Diabetes mellitus (DM), a chronic disease in which the body does not produce or properly use insulin, now affects nearly 21 million adults and children in the U.S. Insulin is a hormone needed by the body to convert carbohydrates into energy. When the body is unable to produce or regulate its own insulin, sugars accumulate in the blood and are eliminated through urine; therefore, the body’s cells do not get the energy they need.

While a tendency to diabetes runs in families, environmental factors such as excess weight and lack of exercise also play a role in development of the disease. Rates of diabetes in both adults and children have been increasing. According to the Centers for Disease Control, the number of people with diabetes in the U.S. more than doubled between 1980–2002.

There are two major types of DM. In the less common Type 1 diabetes, the body is unable to produce natural insulin and insulin must be administered by injection. The cause of type 1 diabetes (T1DM) is unknown, but there is an inherited tendency and some cases may be the result of an autoimmune response to viruses. Type 2 diabetes (T2DM), affecting more than 90% of the diabetic population, tends to occur in individuals with family history of DM, or who are overweight, and/or physically inactive. The risk of developing T2DM also increases with age.

If left uncontrolled, DM can lead to a range of serious health problems, including kidney disease, eye disease, cardiovascular disease, stroke, and damage to the extremities which may require amputation. Diabetes is the sixth leading cause of death in the U.S.

As part of YHP’s commitment to helping monitor and maintain the health of its members with diabetes, the Pharmacy has evaluated several models of glucose monitors for ease of use, accuracy and other factors, and will soon announce which model will be recommended for patients. Plans are to make the newer, enhanced meters available beginning in June. As in the past, kits complete with starter strips and supplies will be provided to patients for free. Refills on strips should be less expensive than the current brand, as will be meter-specific lancets, and other materials needed for testing. Current YHP members who are using glucose meters are invited to learn about and try the new monitors, and YHP pharmacists will help in contacting patients’ clinicians to automatically change their prescriptions in order to obtain a new meter.

continued on page 2
Many studies have shown significant reduction of long term...complications with optimal blood glucose [sugar] control, keeping glucose levels at or near normal.

In addition, according to the American Diabetes Association, before people develop type 2 diabetes, they usually have “pre-diabetes”—blood glucose levels that are higher than normal but not yet high enough to be diagnosed as diabetes. About 41 million U.S. adults have pre-diabetes. Individuals with pre-diabetes are also at increased risk of cardiovascular disease. Routine exercise of 30 minutes a day and weight loss have been found to prevent the development of diabetes in this population.

The good news is diabetes can usually be well-controlled with lifestyle changes and medication. Many studies have shown significant reduction of long term complications with optimal blood glucose [sugar] control, keeping glucose levels at or near normal. Monitoring those levels is one of the best ways of determining how well a treatment plan is working.

How is glucose monitored?

Your clinician can assess your glucose control with a blood test called hemoglobin A1C (Hgb A1C, or A1C), which measures your average glucose control over the previous three months.

In addition to checking the A1C levels periodically, glucose levels need to be monitored several times throughout the day. These glucose level checks (also called “fingersticks”) should be done before and two hours after any meal and at bedtime. In people with type 1 diabetes, more frequent fingersticks are required in order to estimate how much insulin is needed before meals.

Frequency of testing in people with T2DM varies depending on their overall glucose control and individual circumstances.

For example, a person under good control may need to check only once per day; however, those tests should be done at varying times. For those with newly diagnosed DM, who are under active medication adjustment, whose diabetes is poorly controlled or who are experiencing changes in lifestyle (e.g., traveling), more frequent testing is recommended.

When should I check my levels?

Many patients only check their fingersticks before breakfast. However, recent studies showed that elevation of glucose after meals (called postprandial hyperglycemia) is associated with higher risk of diabetes-related complications. Therefore, it is important to check fingersticks at different times throughout the day and keep accurate records of testing times. Checking fingersticks two hours after eating can also help to assess the effects of the types and portions of food consumed. Additionally, it is important to check glucose more often after exercise and excessive alcohol intake, as both situations could cause immediate or delayed hypoglycemia.

How does knowing my glucose levels help manage diabetes?

People who check their fingersticks tend to have better diabetes control and, therefore, a lowered risk of developing diabetes-related complications. Checking can detect high (called hyperglycemia) and low (called hypoglycemia) glucose levels, allowing choices to be made about what to eat, portion control, and insulin doses.

While blood glucose meters are reasonably accurate, there can be variability of 10–20% from one unit to the next, so you should use common sense when interpreting the readings, and check again if there is any discrepancy between the glucose reading and your physical symptoms.

Make sure to bring your glucose records to each clinical visit. Your clinician will examine your glucose pattern and determine if adjustments are needed. For instance, if you have a tendency to have higher glucose readings after dinners, your clinician might recommend adding a medication before dinner, reducing dinnertime carbohydrate intake or exercising after dinner.
terrorist acts and natural disasters are all too often in the news, and we are hearing many expressions of concern about serious infectious illnesses, especially a major epidemic of influenza. Given the difficulties we have seen in responding adequately to events such as Hurricane Katrina, many of us wonder where and how catastrophic event planning is happening—and whether even the best plans can be implemented effectively.

I can report that Yale University has been actively planning for emergencies and that partnerships are being forged between Yale University Health Services, the Schools of Medicine and Nursing, the Provost’s Office, the Office of the Vice President and Secretary, Environmental Health and Safety, the Yale Police and University Security to name just a few—as well as with outside agencies such as the New Haven Health Department and Yale-New Haven Hospital.

YUHS has a central role in this planning because of our clinical responsibility for over 30,000 individuals who depend on us for health care. Using input from experts from many fields, we study an array of possible occurrences, ranging from a local computer systems failure to natural disasters, terrorist events and global pandemics (e.g., a massive epidemic of an infectious illness such as influenza). We assess: 1) the likelihood that an event might happen; 2) the degree of threat it would pose to the health care delivery system and the operations of the University; and 3) our present state of preparedness to handle that event.

If an event is unlikely and could be handled easily with existing resources, it becomes a lower priority. Our focus shifts to situations with the potential to tax existing health care systems. We then design scenarios that serve as bases for regular “table top exercises,” in which we analyze the responses necessary in an emergency, and we conduct actual drills with broad participation across the University.

Examples of some of these emergency preparedness exercises have included responding to a hypothetical health threat requiring urgent vaccination of our population or immediate provision of medication to thousands of people. Drawing on our experience in vaccinating thousands of people against influenza each year, and from our experience with smaller scale outbreaks of infections such as hepatitis A, we have developed plans to treat quickly and effectively large numbers of people at multiple sites on campus.

Another tabletop exercise and drill involved the scenario of a bomb explosion with multiple casualties. In this drill, we used actors as victims and actually went through the steps involved in caring for people in the event of an influx of injured patients.

As we plan for health care delivery during disasters, we are addressing many difficult questions that face every university. Some of these include: how health care fits into a comprehensive university-wide emergency plan; how and where we could provide care to a large number of injured or ill people; how we could ensure timely access to medical supplies; whether and how we would effectively isolate or quarantine people; how we would work with clinicians in the Schools of Medicine and Nursing; how we would work with the hospitals at the point where their facilities can no longer accommodate additional injured or ill patients; and how our emergency preparedness plans will fit into city and state planning. Our network of relationships with other large universities also provides ideas that we can incorporate into disaster preparedness planning.

This summer YUHS will be spearheading a tabletop exercise and practice drill involving many of our partners, with the scenario of an epidemic in conjunction with various confounding events—a failure of computer systems, an off-hours emergency in which health care personnel must be quickly mobilized, or a situation in which a significant portion of the health care response team is affected by the epidemic.
Some tips about safe use of microwave ovens:

**Containers**
- If you purchase a product packaged in a microwavable container [e.g. a frozen dinner], use that container only once. Such containers are guaranteed safe for one use, but the polymer in the packaging can start to break down after that.
- Reusable plastic containers made specifically for use in the microwave can be used several times; they are tested for safe microwave use of up to 240 hours.
- Containers used for cooking and reheating should be labeled “microwave safe.” Thick, non-decorative glass is also safe. So are wax paper, cooking bags, parchment paper, microwave-safe paper plates and white microwave-safe paper towels (the dyes used in non-white paper towels haven’t been approved for use with food in the microwave).
- Never cook or reheat food in yogurt, margarine, or dessert topping tubs. They can warp or melt, possibly causing chemicals to migrate into the food. Never use thin plastic storage or grocery bags (they can melt), brown paper bags or newspaper (both sometimes contain bits of metal and the bags’ seams could contain glue), or aluminum foil (it can cause dangerous electrical arcs).

**Defrosting**
- Remove food from its packaging before you defrost it in the microwave. Foam trays and plastic wraps can melt, which can cause potentially harmful chemicals to migrate into the food.
- If you’ve defrosted meat, poultry, egg casseroles, or fish in the microwave, cook it immediately.

**Cooking**
- Arrange food evenly in the dish and add liquid if needed. Cover with a loose lid to let steam escape. (If you use plastic wrap, make sure it doesn’t come in contact with the food.)
- Don’t cook large cuts of meat on high power (100%). Use medium power (50%) and a longer cooking time, so the heat can reach the center without overcooking the outer areas.
- If your microwave doesn’t have a carousel, stir or rotate the food midway through the microwaving time.
- If you’re partially cooking food in the microwave before you finish it on the grill or in a conventional oven, transfer the microwaved food immediately. Warm, partially cooked food is a breeding ground for bacteria.
- Use a food thermometer or the oven’s temperature probe to verify that meat, poultry, and casseroles have reached a safe temperature. Place the thermometer in the thickest area of the meat or poultry—not near fat or bone—and in the innermost part of the thigh of whole poultry. Check in several places to be sure red meat reaches 160° F, poultry reaches 180° F, and egg casseroles reach 160° F. Fish should flake with a fork. Leftovers should reach 165° F.
- Don’t cook whole, stuffed poultry in the microwave. The stuffing might not reach the temperature needed to destroy harmful bacteria. Heat ready-to-eat foods like hot dogs, fully cooked ham, and leftovers until they’re steaming hot.

And a tidbit about popcorn....
- Do you wonder why microwave popcorn bags are clearly marked “this side up” or “this side down”? The bottom of the package contains a metallized surface that absorbs microwaves and becomes hot enough to pop the popcorn. That “heat susceptor” cannot generate enough heat to trigger the release of chemicals like packaging adhesives because it’s sealed inside a pouch in the bag itself.

The above information is adapted from material published by the Center for Science in the Public Interest.
Healthy Ideas

Jet lag results when air travel across time zones leaves a person feeling “out of sync” with the local time at their destination. Due primarily to disruption of the body’s normal circadian rhythms (the “light/dark” cycle), jet lag can be made worse by sudden changes in climate or seasonal conditions, as well as by the reduced oxygen, changes in air pressure, excess noise and low humidity common-ly experienced during air travel.

Jet lag causes a combination of symptoms, including daytime sleepiness, disorientation, poor concentration, fatigue, gastrointestinal discomfort, headaches, difficulty falling asleep, and nighttime wakefulness. Symptoms can last from a day to a week or longer, depending on the person and the number of time zones crossed.

To minimize jet lag:

• Keep activities light for the first day or two upon arrival to allow for adjustment to the new time zone.
• Gradually shift eating and sleeping patterns to fit the local time schedule.
• Medication schedules may need to be based on elapsed time rather than dosing at a specific clock time. Check with your clinician before traveling if you know you will be using medica-tion during your trip.

Lagging behind?

Sunscreen is not forever

Sunscreens can deteriorate over time, so check for an expiration date. If you can’t find one, or if the product seems to have dried up or you see any changes in color or consistency, be safe and buy a new supply.

Follow the manufacturer’s directions regarding reapplication or you risk not getting the protection that you need. Though recently developed sunscreens are more resistant to loss through sweating and getting wet than previous formulas were, you should still reapply sunscreen frequently, especially during peak sun hours or after swimming or sweating.

New pharmacist joins staff

Jason Tremblay, PharmD has joined YHP as a staff pharmacist. He received his doctorate at the Massachusetts College of Pharmacy and Health Sciences. He has extensive experience in retail, hospital and community pharmacies and was most recently a senior pharmacist at Brigham and Women’s Hospital in Boston.

YHP staff

Congratulations to James Perлотto, MD, chief of Student Medicine and Dorothy vanRhijn, MD, chief of Employee Health—who were both included on the recent list of “best doctors in Connecticut” published in Connecticut magazine.

Doris Foell wins nursing honor

Doris W. Foell, APRN, MSN, BC, CCM, manager of the YHP Department of Care Coordination, is one of this year’s recipients of the Nightingale Award for Excellence in Nursing. The Nightingale Award was created in 2001 by the Visiting Nurses’ Association (VNA) of South Central Connecticut in collaboration with the Hospital of Saint Raphael and the Community Foundation for Greater New Haven. The award, whose recipients have been nominated by their peers, celebrates nurses who: epitomize the best qualities in patient care; demonstrate a commitment to the community served; and exemplify lifelong professionalism.

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Vicki Eisler, YHP patient representative, was honored with the Apex Award from the Society for Healthcare Consumer Advocacy at the organization’s 2006 conference in Atlanta. The award is “designed to acknowledge and promote individual achievement of professional excellence in the field of patient advocacy and consumer affairs.”

Barry Goldberg, MD, chief of Athletic Medicine, is the chair of the medical safety committee of USA Baseball. The organization was recently awarded $500,000 from the Yawkey Foundation for a nationwide study aimed at investigating and preventing injuries in young pitchers. Goldberg will be one of two principal investigators.

Amy Davis, MSN, APRN, a member of the Dermatology Department, has had an article accepted for publication in The Journal of the American Academy of Dermatology. The article discusses common epidemiological factors, successful treatment approaches, and the literature related to a rare fungal infection.

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Staff accomplishments

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Blood pressure monitoring

The Office of Health Promotion and Education conducts blood pressure screenings on the 4th floor of YUHS on the first Tuesday of each month from 9:00 to 11:00 am and at many campus locations for YHP members who are not currently being treated for a blood pressure problem. Consult the YHP website for dates and places: www.yale.edu/uhs.

Pediatric vision screening

The Ophthalmology Department will be offering basic eye screenings for children [with an emphasis on those 3–6 years old] during July and August. These screenings will test visual acuity and are not full exams; if a child does not perform at a normal level, a full eye exam will be suggested and can be scheduled at that time. The screenings are by appointment and children must meet the following criteria:

- no history of eye disease
- no family history of amblyopia [“lazy eye”]
- no family history of strabismus [“wandering eye”]
- no family history of congenital eye disease

Please call the Pediatrics Department [203.432.0206] to schedule your child’s screening or if you have any questions.

Graduation day

Yale University graduation is Monday, May 22. Parking will be tight and traffic in the area will be heavy, so plan extra travel time or consider postponing non-emergency trips to the health center until after graduation.

Summer hours

- The last session of evening primary care clinics [Internal Medicine, Ob/Gyn and Pediatrics] is Wednesday, May 17.
- Beginning the week of May 22, primary care clinic hours are 8:30–5:00. Evening hours in these departments will resume after Labor Day.
- Summer hours in the Pharmacy begin on Monday, July 10 and continue through Saturday, August 19. Summer Pharmacy hours are Monday–Friday from 8:30–5:45 and Saturday from 8:30–3:30. Normal hours will resume on Monday, August 21.

Cancer support group

Life Options is a support group for adult YHP members diagnosed with cancer, regardless of type of cancer or stage of disease. The group meets weekly with a facilitator. There are three 15-week programs each year, and members can enroll in consecutive series of meetings. The group is partially funded by the Edith S. Hallo Fund and by a small weekly fee charged to each participant. To enroll or for more information, contact the facilitator, Naomi Panza, MSW, at 203.432.0290.

Requesting records?

Requesting records to be sent outside of YUHS? We are glad to provide up to ten (10) pages of records at no cost, including copies for personal use and those sent to doctors’ offices, hospitals, insurance companies, attorneys, employers, and others. There is a 65 cents per page charge for any additional pages beyond the first ten (10).

Cancer support group
Energy replacement drinks often brightly-colored hype

The constant advertising of sports beverages and high energy drinks may lead us to think that they are essential for anyone who engages in any physical activity. Sports drinks can be helpful for athletes who need to replace fluid, carbohydrates, and electrolytes during prolonged periods of strenuous exercise. However, such drinks can add unwanted calories and are not needed for exercise sessions that last less than an hour. Under normal conditions for most people, plain water is fine for hydrating during and after exercise.

Be aware of marketing techniques that attempt to induce children to purchase these beverages by use of an array of brightly colored bottles and well-known sports figures as spokespeople.

For more information, see the position paper on nutrition and athletic performance from the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine at www.eatright.org/cps/rde/xchg/ada/hs.xsl/advocacy adap1200_ENU.HTML.htm.

There are plenty of choices for purchasing prescription medications but as you search for the best price be careful about the sources of your medications. Counterfeit drugs are on the rise and getting fooled by a deal that is “too good to be true” could mean at the very least throwing away your money and, at worst, being sickened by drugs that aren’t what they pretend to be. The Food and Drug Administration (FDA) and drug companies are working hard to keep counterfeit drugs out of the U.S. supply but the consumer also has a role to play.

Simply: counterfeit drugs are not what they say they are. They may not have the same amount of active ingredients as the genuine drug or may contain the wrong active ingredients or have no active ingredients at all. The FDA learns about counterfeit drugs through a voluntary reporting system put in place by the drug companies. The FDA also hears about counterfeit drugs from consumers and health care professionals. Several technologies are available to help stop counterfeiting in the United States; these include tamper-proof packaging, special holograms and watermarks that would be difficult for criminals to copy.

Still, counterfeit drugs are out there. While legitimate drugs are sold in many ways, including the world wide web/internet, so are counterfeit drugs.

While purchasing medications from the internet can be economical or convenient, there are illegal websites that may sell contaminated or counterfeit medications or medications that have not been approved by the FDA. These sites may also deliver the wrong medication in the “right” packaging or take your money and never deliver anything in return.

Tips for avoiding counterfeit drugs:

- If the deal seems too good to be true, it probably is.
- Make sure the websites you deal with require actual prescriptions in order to purchase medications.
- Do not purchase prescription medications from websites that advertise “no prescription necessary”.
- Do not use online questionnaires in lieu of prescriptions. You don’t know the qualifications of the people reading the questionnaires [if they are read at all!]. The potential risks associated with taking any medications [contraindications, allergies, drug-drug interactions] are not likely to be uncovered outside of the traditional clinician-patient-pharmacy relationship, where physical exams and patient histories are part of the prescribing process.

Information provided by Martha Asarisi, RPh
Ever wonder what is really meant when the clinician says, “You’ve sprained your ankle”? Here are definitions of some terms related to common injuries.

**Cartilage.** A type of dense connective tissue that contains no blood vessels. Cartilage is found in the joints, the rib cage, the ear, the nose, in the throat and between intervertebral disks.

**Contusion.** A bruise to any body part. Bruising involves breaking of the blood vessels, often resulting in the familiar “black and blue” mark. Contusions to limbs are not serious, but a brain contusion can be.

**Fracture.** A break in a bone. There are multiple types of fractures.

**Hamstrings.** The three muscles that make up the back of the muscle group on each thigh.

**“itis”** means an inflammation (i.e. tendonitis is an inflamed tendon).

**Laceration.** A cut in the skin, or a cut through a muscle or tendon.

**Ligament.** A piece of connective tissue that secures two bones together. The ACL (anterior cruciate ligament) connects the thigh bone (femur) to the shin bone (tibia).

**Meniscus.** Also known as cartilage, usually associated with the knee. It acts as a shock absorber between bones and is also found at other joints, such as the jaw. The meniscus thins with age.

**Pinched nerve.** Pressure (not actual squeezing) on a nerve, usually as it exits the vertebrae, producing numbness, tingling and other abnormal sensations along the path of the nerve.

**Quadriceps.** The four muscles that make up the front of the muscle group on each thigh.

**Rotator cuff.** The four muscles that make up your shoulder muscle group, responsible for all shoulder movement, such as putting on a jacket, scratching your back and raising your hand.

**Spasm.** A muscle contraction that occurs when the body is trying to protect itself from additional movement. It is often the result of a muscle strain and, while most spasms resolve themselves, you may need help for a particularly stubborn one.

**Sprain.** The injury that occurs when you twist ligaments beyond their normal range of motion.

**Strain.** The injury that occurs when you overuse a muscle. A low back strain, for instance, is a common result of too much snow shoveling.

**Tendon.** A piece of connective tissue that connects a muscle to a bone. Your Achilles tendon connects your calf muscle to your heel.

Most medical terms can be explained in lay language, so make sure that, before you leave your clinician’s office, you ask for explanations of any terms unfamiliar to you.