, P.C. specialize in comprehensive orthopedic care.

They diagnose and treat diseases and injuries of the bone, muscles, tendons, nerves and ligaments in adults and children. They are Board Certified in Orthopedic Surgery.

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