

Neuro



PennState Health

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Finding the Path to Successful Neurosurgery

The neurosurgery department at Penn State Health Milton S. Hershey Medical Center tackles rare and challenging cases while advancing the field.

Just as the brain is an intricate structure, neurosurgery is a practice with many layers. Specific treatments address specific problems, like complex spinal pathologies, brain tumors, and aneurysms as well as disorders like moyamoya disease, spina bifida, and epilepsy.

Caring for patients with these and other conditions is the mission of the department of neurosurgery at Penn State Health, where a team of world-renowned neurosurgical specialists treats brain, spine, and peripheral nerve pathologies from the commonplace to the exceedingly rare in adults and children.

Because the department treats a high volume of patients, it's skilled in delivering surgical care for everything from the simplest procedure to the most complex. Add that to the department's continued investments in training and technology, and the result is a high-quality program trusted by patients throughout the region.

"Our practices are focused, and our level of expertise is higher in areas than that of a general neurosurgeon," says Dr. Robert Harbaugh, a board-certified neurosurgeon and the department's chair. "That includes our nursing and anesthesiology staff. We're all geared toward subspecialties. We offer the same quality and breadth of neurosurgical services that are offered at urban academic medical centers."

His colleague Dr. Elias Rizk, a board-certified neurosurgeon with expertise in peripheral nerve and pediatric neurosurgery, adds, "If you have a family member who needs a neurosurgeon, you want that family member to be treated here."

No Challenge too Great

For most people, the benefits of receiving subspecialized neurosurgical care aren't appreciable until they or a loved one needs it. In those circumstances, it pays to have experts nearby and ready to share knowledge about conditions they've dedicated their careers to treating.



"A lot of people don't know where to turn when they end up in the emergency room with something like a brain tumor or aneurysm," says Dr. Brad Zacharia, a board-certified neurosurgeon with expertise in brain tumor and skull base surgeries. "They might not realize that these conditions need to be addressed urgently but not immediately. It's worth seeking a second opinion, and few neurosurgery practices have a real depth of expertise in every specialty area like we do."

"Every neurosurgery case is like a game of chess," says Dr. Rizk. "You have to plan and strategize. That's especially true every day at Penn State Health because we're tackling the most difficult cases."

The department frequently participates in groundbreaking clinical trials that bring new treatments and therapies to patients sooner. Currently, these include a trial for viral gene therapy to treat chronic pain patients; a

worldwide partnership to track and treat brain tumors with rare mutations; and a project to study best practices for treating unruptured intracranial aneurysms. "A small practice can't do that," says Dr. Harbaugh. "But we have so many patients here that we can refine surgical techniques and improve outcomes."

Residents of the department have the privilege of studying under distinguished faculty—a setup that's mutually beneficial, says Dr. Harbaugh. "In addition to the extra eyes, brains, and bodies to help care for patients, residents keep the faculty on their toes," he says. "There's nothing that helps you learn something better than if you have to teach it to someone else."

"Doing operations is a huge part of what we're about, but so is doing research and passing on knowledge to the next generation," adds Dr. Zacharia. "We're working toward the betterment of patients as well as the field."



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Ortho



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On the Move

Penn State Health's Department of Orthopaedics and Rehabilitation helps patients return to the activities they love.

It's a common dilemma for active Americans: A favorite activity such as golf or running becomes unbearably painful. The culprit? Aging, arthritic, or injured joints.

"When pain can't be controlled with nonoperative measures such as therapy, injections, medications, and activity modifications, and the pain is affecting quality of life, it might be time to consider surgical interventions," says Dr. April Armstrong, chief of shoulder and elbow surgery at Penn State Bone and Joint Institute.

Her colleague Dr. Charles Davis, chief of the hip and knee arthroplasty division, concurs. "In making the decision for surgery, we consider how much pain patients are experiencing and their level of function. It all revolves around getting back to doing the things that are important in their life," he says.

The Penn State Health Department of Orthopaedics and Rehabilitation is staffed with a nationally lauded team of orthopaedic surgeons, physical and occupational therapists, primary care physicians, and other specialists committed to ensuring patients receive world-class orthopaedic care. With a dedicated Bone and Joint Institute and Spine Center, the department provides care personalized to patients' needs. As an academic medical center, Penn State Health Milton S. Hershey Medical Center routinely sees and treats some of the most complicated orthopaedic cases.

The department's collaborative approach to patient care makes it the place of choice for both patients experiencing unmanageable pain and physicians desiring a cohort of like-minded providers. The department, Dr. Davis explains, collaborates internally and externally to involve the patient, family, and all medical teams in treatment planning.



Incredible Progress, Exceptional Care

While joint replacements are not uncommon, advancements in the field illustrate the miles procedures have come.

Dr. Armstrong cites the reverse ball and socket implant as one of those advancements. As opposed to the traditional surgery, which replaces the arm bone's damaged ball with an artificial one, this procedure places an artificial ball in the shoulder blade and attaches a socket to the arm bone. "After the implant, patients who couldn't raise their arms above their heads now have the ability to do this," she says. "It not only takes away a patient's pain, but it is also a functional, life-changing improvement."

The technicalities of hip and knee replacements haven't changed, Dr. Davis says, but

recovery time and methods have. "Twenty years ago, patients stayed in the hospital for a week or two after the replacement. Now, 85% of patients go home the next day," he says, "and a large percentage walk on the day they have their surgery." Combined with a decrease in narcotic use to manage pain, patients recover faster and healthier.

Both Dr. Armstrong and Dr. Davis agree that while the advancements in recovery have been astounding, the progress their patients make physically and personally is most rewarding. "The ability to take away a patient's pain and improve their quality of life is extremely rewarding," Dr. Armstrong says.

"In the end, we get to help people walk or use their arms and get back to being with their families," Dr. Davis says. "That's why we do what we do."



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Heart



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At the Heart of Good Health

Penn State Heart and Vascular Institute operates on the cutting-edge of cardiology while also championing the basics of heart-healthy behavior.

The heart is a complex organ, yet caring for it can be quite simple, according to two cardiologists at Penn State Heart and Vascular Institute in Hershey, Pennsylvania.

“Diet and exercise,” says Dr. Shelley Hankins, a board-certified cardiologist at the institute. “You don’t think of this stuff when you’re in your 30s and 40s, but it’ll catch up with you.”

Her colleague, Dr. Joy Cotton, a board-certified cardiologist, agrees. “Diet and exercise can make a dramatic difference—more than some of the medications we prescribe,” she says.

Behavioral changes alone, however, might not remedy advanced cardiovascular diseases. That’s why patients in central Pennsylvania turn to the Heart and Vascular Institute, where experienced specialists like Drs. Hankins and Cotton employ advanced technology and treatments to address a range of cardiovascular diseases and conditions. In addition to serving as the region’s only heart transplant center, the institute offers first-rate preventative primary care as well as opportunities to participate in clinical trials.

“When it comes to treating people with heart problems, we have all of the resources right in the community’s backyard,” says Dr. Hankins.

Explore, Care, Heal

Patients of Penn State Heart and Vascular Institute may notice a few things. The place is abuzz with medical staff, including faculty from Penn State College of Medicine and the medical residents they’re training. Patients are the true beneficiaries of this academic environment.

“Our residents might pick up something someone else didn’t see,” says Dr. Cotton. “They don’t work in isolation—they’re



supported by layers of expertise.” When it comes to innovation and research, the institute leads the field—a plus for those with complicated pathologies. “If you have a condition where you’re not getting better, it helps to come to a place that offers clinical trials,” says Dr. Hankins.

To protect its patient population from COVID-19—which can cause myocarditis, or inflammation of the heart muscle—the Heart and Vascular Institute was quick to establish rigorous screening and separate facilities for COVID-19 patients. “It’s both crucial and safe for patients to go to the doctor for heart-related problems,” says Dr. Hankins. “If you’re experiencing shortness of breath, get it checked out. Don’t hesitate to get the cardiac care you need out of the fear of getting COVID.”

Central to the institute’s mission is keeping patients healthy and away from the operating table. This means educating patients about the telltale signs of a heart attack (suffocating chest pain for men, more subtle symptoms for women) and the importance of “knowing your numbers” for total cholesterol, blood pressure, blood sugar, and body mass index. High-risk patients should stop smoking immediately and address diabetes, if they have it.

Last but certainly not least, a healthy diet and at least 30 minutes of moderate to vigorous exercise three to five times a week are essential. “I try to empower my patients,” says Dr. Cotton. “This is within your control. Take hold of it, and you will feel so much better.”



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Cancer



PennState
Cancer Institute

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Cancer Prevention Starts Today

At Penn State Cancer Institute, saving lives starts with education about healthy choices and accessible screening options.

As a comprehensive cancer center with a wide reach and a deep heart, Penn State Cancer Institute is passionate about empowering the community to fight cancer—even before a diagnosis.

“If everyone utilized the prevention education and screening tools we have available, we could almost eradicate the majority of cancers we encounter,” says Dr. Mack Ruffin, professor and chair of family and community medicine at Penn State College of Medicine.

Some of the most effective preventions are the simplest: physical activity, abstaining from tobacco, and a healthy diet. “Eat fewer animal products and more colorful produce. There’s no magic here,” says Dr. Ruffin. Vitamin supplements, he adds, can’t make up for a nutritionally deficient diet, and in some cases, supplements might heighten cancer susceptibility.

The Truth About Vaccines and Screenings

The HPV vaccine—which vaccinates against the virus that can lead to cervical and related cancers—has proven effective and with little to no side effects when given to boys and girls as young as 9 years old. Before age 15, two shots are required. After 15, it’s three. “Get it early, get fewer shots, and just get it done,” Dr. Ruffin advises.

Coming soon is an at-home HPV sampling test for women. The test would replace annual pap smears by first screening for the HPV virus. “If a healthy woman is not carrying the HPV virus, the chance of developing cervical cancer is almost unheard of,” Dr. Ruffin says.

For other screenings, such as for lung and breast cancer, new regulations warn against over-screening, as risks may be associated with diagnostics for older populations.



Patients should consult with their physician to determine the best screening approach for their unique health.

“Penn State Health offers a well-integrated system that helps patients move easily from the community setting to the academic setting, where we can provide advanced services and access to clinical trials,” says Dr. Ray Hohl, director of the Penn State Cancer Institute.

“Do not delay your screenings, even amid a pandemic, because delay could mean diagnosis at an advanced stage. It’s time to focus on yourself again.”

Easier Colon Cancer Screenings

Colonoscopies remain the gold standard for colorectal cancer screening and are recommended at age 50 unless other risk factors are present, but the procedure can be a costly and inconvenient commitment.

Here’s the good news: “There are two other screening options that are simple, cheap, and don’t require any prep,” says Dr. Ruffin. The fecal immunochemical test (FIT) is an annual, at-home stool sample that looks for trace amounts of blood in the stool. Cologuard®, another at-home stool collection kit, is only needed every three to five years if results are normal.

“Any screening option is better than no screening at all,” Dr. Ruffin adds, “and telehealth is a safe and convenient place to start discussing your options.”



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