This month we celebrate the 60th anniversary of Open Heart Surgery at NewYork-Presbyterian Columbia University Irving Medical Center. We began with breakthroughs in the treatment of congenital heart disease, then expanded with major advances in valve surgery, heart transplantation, mechanical circulatory assist devices, and bypass surgery.

Heart disease remains the number-one killer of both men and women in the United States. This issue of healthpoints highlights recent research on its prevention and shows how you can less your risk for heart surgery through lifestyle changes like diet and exercise.

Also in this issue, you'll learn why it’s important to be tested for Hepatitis C and what new medications we have to treat it. And you'll discover why a healthy microbiome--the right balance of tiny microscopic organisms in the gut—is key to treating patients with liver disease. Finally, I hope you’ll join us for another of our patient awareness days, this time focusing on Lung Cancer, on May 6th.

Warmly,
Craig R. Smith, MD, FACS
Chairman, Department of Surgery

Preventive Cardiology
How to lessen your risk for Heart Surgery

“In the past ten years, we have been emphasizing prevention for many forms of heart disease,” says Dr. Edward Schuster, Assistant Clinical Professor of Cardiology at NewYork-Presbyterian/Columbia. “With a healthy diet, no smoking and proper medication, we have cut the death rate from coronary events by 50 percent. In Fairfield County, where Columbia has an affiliate hospital, this figure has dropped by an impressive 80 percent, indicating that lifestyle changes can have a big effect.”

This is important information since heart disease is now the number one killer of both men and women in the United States.

Studies show that preventive cardiology can reduce the need for cardiac bypass surgery, stents, and aneurysm repair in most people, Dr. Schuster explains, but does not lower the risk of valvular heart disease.
Today some 3.2 million Americans are living with chronic Hepatitis C, a viral infection of the liver that may last a few weeks or become a serious lifelong condition. Most of these people don’t feel sick or know they have this illness. The good news is that new therapies and resources can lead to a complete cure and Hep C’s eventual eradication.

Lorna Dove, MD, MPH, a leading expert at NYP/Columbia’s Center for Liver Disease and Transplantation, describes the importance of screening, and the revolutionary advances in Hep C treatment.

**Who is at risk for Hep C?**

Hep C is contagious and can be transmitted through contact with an infected person’s blood. Though not generally acquired through sexual contact, risk increases with the number of sexual partners. Before 1992, some people were infected after receiving blood transfusions—though today blood banks routinely screen for the Hep C virus. Today many people are infected with Hep C after sharing of needles and other equipment used to take illicit drugs. Because there are so many ways to be exposed to Hep C it’s important to get tested.

**What does this involve?**

These days, you don’t have to raise any of these tough subjects with your doctor to get screened. Hep C can be detected by a simple blood test, easily done by primary care physicians. It is recommended for all baby boomers born between 1945 and 1965, a population known to have a higher rate of the disease. For this age group, Hep C screening has become routine care like getting a mammogram or colonoscopy.

If Hep C is found, most patients will then be referred to a specialist (hepatologist) for treatment.

**What happens if Hep C isn’t discovered early? How will it progress?**

Hep C can cause fibrosis or scarring in the liver. Over time, it can lead to cirrhosis, or permanent liver damage. About 20 to 25 percent of all individuals with Hep C will end up with cirrhosis, and some go on to develop liver cancer.

The virus can also affect other organ systems reducing a patient’s overall lifespan.

In addition, it can impair kidney function and make it hard to manage diabetes. The goal of treatment is to prevent any of these problems from developing.

**What are the latest treatments for Hep C?**

Our drug arsenal changed dramatically in the past three years. We have moved from interferon-based treatment, which was hard to tolerate, to new antiviral regimens that are more than 90 percent effective with minimal side effects. This has revolutionized our approach.

**How do the latest drugs work?**

These medications target patients with different genotypes (the genetic material found within the virus). We have identified six genotypes. Seventy-five percent of Hep C patients in the United States are genotype 1 and we have an array of proven drugs that work very well for them.

The newest medication, Epclusa, is approved for all Hep C patients, but is especially effective for those with genotype 3, the patients who are hardest to treat. The FDA approved this drug in the last year and, for this group, it’s a big advance.

**How do you tailor treatment to each patient’s needs?**

Before these antivirals were developed, we had one drug (interferon) and tried to make it work for everyone. Now we take a much deeper patient history and tailor our approach to the individual. Among the questions we consider: Has the patient been treated in the past and failed to respond? How much liver disease or fibrosis is present, if any? Is there evidence of cirrhosis, or liver damage, occurring over the past few months or years? We put all these factors into an equation then look for the best regimen.

The American Association for the Study of Liver Disease and the Infectious Disease Society of America have a website with recommendations that help us to tailor treatment for each person. If there are three equivalent options, our choice of treatment may be dictated by patient’s insurance plan.

**What are the side effects of the new anti-virals? Are they easy to take?**

For most of these drugs, the side effects are pretty minor and include headache, fatigue, a little rash. One regimen, however, requires the addition of ribavirin, a drug that can cause anemia and more serious fatigue.
A Healthy Microbiome

Key for Liver Patients

Trillions of bacteria, fungi, and viruses live inside the human body. Some aid in digestion while others promote a healthy immune system. When these microbes get out of balance, this can set the stage for disease.

For more than three decades, NYP/Columbia researchers have been leaders in the study of these microbes. Since 2007, our scientists and clinicians have been participating in The Microbiome Project, funded by the National Institutes of Health, naming and describing its different elements.

More recently, Elizabeth C. Verna, MD, Assistant Professor Medicine at NYP/Columbia, received a major grant—more than a million dollars—from the National Institute of Diabetes and Digestive and Kidney Diseases to see if keeping a healthy microbiome after liver transplant surgery may help to prevent scarring of the liver and also cut down on the need for reoperation.

“In a normal person, the intestine contains these microbes, but in patients with chronic liver disease, including Hepatitis C, the intestine becomes a leaky sieve,” says Dr. Verna. “This results in a shift in the gut ecology, one that allows pathogens (bad bacteria) to proliferate. When patients come to a liver transplant—a complex operation—with an abnormal intestinal microbiome, this puts them at greater risk for liver injury.”

For three years, Dr. Verna has been studying the blood and stool samples of patients about to undergo a liver transplant then following their progress after the procedures. What has she learned so far? That it’s not enough to take a single snapshot of the microbiome after surgery. This environment changes over time, and so patients need to be tracked long-term. “Eventually we will know enough to target specific microbes or metabolic pathways for therapeutic interventions that will improve liver health in both the transplant and non-transplant patient,” says Dr. Verna.

This innovative approach will add to CUMC’s already advanced knowledge of liver disease.

Changes in the intestinal microbiome are likely very important factors in the development of liver inflammation, liver scaring (cirrhosis) and liver cancer. This research stands to benefit patients with many forms of chronic liver disease, including HCV and non-alcoholic fatty liver disease (NAFLD)—even those who will never need a transplant.

What’s unique about the kind of care offered at the Center for Liver Disease and Transplantation?

The Center has a multidisciplinary program, which means we look at Hep C from many different angles. We have seven hepatologists (liver experts), an infectious disease consultant who checks for co-infections, and a psychiatrist who helps patients deal with personal issues. Dedicated nurses assist us, gathering the information we need to get patients access to the best treatment and get reimbursed by their insurance. Our team cares for at least 500 individuals with Hep C every year.

In 2016, the Center also introduced a new technology called Fibroscan, an imaging technique that allows us to assess the condition of a patient’s liver without having to do a surgical biopsy.

Finally, our nationally recognized experts have performed over 2,000 liver transplants and are known for their care of patients with serious liver disease.

What is the outlook for patients with Hep C?

Our new therapies for Hep C are not just eliminating complications and producing more than a 90 percent cure rate, they are reducing our patients’ anxiety as well. In the past we used to “watch and wait” and carefully monitor certain individuals because drugs for Hep C were hard to take and we weren’t sure how well they would work. As a result, many people felt they were living with a time bomb and, in the meantime, worried that they might transmit Hep C to their loved ones.

Now our approach is to treat and be proactive. This is because we have medication that is easier to tolerate and we can pinpoint, with great accuracy, which drugs an individual will respond to. This represents a revolution in patient care.

Find more information, about our Center for Liver Disease and Transplantation here: www.columbiasurgery.org/liver

To set up an appointment, please call 212.305,8941.

Learn more about The Center for Liver Disease and Transplantation at Columbia here www.columbiasurgery.org/liver
You’ll be glad to know that you don’t have to sign up for a draconian diet or become a marathon runner to improve your heart health. Dr. Schuster’s patients make gains with manageable changes: they enjoy Mediterranean meals, engage in moderate exercise, learn how to lower their cholesterol, and stop smoking.

Medications can also reduce the risk of heart disease. “Everyone should know what their bad cholesterol (LDL) is, and how to lower it. Those who can’t take statins may be helped by red yeast rice,” says Dr. Schuster. “We spend a lot of time listening to our patients,” he adds, “then target our recommendations to their specific goals and needs.”

Men and women over 40 often seek out Dr. Schuster’s expertise as they approach the age that their parents succumbed to heart disease. “A father may have had a heart attack or bypass surgery at this stage of life,” Dr. Schuster notes. “Now the son or daughter wants to be proactive and is willing to make the necessary lifestyle changes to promote cardiac health. We can help.”

Dr. Schuster also oversees the cardiac rehabilitation program for patients who have had bypass surgery, stents or valves. “Preventive strategies may also be useful at this stage to help the arteries and heart stay healthy. It’s never too late to start good habits.”

Columbia’s Preventive Cardiology services include onsite lab tests and cardiac testing with same day results, followed by physician consults, and diet and exercise counseling. This comprehensive approach is offered at two convenient locations, at 635 Madison Avenue in Manhattan and in Stamford, Connecticut.

To make an appointment in New York, call 212.857.4954 and in Stamford, call 203.276.2323.

For more information and Dr. Schuster’s complete list of “How to Live to be 100,” see madisonavenuecardiology.com.

Learn more about our Aortic Surgery program: www.columbiasurgery.org/aortic

To make an appointment call 212.305.6380