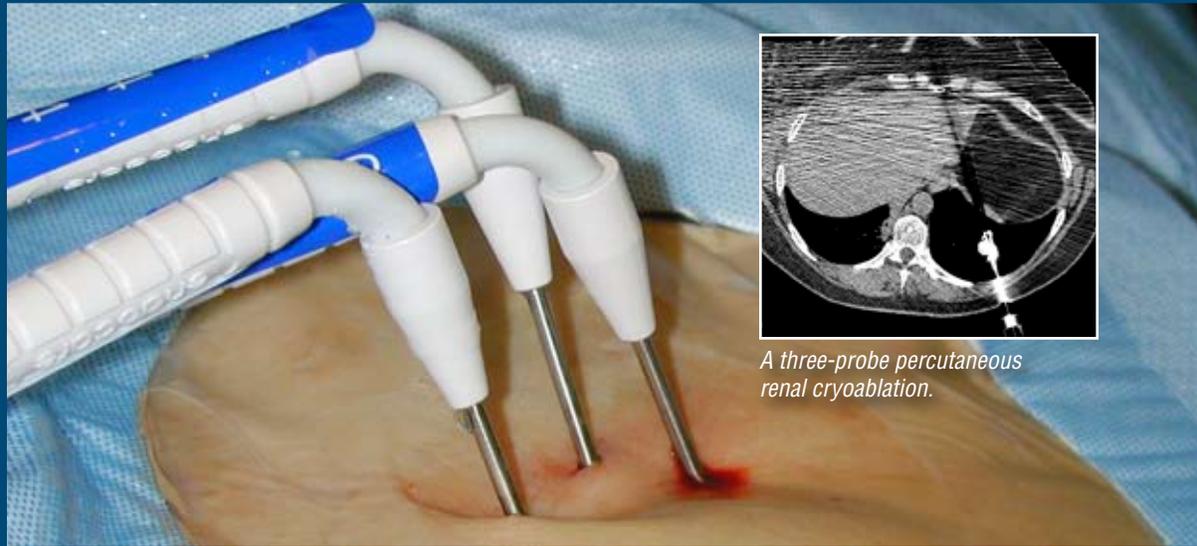


Fire and Ice: What's the Difference?

RF ablation is a modification of standard surgical electrocautery where current is passed through precisely placed electrodes, causing tissue heating. Physicians can place RF electrodes in and around tumors either percutaneously, laparoscopically or at conventional open surgery. Probe placement and tissue heating are usually monitored with ultrasound CT.

In **cryoablation**, argon gas is released into a probe physicians have placed in or around tumors. The argon gas rapidly expands, freezing the surrounding tissue to an extremely chilly -160 degrees Fahrenheit. Tissue is destroyed during the thawing process.



A three-probe percutaneous renal cryoablation.

Burn and freeze

For certain types of cancer patients, radiofrequency and cryoablation can make a significant difference

When surgery is no longer an option, when chemotherapy has run its course and radiation has reached its limits, Fred Lee Jr., MD, and his colleagues in UW Health's interventional oncology program step in to offer additional hope to patients

battling tumors in their livers, kidneys, lungs and bones.

Lee, a radiologist with the UW Paul P. Carbone Comprehensive Cancer Center, is one of several physicians who use image-guided minimally invasive techniques to perform radiofrequency (RF)

ablation and cryoablation for burning or freezing tumor tissue. Ablation has rapidly become one of the hottest procedures in radiology, and with good reason: Recent research has suggested that patients with certain non-operable liver and lung tumors can experience up to a 91 percent

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Obstructive Sleep Apnea
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Taking a Bold STEP



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Transformations Center

Hitting 50

Laparoscopic ileal pouch reconstruction reaches milestone

For the last four years, Bruce Harms, MD, and Charles Heise, MD, UW Health colorectal surgeons, have been perfecting their skills in laparoscopic ileal pouch reconstruction, a procedure in which surgeons remove the colon, rectum and anal canal lining, then create a new rectum using the end of the ileum. In early July, Heise and Harms completed their 50th laparoscopic reconstruction.

“As more and more people are becoming familiar with the advantages of laparoscopy, more patients want it,” says Heise. “Currently, nearly half of our cases are performed laparoscopically.”

Designed to treat patients with ulcerative colitis and familial polyposis, the laparoscopic procedure is performed similarly to standard ileal pouch reconstruction, except the colectomy is done laparoscopically. The rest of the surgery is performed through a seven- to eight-centimeter incision across or below the patient navel.

“There is minor variability in how doctors perform the procedure,” says Heise. When creating the pouch that serves as the ileal reservoir’s outlet, the J pouch is most commonly used; doctors at UW Hospital and Clinics specialize in the S pouch, which consists of three limbs instead of two.

Although the risks and complications of the laparoscopic procedure are similar to those for a standard reconstruction, the laparoscopic procedure offers some key benefits.

“The biggest advantage of the laparoscopic procedure is cosmetic” says Heise.

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Burn and Freeze *from page 1*

cancer-specific survival rate two years after treatment.

“One of the major limitations of cancer treatment is that only a fortunate few patients are able to benefit from surgical removal of tumors,” says Lee. “People present late, are elderly or infirm, or the tumors are located in areas that are difficult to resect. What we’re trying to do is take the patients our surgical oncologists can’t treat or have already treated and give them some of the benefits of tumor removal without the invasiveness.”

That’s refreshing news for many patients, who have often experienced multiple surgeries and treatments before contemplating ablation. Because the procedures can be performed using small incisions, even high-risk patients with multiple comorbidities are possible candidates for ablation. Patients who undergo percutaneous ablation typically recover rapidly, and can return to normal activity within 2-3 days.

UW Health is one of a handful of centers in Wisconsin that performs tumor ablation, averaging over 100 patients per year, and was among the first in the nation to begin using these procedures in 1994. Unlike single-specialty centers, UW Health’s interventional oncology program utilizes a multidisciplinary approach that encompasses oncology, surgery, radiology and transplant.

Patients with primary and secondary liver tumors comprise the bulk of UW Health’s RF cases, including patients with hepatitis B and C who are awaiting a liver transplant and those who have already undergone liver surgery. Whether a patient qualifies for ablation depends on tumor size, location, number and type. While RF is effective for many liver tumors, cryoablation is also being used to treat renal and painful bone cancer.

The risks to the patients are very low—much lower than with conventional surgery. The biggest danger RF poses to patients (especially those with severely diseased organs) is from bleeding caused as the needles pass through organs that have significant blood flow, or damage to non-targeted tissue in the vicinity of the ablation.

“We’re pretty aggressive in who we’ll treat,” explains Lee. “But we’re also cautious. We will turn down cases that are too high-risk, that will require too big a burn or might damage critical normal structures such as bowel or bile ducts.”

While current ablative technology is becoming more mature—improved devices now allow for the treatment of significantly larger areas—too few radiologists and surgeons understand how to use it to benefit patients.

“This is not a simple procedure,” says Lee. “You need to have very



Fred Lee Jr., MD

specialized skills to do it well, and you need to know something about cancer. We’re fortunate to have many experienced physicians here that have been successfully doing these procedures for a long time.”

Like many radiologists, Lee is eagerly awaiting microwave ablation, a technology that will allow physicians to heat tumors more quickly using multiple probes, allowing for larger, custom-shaped fields that will reduce the damage to surrounding tissue.

“There’s rarely one tool that will quickly and permanently treat cancer—we know that,” says Lee. “Being able to offer many different options is a tremendous advantage. Ablation is one of the tools we can use.”

To learn more about radiofrequency ablation at UW Health, visit uwhealth.org or call 1-800-622-8922.

Accessing ablation

Interventional oncology at UW Health is not a primary referral service. Physicians interested in referring patients who may be candidates for liver or bone RF and cryoablation must first contact the oncology team at the UW Paul P. Carbone Comprehensive Cancer Center, one of the surgical oncologists or, if the patient has liver dysfunction and also might be assessed for liver transplant, through doctors with UW Health’s transplant program.

UW child protection specialist brings expertise, commitment and compassion



Discovery of child abuse is among the most devastating occurrences any parent, teacher or physician can imagine. As horrific as the actual incident may be, the long-term effects of abuse—be it physical, sexual or neglect—are often more staggering. Fear, anxiety, depression, guilt, anger, hostility, and poor self esteem are just a few of the consequences that millions of abused children and survivors of child abuse deal with every day. In addition, nearly four children in America die each day as a result of abuse and neglect.

As a full-service children's hospital with a commitment to community service, UW Children's Hospital recently created a Child Protection Program designed to be a regional resource for Wisconsin, Northern Illinois and Eastern Iowa. Led by Medical Director Barbara Knox, MD, the Child Protection Program reflects an intensified UW commitment to diagnose, report and treat instances of suspected child abuse and neglect.

"Child abuse pediatrics is becoming a board certified sub-specialty," says Ellen Wald, MD, chair of the UW Department of Pediatrics. "There are about 19 programs around the country that provide the advanced level of training required, and we consider Dr. Knox an incredibly valuable and energetic addition to our faculty."

A 2002 UW-Madison Medical School graduate who recently completed a fellowship in Child Abuse and Neglect at Cincinnati Children's Hospital and Medical Center, Knox brings an incredible passion to helping abused children and their families.

"Our program at the UW provides a needed voice for children who cannot speak for themselves," Knox says. "When you treat children who are abused, you see the worst of the worst in humanity, but the satisfaction is there even if you save just one child."

Brenda Nelson, program director of Safe Harbor Child Advocacy Center, Inc. in Madison, says that Knox's arrival represents the last piece of the puzzle for comprehensive child abuse diagnosis and treatment.

"Child abuse is not pretty," Nelson says. "You've got to have a passion for helping get these kids and families on the right track, and Dr. Knox really has that. She not only brings the training and compassion, but also the willingness to deal with the legal system as needed."

If child abuse is suspected—be it through the appearance of suspicious bruising on the body or through something said by a parent or child—Knox is available for consultation to pediatricians, family practitioners, nurse practitioners and physician assistants 24 hours a day, 7 days a week.

"If there is a need for an immediate visit, I will meet a child and family day or night and I am happy to handle the entire referral. At the same time, I am very committed to two-way communication and will keep each referring doctor aware of the case's progression," says Knox.

How to contact Dr. Knox

If child abuse is suspected, Dr. Barbara Knox is available for consultation to physicians 24 hours a day, 7 days a week. She can be reached through the UW Children's Hospital paging service at **(608) 262-2122** or referred through the UW Children's Hospital Access Center at **(800) 472-0111**. You may also contact her office at **(608) 262-5087** or by e-mail at **blknox@wisc.edu**.

"I am happy to help referring physicians either as a source of telephone advice, or, if necessary, to arrange for transfer of a patient to UW Children's Hospital," Knox says. "For patients that I see, my services include photo documentation of injuries and submittal of the child abuse report to the appropriate Social Services agency, law enforcement personnel, the referring physician and the prosecutor's office."

Lee Kaplan, MD, a UW Health orthopedic surgeon, has spent much of his career treating cartilage injuries. Now, Kaplan hopes to use his research to achieve an equally lofty goal: resuscitating articular cartilage after traumatic injury.

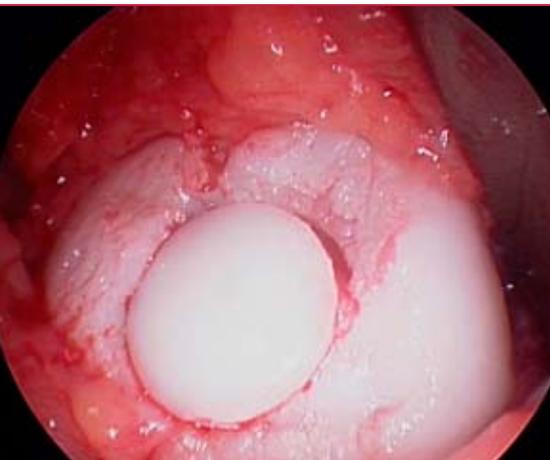
The UW Health Sports Medicine Center is among Wisconsin's largest referral centers for cartilage injuries, and Dr. Kaplan treats a significant number of patients with knee damage. Many

articular defects; in the latter, he uses it to cushion the area between bones.

The viability period for cadaver cartilage varies depending on the type. The cartilage used in allograft surgery remains viable for use in a transplant for 21-35 days, while cartilage used in a meniscus operation can be frozen up to five years. Screws typically hold articular cartilage in place, and meniscus cartilage is usually sewn into the damaged area.

injury," Kaplan says. "To accomplish that, we need to deliver growth factors to the injured area."

That's where Kaplan's research, supported by grants from the National Football League and other groups, comes in. Now in its sixth year, Kaplan's work has resulted in the development of a partial lesion thickness model, which is a developmental animal model. To create the model, an injury was induced and then



Concerning cartilage

Transplants seen as key to injury recovery, arthritis prevention

patients require a transplant operation because the lack of cartilage in an injured area can cause swelling and pain. These conditions, if left unchecked, will lead to arthritis.

"When you have a situation in which a patient has bone rubbing against bone, there can be significant pain," Kaplan says. "That area needs to be covered up to eliminate the discomfort."

Kaplan performs three types of operations to repair knee cartilage. In an osteochondral autograft, he removes cartilage from one section in the knee and transfers it to a damaged area, usually on the articular portion of the knee.

The other two procedures—allograft and meniscal transplant—require cadaver cartilage. In the former, Kaplan uses tissue to repair larger

ACL and leg instability injuries are examples of acute trauma which can lead to conditions such as arthritis. Kaplan performs operations on patients of all ages, but he says patients of different ages generally have different goals.

"Someone in their twenties wants to get back to a normal lifestyle," Kaplan says. "But someone in their forties is trying to relieve pain and prevent arthritis."

While surgery often helps patients achieve these goals, Kaplan's latest objective is to treat cartilage at the point of initial injury.

"We can prevent cartilage defects and arthritis from occurring if we treat them early after

evaluated over a year to gain knowledge of the lesion. The model will be used to test different delivery systems for the growth factors, which could include IGF, TGF beta and other anabolic agents.

Kaplan is excited by the possibilities.

"If the growth factor delivery system pans out, it isn't just the knee that could be improved," he says. "Any joint in the body could be improved, including the shoulder or ankle. And anybody will be able to benefit."

For more information about cartilage transplant at UW Health Sports Medicine Center, call (608) 263-8850 or go to uwsportsmedicine.org.

hitting 50 *from page 2*

In addition, patients typically require less post-operative pain medication, have shorter hospital stays and can return to daily activities and work sooner.

The laparoscopic procedure takes five to eight hours to perform, about two hours longer than a standard

reconstruction. Ideal candidates for the surgery include healthy patients who have a normal weight and are not taking steroids.

Heise believes that for specialty-focused programs like his, the laparoscopic

procedure will eventually become the gold standard for ileal pouch reconstruction.

"This is what we do," he says. "Our experience and comfort level allow us to offer more varieties of advanced laparoscopic procedures."

To learn more about laparoscopic ileal pouch reconstruction or make a patient referral, go to uwhealth.org or call (608) 263-1378.



Unsweet dreams

Obstructive Sleep Apnea Syndrome is a growing pediatric problem

In the early 1980s, when Christopher Green, MD, was taking his oral pediatric board exams, the instructor asked him a question: What percentage of children with Down's Syndrome are likely to develop obstructive sleep apnea syndrome (OSAS)?

Green, now a pediatric pulmonologist with UW Health, knew the answer: Between 70 and 100 percent. But he didn't know that more than two decades later, a major focus of his research and clinical care would involve that same question. Or that OSAS, a condition in which constriction of the upper airways interrupts a patient's normal breathing cycle during sleep, would begin to affect non-Down's Syndrome children as well.

"Just like adults who have thick necks are at higher risk to develop OSAS, we're finding that children who are struggling with weight are more at risk as well," says Green. "Excess weight makes an individual's airway smaller, and that can have a disruptive effect on a child's nighttime breathing. It's becoming a big issue."

To help parents and physicians recognize and address this growing problem, Green, along with Mark Kiehn, MD, a UW Health craniofacial surgeon, has formed a Pediatric Sleep Apnea clinic. Currently, the two treat

patients at the Waisman Center in Madison two afternoons a month; in the fall, the clinic will expand its hours as it moves to a new location in UW Research Park to become part of the new UW Medical Foundation/Meriter Hospital Sleep Disorders Center.

Experts place the prevalence of OSAS in non-Down's children between 1 and 2 percent. Green believes that number is low, in part because it doesn't account for the spectrum of pediatric sleep disorders that have similar effects, from simple snoring and obstructive hypopnea to upper airway resistance syndrome.

"Too frequently, parents and physicians either fail to recognize the problem, or believe that snoring or sleep apnea is something a child will grow out of," says Green. "But emerging research is showing substantial neuro-behavioral effects in children who experience nighttime obstruction, even in those who simply snore."

Those effects include hyperactivity, aggressive and/or antisocial behavior, as well as difficulty with concentration, learning and memory, all of which can have a profound effect on school performance.

"As adults, we know that if we don't get an appropriate amount

of sleep, we may not drive our car as well the next day, or perform well at work," he notes. "The same is true for children whose sleep patterns are disrupted."

Children with Down's Syndrome remain 17 times as likely as the general pediatric population, to experience OSAS due to a set of factors that predispose them to the syndrome, including:

- low muscle tone that drops further at night, causing the pharyngeal pathway to collapse, blocking normal breathing;
- subtle immunological defects that lead to chronic nasal infections;
- large tongues, adenoids and tonsils; and
- brachycephaly.

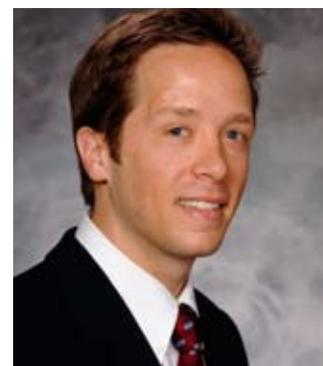
Non-Down's children are likely to suffer OSAS if they are obese or have enlarged tonsils and adenoids.

A sleep study can help to diagnose the condition. Once recognized, multiple treatments can help to alleviate it. The first-line defense is surgical removal of the tonsils and adenoid glands. "You have to take out both, or you won't fix the problem," says Green.

If patients fail to respond to surgical treatment, other options include soft-tissue alignment,



Christopher Green, MD



Mark Kiehn, MD

mandibular distraction and continuous positive airway pressure (CPAP).

To learn more about OSAS and UW Health's Pediatric Sleep Apnea Clinic, or to make a patient referral, visit uwhealth.org or contact (608) 263-9425.

Challenging national asthma guidelines

Two studies will help determine if use of antibiotics can improve asthma symptoms



The national asthma-treatment guidelines are clear: Antibiotics should not be used routinely when asthma patients have attacks.

But two new studies—one in adults and one in children—at University of Wisconsin School of Medicine and Public Health will test these current recommendations by analyzing whether using antibiotics improves the condition of patients with uncontrolled asthma symptoms.

UW is one of eight centers in the nation (and the only one in Wisconsin) participating in the Macrolides in Asthma (MIA) trial through the Asthma Clinical Research Network of the National Heart, Lung and Blood Institute. The MIA trial at UW aims to enroll 144 adults (age 18–60) who have moderate to severe asthma symptoms despite use of standard medical therapy. After an introductory period during which all participants will use the same standard inhaled medication, those eligible for the study will receive either the antibiotic clarithromycin or placebo for 16 weeks in addition to the inhaled corticosteroid medication. The research team will assess symptom control, quality of life, and tissue samples to see if those on antibiotics do better than those on placebo.

“There is emerging evidence from other recent research that, for some patients, adding an antibiotic to standard therapy may improve asthma symptoms considerably,” says Robert F. Lemanske, Jr., MD, the principal investigator for both UW studies. “But the question is far from settled. Even if antibiotics are effective

against asthma, the medical community does not yet understand how they might work against the disease—by reducing inflammation, curing a minor infection, or both. These studies are very exciting because they could open up a whole new line of treatment for asthma.”

More than 20 million Americans have been diagnosed with asthma, and the incidence of the disease is growing quickly for reasons that are not well understood. Although most patients do well on conventional medication therapy, some do not respond satisfactorily to current treatments.

Lemanske says current national guidelines discourage routine use of antibiotics because of concerns about overuse of antibiotics and the development of resistance with recurrent or chronic use of them.

Lemanske, who specializes in pediatric asthma, is also the principal investigator for the study of antibiotic use in children with asthma. The “MARS” trial (Montelukast or Azithromycin for Reduction of Inhaled Corticosteroids in Childhood Asthma) will assess if children on significant dosages of inhaled corticosteroid medications to control their symptoms would benefit from adding one of two medications: an antibiotic (azithromycin) or a low-potency anti-inflammatory medication (montelukast). Although inhaled corticosteroids are a mainstay of pediatric asthma treatment, physicians are wary of side effects from long-term use and hope to find ways to reduce

the doses given to children by using alternative medications that are approved for use in children.

The two medications that will be studied are both FDA-approved—azithromycin for a number of common childhood diseases and montelukast specifically for pediatric asthma.

The MARS study seeks to enroll 42 children in the UW trial (210 nationwide). Potential participants must be between the ages of 6 and 17 years at enrollment and must have moderate to severe asthma requiring significant corticosteroids for control. Following National Institutes of Health guidelines, the goal is to achieve 33 percent minority participation and at least 40 percent female participation.

Christine Sorkness, Pharm D, of the UW-Madison School of Pharmacy, is co-investigator with Dr. Lemanske for both of these studies.

Those interested in the MIA study (for adults with asthma) may call study coordinator Ann Sexton, MPH, at (608) 265-8291 or visit the Web site www.uwasthmastudies.org and click on the ACRN link.

Those interested in the MARS study (for children with asthma) may call study coordinator Sarah Garibay, RN, BSN, at (608) 263-3360 or visit www.uwasthmastudies.org and click on the CARE link.

Taking the first STEP

UW surgeon performs rare gastrointestinal procedure for the first time in Wisconsin

Young patients with short gut syndrome—a shortened intestine caused by abnormalities in utero or twisting of the intestine after birth—face multiple challenges. In patients with insufficient intestine, the organ often ends up widened and less effective at absorbing food. Patients must depend on intravenous feedings, a treatment that carries its own complications, including infections, liver failure and worse.

“What has traditionally happened with these patients is that if they fail or get into trouble from their IV feeding, they either do not survive or they need a bowel transplant,” explains Dennis Lund, MD, surgeon-in chief at UW Children’s Hospital.

Lund recently became the first surgeon in Wisconsin to perform a new operation that is a safer, more effective treatment for short gut syndrome: serial transverse enteroplasty (STEP). The operation was designed by a pair of surgeons at Boston Children’s Hospital, where Lund practiced before coming to UW.

In STEP, surgeons place a special surgical stapler partially across the widened intestine

multiple times at right angles, in an alternating pattern, creating a long, narrow channel shaped like a staircase or an accordion.

“You’re taking a piece of intestine that’s wide and not very efficient and you’re making it more efficient by giving it more motility, because it’s narrower and has better geometry,” explains Lund. “That’s advantageous, because when the intestine gets dilated, it becomes static and loses its ability to propel food.”

In widened, static intestine, bacteria collect and lead to overgrowth and recurrent infection.

Short gut syndrome affects only a handful of pediatric patients, but in those patients the complications of prolonged intravenous feeding can be devastating. Lund performed the STEP on a 20-year-old Watertown resident born with an abdominal wall defect, who lost much of her intestine before birth.

Patients as young as 1-2 years old are candidates for STEP, provided their bowel

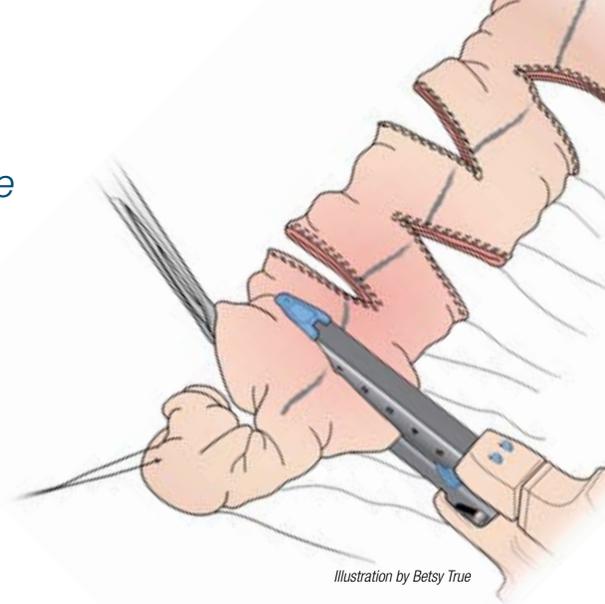


Illustration by Betsy True

dilates appropriately. Lund believes that STEP is a huge improvement over the Bianchi procedure, an operation in which the bowel is split lengthwise and the ends sewn together.

“An intestinal lengthening operation, if successful, may be a way for patients with short gut syndrome to avoid intravenous feedings or intestinal transplantations,” he says. “The best thing about STEP is that you’re not taking any absorptive surface away.”

For more information about STEP or to refer a patient, visit uwhealth.org or call (608) 263-9419.

CLINICAL TRIALS UPDATE CLINICAL TRIALS UPDATE

Examining Exmenestane

Researchers at the UW School of Medicine and Public Health’s Office of Clinical Trials are seeking postmenopausal women who may be at increased risk for breast cancer to help evaluate the role of exemestane in the prevention of the disease.

Exemestane is a member of a class of drugs called aromatase inhibitors currently being used to treat breast cancer in women around the world. Results from a study published in the March 2004 issue of the *New England Journal of Medicine* demonstrated that

exemestane was able to prevent the occurrence of new cancers in the opposite breast of women who had already had breast cancer, suggesting that it may prevent the disease in healthy women.

The ExCel research study will examine the potential benefit of exemestane in postmenopausal women, 35 years of age or older, who have an increased risk of developing breast cancer. Risk factors include, but are not limited to, age, family history, age at first menstrual period and age at time of first child’s birth.

Candidates will undergo screening to determine eligibility. To determine breast cancer risk, the researchers, led by Laura Sabo, MD, a gynecologist at UW Health and one of the study investigators, will use the risk factors mentioned above. If eligible, women will undergo a routine health examination, routine blood tests, a mammogram and a bone mineral density test.

Coordinated by the National Cancer Institute of Canada Clinical Trials Group (NCIC CTG) with the support of Pfizer, Inc. and

in cooperation with women’s health and cancer centers in the United States, Canada and Spain, the ExCel research study will follow more than 4,500 women over a five-year period. The study is one of several breast cancer trials being conducted at the UW Paul P. Carbone Comprehensive Cancer Center.

For more information about the ExCel research study should contact Lori Wollet, RN at (608)287-2856 or visit www.excelstudy.com.



Transformations now open

On October 2, 2006, UW Health Transformations opened its doors as the region's only free-standing cosmetic services center uniquely offering a vast array of physician expertise. At the onset, 13 UW Health physicians representing five clinical disciplines

(plastic and reconstructive surgery, otolaryngology, ophthalmology, vascular surgery and dermatology) will offer patients both cosmetic and functional procedures in a state-of-the-art facility.

"We're excited about what UW Health Transformations will mean for our community," says Michael Bentz, MD, professor and chairman, division of plastic and reconstructive surgery, UW School of Medicine and Public Health. "This center allows us to support our educational requirements for residents and fellows, while keeping up with market demand. Interest in cosmetic services is rapidly increasing and we're pleased that our patients will have access to our skilled physicians in this wonderful new facility."

The new center offers consultations, procedures, surgeries and follow-up appointments all within the same building. In addition to surgical procedures, UW Health faculty will provide the latest trends in facial rejuvenation, including injectibles and offer aesthetician services plus a line of skin care products and cosmetics.

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UW Health Transformations is located at 2349 Deming Way in Middleton, just off the West Beltline Hwy. Physicians interested in referring patients for treatment should contact the center directly at (608) 836-9990 or (866)447-9990. More information, including a video-taped discussion with UW Health physicians is available on the Web at uwhealth.org/transformations.

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