As we age, drugs affect our bodies differently. Some may be more or less potent, and others can be risky at doses that would have been safe in our earlier decades.

There are several reasons for these age-related changes.

- Our metabolism slows. As a result, the liver and kidneys may take longer to clear some drugs from our system or to break down prodrugs into their active, therapeutic forms.
- We, in general, lose muscle mass with age. This alters the residence times of both fat- and water-soluble drugs in the body, as well as their distributions. Because muscle holds relatively more water than fat, fat-soluble drugs tend to reside in the body for a longer period of time while water-soluble drugs are flushed out faster.
- We often take several medications at once, as older adults are more likely to be coping with multiple chronic conditions. This is perhaps the biggest complexity in deciding whether prescribing a new drug is safe.

To help improve the care and well-being of older adults, in 2012 the American Geriatrics Society and a panel of medical experts published a list of medications that people sixty-five and older should avoid or use with caution, or that could exacerbate some diseases or conditions. The list, known as the Beers Criteria (named after famous geriatrician Mark H. Beers), is long and somewhat daunting. It is really designed to be a clinical tool for medical professionals.

The number of drugs associated with a high proportion of avoidable side effects is actually relatively small, according to Jonathan H. Watanabe, PharmD, PhD, assistant professor of clinical pharmacy at Skaggs School of Pharmacy and Pharmaceutical Sciences. By becoming aware of these high-risk drugs and the Beers Criteria more broadly, seniors can protect and perhaps improve their health and quality of life for years to come.

Here are some of the top drugs to use with caution if you are age sixty-five or older:

**Warfarin**

Also called Coumadin and Jantoven, this anticoagulant (blood thinner) is prescribed to prevent the formation of stroke- and heart-attack-inducing blood clots. The drug has a very narrow therapeutic range, meaning that slightly higher than ideal amounts in the bloodstream can lead to a dangerous overthinning of the blood.

“Warfarin can cause bleeding in people of any age, but is especially risky for seniors,” said Dr. Watanabe, who specializes in geriatric pharmacy. “Seniors are often more frail and have a higher risk of falling and bleeding already. Patients on warfarin should double-check that their health care provider is monitoring the level of anticoagulation in the blood stream to ensure they are in the appropriate range.”

By becoming aware of these high-risk drugs and the Beers Criteria more broadly, seniors can protect and perhaps improve their health and quality of life for years to come.

Adding to the drug’s complications is a person’s specific genetic makeup, which can have a huge impact on the enzymes that are available to metabolize and activate the drug. Because of this, the same dose of warfarin can have vastly different effects on individuals, at any age. Warfarin also interacts with other medications, such as aspirin and Plavix, as well as supplements and foods such as ginseng, gingko, fish oil, and dark leafy greens rich in vitamin K.

continued on page 3
Free Public Lectures

MARCH

Managing Menopause
Kathryn Macaulay, MD
Clinical Professor of Reproductive Medicine; Director, UC San Diego Menopause Program
UC San Diego Health System

March 18, 2015, 5:30 p.m.
Garren Auditorium, Biomedical Sciences Building, UC San Diego

MARCH’S LECTURE
Learn more about menopause and hormone replacement therapy from Kathryn Macaulay, MD, clinical professor of reproductive medicine at the UC San Diego School of Medicine and director of the UC San Diego Menopause Program. She has extensive experience with hormone replacement therapy.

Dr. Macaulay enjoys having the opportunity to make a positive impact on the lives of her patients. As an ob-gyn, she provides comprehensive care to women of all ages and appreciates the continuity she is able to provide. She considers it a privilege to be involved with patients over time and through different phases of their lives.

Dr. Macaulay is a member of the American College of Obstetrics and Gynecology, the North American Menopause Society, the Association of Professors in Gynecology and Obstetrics, and the International Society for the Study of Women’s Sexual Health.

LECTURES ON TV

Updates in Clinical Geriatric Medicine
March 12, 8:00 p.m.
March 13, 10:00 p.m.

As we grow older, the risk of many health conditions increases. Roopali Gupta, MD, a board-certified geriatrician and an assistant professor of medicine at the UC San Diego School of Medicine offers useful tips to stay healthier in older life.

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- Turn right onto Villa La Jolla Drive.
- Go straight into Gilman Parking Structure.
- From Gilman Parking Structure, cross the street toward the Stein Clinical Research Building.
- Cross the lawn to the Medical Teaching Facility Building (MTF).
- Walk under the MTF bridge. Continue along the sidewalk to enter the Biomedical Sciences Building through the large sliding glass doors.
- Turn left at the first hallway. Garren Auditorium is in Room 1105.

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APRIL

ROEHR MEMORIAL LECTURE
The Science of Resilience: How to Thrive in Life
Darlene Mininni, PhD, MPH
Author of The Emotional Toolkit
Psychologist, UCLA

April, 15 2015, 5:30 p.m.
Lower Auditorium, MET Building, UC San Diego

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Judi Bonilla

BY DANA SONG

Judi Bonilla is the epitome of an individual who lives life in a stride.

Born in Montebello, California, in 1957, and raised in the suburbs of Los Angeles, Judi spent much of her childhood in Pico Rivera. She recalled how her teenage years were very different from her peers: “Pico Rivera at the time was ethnically diverse and mostly working class. I dreamt of traveling when a lot of my peers didn’t.”

Upon finishing her education at Fresno State College and subsequently living in San Diego, Judi decided to backpack around Europe. Living in England and studying health management and fitness to the older, Judi is an active teacher for learning adults fifty years and older. She teaches a wide range of subjects, from health management and fitness to public transportation—and even how to engage in online dating for those sixty-five and older. Judi is particularly interested in how much public transportation can impact the lives of seniors: “Transportation as we age becomes such a factor to the quality of our life. Just as you plan for your financial retirement, you plan for your driving retirement. Using public transportation not only keeps you connected, but could improve your health because it keeps you walking.”

Drugs to Use with Caution

continued from page 1

Insulin

This hormone produced by special cells in the pancreas regulates the body’s blood-sugar levels. It is a large, complex protein and may, like other drugs, be metabolized at highly variable rates among seniors.

“Older people need to be more careful about monitoring their blood-sugar levels,” Dr. Watanabe said. “It is easier for older people to become hypoglycemic and faint or fall, especially when standing up or rising from bed. Older adults are also sometimes less attuned to many of the classic symptoms of hypoglycemia, such as sweating, shaking, or heart pounding.”

Dr. Watanabe suggests that seniors avoid rapid-acting insulin and that they consider decreasing the complexity of their medication regimen by choosing an insulin medication that can be taken once a day.

Oral Antiplatelet Agents

Clopidogrel (Plavix) and other oral antiplatelet agents treat and prevent heart attacks and strokes. Patients seventy-five and older should be closely monitored for bleeding risk if they are taking any oral antiplatelet, including aspirin. Clopidogrel, in particular, must be metabolized by enzymes in the liver before it is therapeutically active. Dr. Watanabe explained that if these enzymes are less active, or “busy” metabolizing other drugs, the effect of the dose of clopidogrel is weaker.

A person’s genetics can greatly influence the drug’s efficacy and safety. In addition, some medications may decrease the function of the enzymes needed to activate clopidogrel.

Nonsteroidal Anti-inflammatory Drugs

NSAIDs include common over-the-counter painkillers, such as ibuprofen (Advil, Motrin), naproxen (Aleve, Naprosyn), and aspirin, plus prescription brands such as celecoxib (Celebrex) and fenoprofen (Nalfon). NSAIDs can cause ulcers or holes in the gastrointestinal tract, and these problems can develop without warning and at any time during treatment.

“Older adults are at greater risk of bleeding because the integrity of the stomach linings is not as substantial,” said Dr. Watanabe.

A study published in the American Journal of Medicine and further detailed in the New England Journal of Medicine in the late 1990s estimated that NSAIDs were associated with more than 16,000 deaths annually in the United States.

Benzodiazepines

Benzodiazepines are used to treat insomnia or anxiety. Some common brands include temazepam (Restoril), diazepam (Valium), and lorazepam (Ativan). Older adults often have increased sensitivity to these drugs and decreased metabolism of long-acting agents.

“It is harder to predict how long these drugs will work in the elderly,” Dr. Watanabe cautioned. For instance, people under the influence of benzodiazepines typically experience impairments in their psychomotor and driving abilities, even if they take only a single dose of the medication. As a result, these drugs might increase the risk of falls, accidents, and serious injuries, including hip fractures.

Dr. Watanabe recommended a “less is more approach” for all medications. Review all the drugs you are taking with your entire medical team, he said, and ask whether it is advisable or possible to decrease the complexity of your medication regimen.
Judi’s interest in gerontology goes back to her middle school years. Her parents were older than her friends’ parents. “I remember seeing egg timers and thinking that my parents’ time is running out because they were relatively old.” However, Judi didn’t view this realization as negative. “I didn’t see it as something terrible,” she affirmed. “When you know something isn’t going to last forever, it becomes precious.”

When asked about what advice she’d give for aging successfully, Judi answered that it’s treating every day as if it will be the best one yet. “If you’re homebound, enjoy the fragrance of coffee. If you’re able to get out, enjoy the beauty of the flowers in the morning, when there’s dew on it. Just make it a point that you’re going to have the best day,” Judi said. “Someone didn’t get that best day. Somebody didn’t get to have another day. Just because you woke up, it means you got another day. And that’s what I’m always mindful of.”

Successful Ager
continued from page 3

Do you know a Successful Ager?

If you know someone who is an example of successful aging, please contact us at (858) 534-6299 or aging@ucsd.edu with the person’s name, contact information, and a brief description of why you feel he or she is successfully aging. We will feature some of these individuals in future newsletters.

If you would like to make a contribution to the Center for Healthy Aging and the Stein Institute, there are three ways to give:

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