

MINI MED SCHOOL

A PROGRAM
FOR THE PUBLIC
ABOUT THE
SCIENCE OF MEDICINE



FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Tuesday Evenings
7:00 – 9:00pm

FALL 2007
September 25-November 13

Winter 2008
January 22- March 11th

Location:

Health Sciences Centre
3330 Hospital Drive N.W.
Calgary

For More Information Contact

Cynthia MacDermott at
(403) 220-6493
or
cmaacderm@ucalgary.ca

COURSE OUTLINE • FALL 2007

MAKING MEDICAL HEADLINES (September 25, 2007)

Have you heard the latest medical news? More importantly, how did you hear it? Medical news reaches the public through a wide variety of sources, including television, periodicals, the internet, advertising, and word-of-mouth. Unfortunately, these sources may be contradictory and biased, resulting in misinformation. Which one should you trust? In this session, we will explore how medical news is disseminated to the public and look at how medical "scares" sometimes occur. Learn how to distinguish reliable medical news from incorrect or incomplete information propagated by "experts" with hidden agendas.

MENDING AND PREVENTING A BROKEN HEART (October 2, 2007)

We all know that the heart pumps blood. But do you know how it pumps blood? Or how the body regulates heart pump activity? What causes a healthy heart to develop disease? This lecture will discuss the mechanisms responsible for the ability of the heart to pump blood. You will also learn about some of the factors that contribute to heart disease (heart attack and/or heart failure), how heart valve abnormalities affect the circulation of blood and how a stress test can detect abnormal heart function.

OUTBREAK: EMERGING INFECTIOUS DISEASES (October 9, 2007)

In science fiction movies, men and women in isolation suits go into remote or urban areas to contain and destroy the source of a deadly disease. These images are frightening enough in a big screen Hollywood production, and even more so when we see them on the nightly news. How is it that diseases can leap from animal to human? How do new infectious diseases develop? Why are viruses so 'smart' that they can evade destruction? Why are we now seeing so many drug-resistant strains of infectious diseases? In this session, we'll learn about infectious diseases, their origins including differences between bacterial and viral infections, what is being done to combat them, and how you can protect yourself.

Slim Chance in a Fat World: Understanding and Treating Obesity (October 16, 2007)

A girth greater than 94 cm in men and 80 cm in women significantly increases the risk of heart disease and diabetes and should be considered a 'new vital sign' as important as blood pressure and heart disease. Overweight and obesity have reached epidemic proportions and pose a serious health threat to people of all ages. Learn about current research shedding light on the causes of obesity and helping in the development of new treatments. Hear about dietary approaches and surgical techniques.

KNOW YOUR NUMBERS: ANALYSIS OF BLOOD AND URINE SAMPLES (October 23, 2007)

How does a laboratory do tests? What do the values for cholesterol, red and white blood counts, prostate specific antigen (PSA), albumin, and other tests tell you? What do red and white cells really do? What is the science of probability? How are normal values set and how should normal values be interpreted?

Regenerative medicine USING STEM CELLS (October 30, 2007)

In an effort to repair non-functional or diseased organs, some physicians wish to use various kinds of stem cells. In this lecture you will learn about some of the similarities and differences between embryonic, fetal, cord blood and adult stem cells. While it is often assumed that embryonic stem cells are the best for organ repair, this is not always the case. Thus, you will learn about some attempts to treat Parkinson's Disease, strokes, heart disease, diabetes, cancer and other diseases with various stem cell transplants. Also, because of their ability to proliferate and contribute to the structure of various organs, you will learn about recent studies to use stem cells with added genes for gene therapy.

Forensic Medicine: How Science IS USED to Analyze Evidence (November 6, 2007)

Some of the most popular TV shows today are crime dramas (the CSI and Law and Order franchises and Bones, for example) with plots that are triggered by the discovery of a dead body and unfold based on the application of basic principles of forensic medicine to the physical evidence surrounding the death. Why do we find these medical puzzles so fascinating? In this session, we'll look behind the scenes in the morgue, the dissection room, and the forensic anthropology lab to learn how doctors and scientists recover medical evidence and learn from the human body after death. We'll also review new developments in DNA analysis and discuss why autopsies are still an important tool in health care and medical education. Finally, we will distinguish current fact from some of the forensic fiction that is presented on TV dramas.

NEW AGE IMAGING: HOW ROBOTICS AND IMAGES ARE RE-DEFINING THE DIAGNOSIS AND TREATMENT OF DISEASE (November 13, 2007)

There has been a revolution in the imaging sciences that has established new standards in the diagnosis and treatment of disease. These advances are the result of new imaging devices which can "see" down to several millimeters in resolution and provide real-time physiologic information. Robotics permits surgeons to operate remotely, often at considerable distances from the patient in the operating room. This revolution is clearly evident in the diagnosis and treatment of cancer and stroke. You will learn how surgeons are using the latest technologies in caring for people.

COURSE OUTLINE • WINTER 2008

WHEN GOOD DRUGS GO BAD (January 22, 2008)

Who hasn't turned on the television or opened a magazine without seeing an advertisement for an exciting new drug, a drug that promises to make life better by vanquishing troublesome disease symptoms? In most cases, these new medicines go on to become part of our everyday pharmaceutical arsenal. Sometimes, however, one of these medications will reappear in the public eye, this time on the evening news in a widely publicized fall from grace. Over time, usage has revealed these drugs were therapeutically ineffective, have previously unappreciated negative side effects, or were even dangerous. In the worse cases, the drugs have to be immediately removed from the drug store shelves. How did these drugs get approved for use? What pharmacological challenges exist in attempting to make drugs as safe as possible? In this session, you'll get the story behind the story on some of the recent drug recalls and warnings.

THE KIDNEY: WHAT GOES IN MUST GO OUT (January 29, 2008)

The kidneys receive 20% of the blood pumped by the heart. This allows kidneys to regulate the composition of your blood to keep the concentrations of various ions and other important substances such as acid/base concentration constant, keep the volume of water in your body constant, and remove wastes from your body (urea, ammonia, drugs, toxic substances). It also allows your kidneys to regulate your blood pressure, stimulate the making of red blood cells and maintain the body's calcium levels. This lecture will discuss the mechanisms that allow the kidneys to function. You will also learn about the factors that contribute to kidney disease, and new treatments for acute and chronic kidney diseases.

THE IN'S AND OUT'S OF BREATHING: HOW THE LUNGS WORK

(February 5, 2008)

You breathe in and out 15 to 25 times per minute without even thinking about it. When you exercise, your breathing rate goes up -- again, without you thinking about it. You breathe so regularly that it is easy to take your lungs for granted. Your lung takes a gas that your body needs to get rid of (carbon dioxide) and exchanges it for a gas that your body can use (oxygen). We will look at how your lungs work and how they keep your cells supplied with vital oxygen and how carbon dioxide waste is eliminated. We will explain some of the conditions and diseases that make breathing harder and cause the lungs to fail. We will also explain why you can't hold your breath for a long time and why you cough or hiccup.

I DIDN'T SLEEP A WINK: SLEEPLESS IN CALGARY (February 12, 2008)

Why and how do we fall asleep? What keeps us asleep? What are the health risks associated with poor sleeping? Sleep apnea, or problems breathing while asleep, is a common cause of disability, accidents and even death. Newer techniques such as CPAP are dramatically improving people' lives. This presentation will discuss the mechanisms responsible for sleep, the common causes of sleeplessness, and new and emerging treatments.

FIFTY WAYS TO LOVE YOUR LIVER (February 19, 2008)

The liver produces substances that break down fats, converts glucose to glycogen, produces blood clotting factors and cholesterol, makes certain amino acids (the building blocks of proteins), and removes harmful substances from the blood (such as alcohol), stores vitamins and minerals (vitamins A, D, K and B12) and maintains a proper level of glucose in the blood. Learn how the liver works and the factors that contributes to liver problems such as cirrhosis, hepatitis and liver cancer. Finally, liver transplants will be discussed as a treatment for livers that have been destroyed by disease.

SOME LIKE IT HOT: FEVER (February 26, 2008)

What are fevers and why does the body get them? Learn about the body's thermostat, the hypothalamus, and its role in controlling your temperature. Learn what happens when bacteria or viruses invade your body causing a fever and sweats. Hear about night sweats, menopausal sweats, hot sweats and excessive sweating. Hear about the common causes, usual treatments, and when you should worry.

Genes: How They Work - and Don't Work - in Human Disease (March 4, 2008)

Examine the role of genes: what they do and how they do it. Explore the role of genes in human disease through an examination of how an altered gene can cause an inherited disease like cystic fibrosis. Gain an understanding of how genes contribute to diseases that arise during one's lifetime, such as cancer, and what research is being pursued to address gene defects in cancer and other diseases.

THE GUTS: FOLLOWING THE FOODS JOURNEY THROUGH THE BODY (March 11, 2008)

The gastrointestinal tract (GI tract), also called the digestive tract, alimentary canal, or gut, is the system of organs within multicellular animals that takes in food, digests it to extract energy and nutrients, and expels the remaining waste. But how does digestion and excretion actually work? Learn about the individual parts of the gut and their distinctive roles. Learn about the role the gut plays within the immune system to protect you against microorganisms, detoxify antigens and xenobiotics, and prevent the overgrowth of harmful bacteria. You will also hear about some of the things that can go wrong with the gut, such as inflammatory bowel disease.

Note: Program topics may change due to circumstances beyond the control of CME & PD.

