



Assessing Risk, Negotiating for Behavior  
Change, Respecting Culture

Problem-based Learning  
For  
Medical Students  
Updated 2008





U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES



National Institutes of Health



National Heart, Lung, and Blood Institute



The Office on Women's Health

**Authors:**

Carol Hodgson, Ph.D.  
Associate Dean, Curriculum & Evaluation  
Director, Educational Development Office  
Associate Professor of Medicine  
University of Colorado at Denver and Health Sciences Center  
Denver, CO

Deborah Kamali, M.D.  
Assistant Clinical Professor of Obstetrics and Gynecology  
University of California, San Francisco School of Medicine  
San Francisco, CA

Update 2008:  
Janet Pregler, M.D.  
Professor of Clinical Medicine  
Director, Iris Cantor-UCLA Women's Health Center  
David Geffen School of Medicine at UCLA  
Los Angeles, CA

***The Heart Truth* Professional Education Campaign Development Working Group**

Ramin Ahmadi, M.D., M.P.H.  
President, Griffin Faculty Practice  
Director, Internal Medicine Residency Program, Griffin Hospital  
Derby, CT

R. Ann Abercrombie, M.L.S.  
Outreach Librarian  
United States Department of Health and Human Services, Office on Women's Health  
Washington, D.C.

Delia Anderson, M.A.  
Executive Director, Program for the Teaching and Assessment of Professional Skills  
Tulane University School of Medicine  
New Orleans, LA

Elizabeth A. Bisinov, M.D.  
Assistant Professor of Medicine, Cardiology Section  
University of Wisconsin  
Madison, WI

Cheryl L. Bord, A.P.R.N., B.C.  
Nurse Practitioner/Coordinator  
Women's Heart Program  
University of Michigan Health System  
Plymouth, MI

Susan M. Clark, M.A.  
Director, Division of Program Management  
United States Department of Health and Human Services, Office on Women's Health  
Rockville, MD

Walter J. Clark, M.D.  
Medical Director  
Northeast Ohio Neighborhood Health Services, Inc. Community Center of Excellence in  
Women's Health  
Assistant Clinical Professor of Medicine  
Case Western Reserve School of Medicine  
Cleveland, OH

Kate Cronin, M.P.H.  
Research Program Manager  
National Centers of Excellence Research Coordinating Center  
University of Wisconsin Center for Women's Health Research

Melissa Cuppy, R.N.  
Northeast Missouri Health Council Community Center of Excellence in Women's Health  
Kirksville, MO

Michele David, M.D., M.B.A., M.P.H.  
Director, Haitian Health Institute at Boston Medical Center  
Women's Health Research Unit  
National Center of Excellence in Women's Health  
Boston University Medical Center  
Boston, MA

Mary R. Dortenzo, M.S.N., N.P.-C  
Program Coordinator: Women's Specialty Programs  
Magee-Womens Hospital of the University of Pittsburgh Medical Center  
Pittsburgh, PA

Pamela S. Douglas, M.D., F.A.C.C., F.A.S.E.  
Ursula Geller Professor of Research in Cardiovascular Diseases  
Chief, Division of Cardiovascular Medicine  
Duke University Medical Center  
Durham, NC

Kaiyti Duffy, M.P.H.  
Senior Program Coordinator  
St. Barnabas Community Center of Excellence in Women's Health  
New York, NY

Claire S. Duvernoy, M.D.  
Director, Women's Heart Program  
Assistant Professor of Medicine  
University of Michigan Health System  
Veterans Affairs Medical Center Cardiology Section  
Ann Arbor, MI

Karen Freund, M.D., M.P.H.  
Professor of Medicine  
Director, Boston University Center of Excellence in Women's Health  
Boston University School of Medicine  
Boston, MA

Geralde V. Gabeau, M.M.  
Program Coordinator, Boston University Center of Excellence in Women's  
Health  
Boston University Medical Center  
Boston, MA

Melissa Gilliam, M.D., M.P.H.  
Assistant Professor of Obstetrics and Gynecology  
University of Illinois, Chicago  
Chicago, IL

Gina Gilliland, R.N.C., W.H.N.P.  
Project Coordinator, Northeast Missouri Health Council Community Center of  
Excellence in Women's Health  
Kirksville, MO

Darlene Hardimon  
Quality Improvement Coordinator  
Northeast Ohio Neighborhood Health Services, Inc.  
Cleveland, OH

Suzanne G. Haynes, Ph.D.  
Senior Science Advisor  
United States Department of Health and Human Services, Office on Women's Health  
Washington, D.C.

Mandy Herleth  
Northeast Missouri Health Council Community Center of Excellence in Women's Health  
Kirksville, MO

Sharon Hillier, Ph.D.  
Director, Magee-Women's Hospital National Center of Excellence in Women's Health  
Professor of Obstetrics and Gynecology  
University of Pittsburgh  
Pittsburgh, PA

Dixie Horning  
Executive Director, UCSF Women's Health Center  
San Francisco, CA

Barbara F. James, M.P.H.  
Senior Health Science Analyst  
Director, National Community Centers of Excellence  
in Women's Health Program  
United States Department of Health and Human Services, Office on Women's Health  
Rockville, MD

Mary Kennedy, D.O.  
Medical Advisor, Women's Health Grants  
Northeast Missouri Health Council Community Center of Excellence in Women's Health  
Kirksville, MO

Anna L. Kindermann, J.D.  
Public Health Analyst  
United States Department of Health and Human Services, Office on Women's Health  
Rockville, MD

Lacie Koppelman, M.S.P.H.  
Public Health Advisor  
United States Department of Health and Human Services, Office on Women's Health  
Rockville, MD

Cathy J. Lazarus, M.D., F.A.C.P.  
Professor of Medicine  
Tulane University School of Medicine  
New Orleans, LA

Jane A. Leopold, M.D.  
Assistant Professor of Medicine  
Harvard Medical School  
Brigham and Women's Hospital  
Division of Cardiovascular Medicine  
Boston, MA

Susan M. Nappi, Program Director  
National Community Center of Excellence in Women's Health at Griffin Hospital  
Derby, CT

Terry Long  
Communications Director  
National Heart, Lung, and Blood Institute  
National Institutes of Health  
Bethesda, MD

Jeanette H. Magnus M.D., Ph.D.  
Director, Tulane Xavier National Center of Excellence in Women's Health  
Professor of Medicine  
Tulane University School of Medicine  
New Orleans, LA

Melissa McNeil, M.D.  
Director of Professional Education, Magee-Womens Hospital National Center of  
Excellence in Women's Health  
Professor of Medicine  
Pittsburgh, PA

Nancy Milliken, M.D.  
Director, UCSF National Center of Excellence in Women's Health  
Director, UCSF Women's Health Center  
Associate Clinical Professor of Obstetrics, Gynecology & Reproductive Sciences  
University of California, San Francisco  
San Francisco, CA

Cindy S. Moskovic, M.S.W.  
Director, Iris Cantor - UCLA Women's Health Education & Resource Center  
David Geffen School of Medicine at UCLA  
Los Angeles, CA

Eileen P. Newman, M.S., R.D.  
Public Health Analyst  
United States Department of Health and Human Services, Office on Women's Health  
Rockville, MD

Ana E. Núñez, M.D.  
Director, Drexel University National Center of Excellence in Women's Health  
Associate Professor of Medicine  
Drexel University College of Medicine  
Philadelphia, PA

Michele Ondeck, R.N., M.Ed.  
Clinical Research Coordinator, Magee-Womens Hospital  
Assistant Director, Magee-Womens Hospital National Center of Excellence in Women's  
Health  
Pittsburgh, PA

Dhaval Patel  
Medical Student  
Tulane University School of Medicine  
New Orleans, LA

Christina Albertin Petranek, M.P.H.  
Evaluation Coordinator  
National Community Center of Excellence in Women's Health at Griffin Hospital  
Derby, CT

Janet P. Pregler, M.D.  
Director, UCLA National Center of Excellence in Women's Health  
Director, Iris Cantor-UCLA Women's Health Center  
Professor of Clinical Medicine  
David Geffen School of Medicine at UCLA  
Los Angeles, CA

Tara Rizzo, M.P.H.  
Epidemiologist and Program Coordinator  
National Community Center of Excellence in Women's Health at Griffin Hospital  
Derby, CT

Candace Robertson, M.P.H.  
Deputy Director, Drexel University National Center of Excellence in Women's Health  
Drexel University College of Medicine  
Philadelphia, PA

Kimberly D. Sanders  
Program Director  
Northeast Ohio Neighborhood Health Service, Inc. National Community Center of  
Excellence in Women's Health  
Cleveland, OH

Gloria Sarto, M.D., Ph.D.  
Co-Director, University of Wisconsin Center for Women's Health Research  
Professor of Obstetrics and Gynecology  
University of Wisconsin School of Medicine  
Madison, WI

Valerie Scardino, M.P.A.  
NWHIC Program Manager  
United States Department of Health and Human Services, Office on Women's Health  
Washington, DC



Margaret R. Seaver, M.D., M.P.H.  
Deputy Director, BU National Center of Excellence in Women's Health  
Director, Women Veterans Health Center  
Assistant Professor of Medicine  
Boston University School of Medicine  
Boston, MA

Kit Shelby  
Standardized Patient Trainer  
Program for the Teaching and Assessment of Professional Skills  
Tulane University School of Medicine  
New Orleans, LA

Bonnie J. Sherman, Ph.D.  
Research Associate  
Boston University National Center of Excellence in Women's Health  
Boston University School of Medicine  
Boston, MA

Marjorie Kagawa-Singer, Ph.D., M.N., R.N.  
Director, Concurrent Program in Community Health Sciences and Asian American  
Studies  
Associate Professor  
UCLA School of Public Health  
Los Angeles, CA

Ann M. Taubenheim, Ph.D., M.S.N.  
Coordinator, Women's Heart Health Education Initiative  
Office of Prevention, Education, and Control  
National Heart, Lung, and Blood Institute  
Bethesda, MD

Justina A. Trott, M.D., F.A.C.P.  
Director, Santa Fe National Community Center of Excellence in Women's Health  
Director, Women's Health Services Family Care and Counseling Center  
Clinical Professor of Medicine  
University of New Mexico School of Medicine  
Santa Fe, NM

Milta Vega-Cardona, M.S.A., C.S.A.C.  
Project Manager  
St. Barnabas National Community Center of Excellence in Women's Health  
New York, NY

Karol E. Watson, M.D., Ph.D.  
Co-director, UCLA Program in Preventive Cardiology  
Assistant Professor of Medicine  
David Geffen School of Medicine at UCLA  
Los Angeles, CA

***The Heart Truth* Professional Education Program  
Problem-based Learning for Medical Students**

Table of Contents

Introduction.....	I-1 to I-3
“The Case of Mrs. Montoya” Facilitator’s Guide.....	FG-1 to FG-19
“The Case of Mrs. Montoya” Student Materials.....	S-1 to S-12
References.....	R-1 to R-5

## Introduction

### *The Heart Truth* Professional Education Program Problem-based Learning for Medical Students

#### Educational Goals

For medical students:

- To recognize gender differences in the epidemiology, diagnosis and treatment of heart disease
- To recognize that heart disease is the leading cause of death in American women of all ethnicities

#### Targeted Learners

This problem-based learning case is for both beginner and advanced students. Sections within the case module can be selected based on the learner's stage of knowledge and the learner's placement within the institution's established curriculum.

Most instructors will find these materials work best if beginner students are encouraged to tackle issues related to basic knowledge of cardiovascular disease (CVD) such as:

- prevalence and incidence data, including racial, ethnic and gender differences
- risk factor identification, including racial, ethnic and gender differences in the prevalence and incidence of risk factors
- prevention strategies, focusing on lifestyle behavioral changes within the context of cultural diversity, ethnicity, race and gender differences

For the advanced learners, this case lends itself to learning issues related to clinical interventions for CVD, including:

- concepts of risk stratification and risk reduction strategies
- national guidelines for the prevention, treatment and diagnosis of CVD
- available resources for implementing guidelines, such as
  - resources for patients
  - tools to assist clinical decision making
- strategies to facilitate behavior changes in women
  - behavioral change theory
  - professional communication
  - cultural competency

## Place in the Curriculum

This case and its accessory components are meant to supplement the users' established curriculum for cardiovascular disease. This case is designed to improve students' knowledge and skills about approaching prevention, diagnosis, and treatment of cardiovascular disease in women. Prior to case presentation to the students, it is recommended that the students have received a basic introduction to the anatomy, histology and physiology of the heart, as well as to the history and physical examination.

## Additional Materials

Additional materials created for *The Heart Truth* Professional Education Program include a case developed and tested for nursing students, examination/ self study questions (appended to the nursing case), and a standardized patient case. Course chairs and others involved in curricular development are encouraged to review these additional materials, and to use and/ or adapt them for the medical school curriculum as appropriate.

## Essential Knowledge, Skills, and Behaviors to be Demonstrated:

The beginning learner will be able to:

- Cite prevalence and incidence data of CVD, and identify racial and gender differences in CVD prevalence and incidence
- Identify known CVD risk factors in women
- Identify gender and racial differences in the relative importance of the CVD risk factors for women
- Define the concept of CVD risk stratification
- Identify risk reduction strategies, including those involving lifestyle behavioral changes
- Summarize the current state of knowledge of how menopause and hormone therapy affect a woman's risk for developing CVD
- Calculate BMI
- Identify common (typical) presentations of CVD and identify gender differences in presentation

The advanced learner will be able to :

- Identify evidence-based patient education resources to support primary and secondary prevention and treatment of heart disease
- Calculate a woman's 10-year risk for CVD events using the Framingham criteria
- Cite the "Five A's" for behavioral counseling in smoking cessation
- Describe the pathophysiology of stable and unstable coronary syndromes

- Recognize the range of common clinical presentations for stable and unstable coronary syndromes in women and contrast these with those of men
- Describe testing modalities for diagnosing coronary heart disease and explain differences in test sensitivity and specificity for common tests by gender
- List appropriate initial diagnostic tests (those usually performed in the emergency department) for a female patient presenting with possible acute coronary syndrome

Additional Knowledge, Skills and Attitudes for Students Using the Complementary Standardized Patient (SP) Case/Video:

The student will be able to:

- State what biases may lead to the failure to diagnose CVD in women
- Identify psychosocial factors that influence, interfere with or delay women seeking treatment and early evaluation for symptoms suggestive of CVD
- Recognize that gender-specific and culture-specific communication styles may impact the clinician-patient interaction
- Apply behavioral change theories and strategies to clinical situations
- Identify stage of change readiness for the standardized patient and understand how this impacts her ability to modify lifestyle habits and behaviors
- Identify the patient's barriers to change
- Develop a plan to manage barriers and to move the patient toward a higher stage of readiness

**The Case of Mrs. Montoya:  
Problem-based Learning  
Facilitator's Guide**

**PBL TUTOR GUIDE  
NOT For Distribution To Students**

**Case Overview: The Case of Mrs. Montoya**

**Educational Goals**

For medical students:

- To recognize gender differences in the epidemiology, diagnosis and treatment of heart disease
- To recognize that heart disease is the leading cause of death in American women of all ethnicities

**Targeted Learners**

This problem-based learning case is for both beginner and advanced students. Sections within the case module can be selected based on the learner's stage of knowledge and the learner's placement within the institution's established curriculum.

Most instructors will find these materials work best if beginner students are encouraged to tackle issues related to basic knowledge of cardiovascular disease (CVD) such as:

- prevalence and incidence data, including racial, ethnic and gender differences
- risk factor identification, including racial, ethnic and gender differences in the prevalence and incidence of risk factors
- prevention strategies, focusing on lifestyle behavioral changes within the context of cultural diversity, ethnicity, race and gender differences

For the advanced learners, this case lends itself to learning issues related to clinical interventions for CVD, including:

- concepts of risk stratification and risk reduction strategies
- national guidelines for the prevention, treatment and diagnosis of CVD
- available resources for implementing guidelines, such as
  - resources for patients
  - tools to assist clinical decision making
- strategies to facilitate behavior changes in women
  - behavioral change theory
  - professional communication
  - cultural competency

**Place in the Curriculum**

This case and its accessory components are meant to supplement the users' established curriculum for cardiovascular disease. This case is designed to improve



students' knowledge and skills about approaching prevention, diagnosis, and treatment of cardiovascular disease in women. Prior to case presentation to the students, it is recommended that the students have received a basic introduction to the anatomy, histology, and physiology of the heart, as well as to the history and physical examination.

Essential knowledge, skills, and behaviors to be demonstrated:

The beginning learner will be able to:

- Cite prevalence and incidence data of CVD, and identify racial and gender differences in CVD prevalence and incidence
- Identify known CVD risk factors in women
- Identify gender and racial differences in the relative importance of CVD factors for women
- Define CVD risk stratification concepts
- Identify risk reduction strategies, including those involving lifestyle behavioral changes
- Summarize the current state of knowledge of how menopause and hormone therapy affect a woman's risk for developing CVD
- Calculate BMI
- Identify common (typical) presentations of CVD and identify gender differences in presentation

The advanced learner will be able to:

- Identify evidence-based patient education resources to support primary and secondary prevention and treatment of heart disease
- Calculate a woman's 10-year risk for CVD events using the Framingham criteria
- Cite the "Five A's" for behavioral counseling in smoking cessation
- Describe the pathophysiology of stable and unstable coronary syndromes
- Recognize the range of common clinical presentations for stable and unstable coronary syndromes in women and contrast these with those of men
- Describe testing modalities for diagnosing coronary heart disease and explain differences in test sensitivity and specificity for common tests by gender
- List appropriate initial diagnostic tests (those usually performed in the emergency department) for a female patient presenting with possible acute coronary syndrome

### Additional Knowledge, Skills and Attitudes for Students Using the Complementary Standardized Patient (SP) Case/Video:

The student will be able to:

- State what biases may lead to the failure to diagnose CVD in women
- Identify psychosocial factors that influence, interfere with or delay women seeking treatment and early evaluation for symptoms suggestive of CVD
- Recognize that gender-specific and culture-specific communication styles may impact the clinician-patient interaction
- Apply behavioral change theories and strategies to clinical situations
- Identify stage of change readiness for the standardized patient and understand how this impacts her ability to modify lifestyle habits and behaviors
- Identify the patient's barriers to change
- Develop a plan to manage barriers and to move the patient toward a higher stage of readiness

### Endings to the Case

This case can be used in your PBL small group using three different approaches. There are two different endings to the case. Either of these two endings can be used separately. However, the case is meant to incorporate either/or Ending One or Ending Two depending on the choices made by the students in the group.

#### Ending One

Ending One concludes when the patient, Mrs. Montoya, a 58 year-old Latina woman presents at the emergency department (ED) after a massive myocardial infarction (MI). The students do not appropriately identify or work-up the cardiac disease symptoms in the outpatient setting; therefore, Mrs. Montoya presents to the ED with an MI weeks after her visit.

#### Ending Two

Ending Two is completely different, based on the student's choices in regards to the differential diagnosis and plan of care. Mrs. Montoya undergoes a dobutamine stress tolerance test that reveals her cardiac disease and she subsequently undergoes a four-vessel coronary artery bypass graft surgery.

#### Case Flow

At the end of Session One, the students should have CVD on their differential diagnosis list for Mrs. Montoya. Other problems on the list might include depression, asthma, anemia, breast cancer, hypothyroidism, and diabetes.

When they return for Session Two, the students will need to decide a plan of care/management approach for Mrs. Montoya. Discussion about what lab tests might be beneficial and/or what testing/procedures might be indicated to further work-up Mrs. Montoya's complaints is necessary.

Test results will not be immediately available to the students. Instead, the tutor will give the students the test result/s only for the test the student's request, with a rationale given for each test ordered.

If the students request an ECG they will receive a copy of a normal ECG. If they request a stress test (any type), they will receive the results of a dobutamine stress tolerance test.

If the students request a stress test and can justify the test because of Mrs. Montoya's cardiac risk factors (family history, high BMI, elevated cholesterol despite medication, and hypertension) and dyspnea on exertion, then the tutor should proceed with Ending Two.

If the students do not request a stress test then the tutor should proceed with Ending One. This allows the students to see the consequences of missing the diagnosis. After reviewing Ending One, the facilitator should encourage students to discuss what might have occurred if her cardiac risk factors had been assessed properly.

**Tip**

It may be helpful to provide Ending One and Ending Two to the tutor using two different colored papers to make it easier to distribute the correct ending depending on the group's actions.

Session One -- Part One

Today as part of your internal medicine rotation, you are in the outpatient clinic. Your attending asks you to interview Mrs. Amparo Montoya, a 58 year-old Latina woman who is a returning patient to clinic. You pick up the chart and note that her last visit to clinic was over a year ago. You enter the room and ask what brings her to clinic today. She tells you that her close friend has been diagnosed with breast cancer and now she is worried too. "I can't feel a lump right now, but neither did she." She thinks her last mammogram was two or three years ago and that her first one was when she turned 50, with a follow-up about every two years. "I was supposed to go last year, but I didn't want my daughter to miss work. You see, I take care of my little grandson because my daughter and her husband both work and if I have to come to the doctor, my daughter has to stay home to take care of Robert. I want to help her, not be a burden to her. Today she took off a couple of hours so I could come in. I'm so worried, my friend had to have surgery and she's already started chemo. She's so tired. I get tired sometimes too. I think it's just because Robert is such a busy boy! He's two and he has lots of energy! But what if it's cancer? I take care of my family, I can't afford to be sick, too many people count on me."

Session One -- Part Two

You assure Mrs. Montoya that you will do a breast exam and refer her for a mammogram, but that you would like to ask a few questions first. You find that Mrs. Montoya does not have breast pain; she has not noticed any discharge from her nipples, any dimpling, or any other changes to her breasts. She doesn't usually do a monthly breast exam so she's not sure if she's had any breast lumps in the past or not. "I don't think anyone in my family has had breast cancer, not that I know of. My uncle had lung cancer, but he smoked a lot after he moved to this country. Otherwise, my family is pretty healthy now except both my parents have high blood pressure. My father had a heart attack about 15 years ago when he was 61. That's when they moved in with my sister in El Salvador. I worry about them all the time, but I'm sure my sister is taking good care of them. He had to have surgery for his heart back then, but he's doing ok now. My mom and brother have diabetes, but they're mostly ok too, they try to eat better, but it's hard. I try to cook the things the doctor said to make, but..." she shrugs. "My two younger sisters and my children are very healthy - no diabetes, no high blood pressure, no cancer. My husband takes medicine every day for high blood pressure too and he takes an aspirin for his heart. I worry he'll have a heart attack like my father; he works too hard."

When you ask how she's been otherwise, she tells you that she felt a bit more tired for the past few weeks. "Besides chasing after Robert all day, maybe it's because I don't sleep very well. I wake up at four or five in the morning and can't get back to sleep." She reports that although she never seems to get enough sleep, she still has energy to cook for her family, do the shopping, and keep up the house.

She has had no changes in her weight. She reports that her appetite is fair, but that she sometimes just doesn't feel like eating. You ask about her mood and she states she worries a lot about her family. Her daughter and son-in-law live nearby and she takes care of her grandson full-time. She notices mild shortness of breath when playing with him at the park, which she attributes to her asthma. She has a history of mild asthma since childhood and occasionally uses an albuterol inhaler. She has never taken steroids for her asthma. She reports that she never has shortness of breath while at rest and has never experienced any chest pain. She says that she does not have a cough, although her son-in-law smokes. Neither she nor her husband smoke and she only allows her son-in-law to smoke outdoors.

### Session One -- Part Three

You mention to Mrs. Montoya that you noticed in her chart that she too has a history of hypertension as well as elevated cholesterol. "Yes, I'm just like the rest of my family. Sometimes I eat too well." You also find in her chart that Mrs. Montoya had a positive PPD test and normal chest x-ray when she immigrated to the United States from El Salvador over 30 years ago, but she says that she has never had tuberculosis. You continue your history and finally ask if she and her husband have sexual relations, she smiles, looks away and says "I'm too old for that."

You ask Mrs. Montoya to change into a gown and you go out to present to your attending physician.

Mrs. Montoya presents today concerned about breast cancer. She missed her last mammogram and is concerned today because a friend was recently diagnosed with breast cancer. Her last mammogram was approximately three years ago. She reports no breast pain, nipple discharge, or dimpling. Her Ob/Gyn history is significant for two uncomplicated vaginal births. Her periods stopped when she had an abdominal hysterectomy for symptomatic fibroids at age 46. She took oral estrogen after her hysterectomy but states one of her doctors took her off it a couple of years ago. She has not had any other surgery. She has never had an abnormal pap smear. She has a past medical history of hypertension and high cholesterol. Her medications include captopril 25 mg t.i.d., hydrochlorothiazide 25 mg per day, pravastatin 40 mg per day, and albuterol as needed. She takes no complementary or alternative medicines. She denies any allergies. She reports that she doesn't drink alcohol or use any drugs. Her physical activity consists of daily walks to the park with her grandson.

You and your attending enter the room to perform the physical exam together.

Session One -- Part Four

Physical Exam:

- General: Alert well-appearing Latina woman in no apparent distress
- Height: 160 cm
- Weight: 80 Kg
- BP: 144/90
- HR: 90
- Temp: 98.2
- Respirations: 16
- Oxygen saturation (room air) 98%
- Head: Normocephalic, atraumatic.
- Eyes: Normal fundoscopic exam
- Neck: No thyromegaly or lymphadenopathy. No carotid bruits or JVD.
- Chest: Clear to auscultation
- Cor: Normal JVP. Non-displaced PMI. Regular rhythm. Normal S1, S2. No S3, S4. No murmur or rub.
- Breasts: Symmetric. Non-tender. No skin dimpling with arm movements. No mass. No axillary adenopathy.
- Abdomen: Normoactive bowel sounds. Non-tender. Non-distended. No hepatosplenomegaly. No mass. Pfannenstiel skin scar. Waist 41 inches.
- Extremities: No cyanosis, clubbing or edema. Normal pulses.
- Neuro: Non-focal. Normal cranial nerve exam. Normal sensory exam. Normal DTRs.
- Pelvic: Normal external genitalia. Absent cervix and uterus. No pelvic tenderness or mass.
- Musculoskeletal: Normal range of motion.

Session One -- Part Five

While you and your attending are waiting for the patient to get dressed, you discuss the case. Your attending asks you what screening or diagnostic tests are indicated in Mrs. Montoya. She also asks what patient education information you think Mrs. Montoya might find useful. You both return to the room to discuss your thoughts with the patient and you ask her to schedule a follow-up visit in a couple of weeks.



Session Two -- Part Six

You are in the outpatient clinic when Mrs. Montoya returns for her follow-up visit. You go in to see how she has been. "Well, my friend talked to her doctor and I think they got all of the cancer." When you ask about her fatigue she shrugs and says, "It's the same as before." You assure Mrs. Montoya that both her mammogram and clinical breast exam were normal. She sighs with relief. "Then every thing is fine." You tell Mrs. Montoya that you have some other concerns and go over her lab results with her.

Session Two - Part Seven  
Lab Results

*Tutors: Provide the following lab data only if students give good rationale to the group for tests requested:*



Laboratory results (fasting):		<u>Normal range</u>
WBC	8.3	3.4 - 10
Hemoglobin	13	12 - 15.5
Hematocrit	38.3	36 - 46
Platelets	228	140 - 450
Iron	Not ordered	
Ferritin	Not ordered	
Electrolytes	Normal	
BUN	Not ordered	
Creatinine	1.0	0.6 - 1.2
Glucose	120	70 - 109
Hemoglobin A1C	7.4	4.8 - 6.7
Liver Function tests	Normal	
Cholesterol	239	< 200
Triglycerides	206	< 150
HDL	58	> 39
LDL	135	< 130
TSH	0.98	0.5 - 4.70
Free T4	Not ordered	
T3	Not ordered	
FSH	Not ordered	
LH	Not ordered	

Tutors: Provide following test results ONLY if students give rationale to the group for tests requested:

ECG	Normal (hand out attached ECG)
Pap test	Not ordered because s/p total hysterectomy
Pulmonary function tests	Not ordered
Cardiac stress test	See dobutamine echocardiogram results
Depression screening	Performed, and does not meet criteria for depression

Tutors:

Students request:

- NO ECG, NO stress test                                            ENDING ONE
- ECG, NO cardiac stress test                                      ENDING ONE
- Stress test (must give rationale)                               ENDING TWO

Session Two (Ending One) - Part Eight

You reassure Mrs. Montoya that her ECG is normal and suggest some changes to her medications. You explain that you are going to increase her pravastatin to 80 mg per day since her LDL cholesterol is still higher than you would like to see it. In addition, you suggest a fluticasone inhaler for her asthma. You ask her to return in three months to recheck her blood pressure and check her response to the change in medications. You also ask her to schedule an appointment with the dietician to help control her cholesterol with diet.

## Session Two (Ending One) - Part Nine

Two months later, you are on your Emergency Medicine clerkship and Mrs. Montoya is brought in by ambulance after suffering a massive MI. Her husband and daughter accompany her to the hospital, while the rest of the family waits at home for news. Although Mrs. Montoya receives cardiac resuscitation, she is pronounced dead soon after arriving at the emergency department (ED).

You accompany the attending when she goes to speak to the family; they are clearly agitated and worried when they see the two of you approaching. The attending takes the family aside and explains that Mrs. Montoya has had a heart attack and although everything was done to save her life, they were not able to save her. Her daughter breaks into tears and hugs her father, who also begins to cry. "Her chest didn't hurt, she never had any symptoms, she just said she felt funny and laid down on the couch and I couldn't get her up," cried her daughter. "She felt ok, just tired. She was watching my son today, maybe she chased after him too much. I shouldn't have left him with her every day, it was too much for her!"

The attending reassures the family. "There was nothing you could have done; it wasn't your fault that your mother had a heart attack. You couldn't have seen this coming and gotten her to the ED any sooner to save her life."

After you leave the family, you tell your attending that you saw Mrs. Montoya in clinic a few months ago and ask what you could have done differently. The attending explains that, like men, women with heart disease most commonly present with chest pain or discomfort. But, women are more likely than men to experience some of the other common symptoms, such as shortness of breath. Mrs. Montoya's dyspnea might have been a clue that she was suffering from heart disease.

A resting ECG can sometimes be normal even when severe cardiac disease is present, so a resting ECG cannot be used to exclude a possible diagnosis of cardiac disease. The next study for the patient would have been a type of stress test. Stress tests include exercise treadmill tests, exercise imaging tests and pharmacologic stress imaging tests. "If she could exercise, an exercise stress test would have been best, but because of her asthma, I think a pharmacologic stress test like a dobutamine echocardiogram would have been a good choice. The results of the test could have told you there was a blockage, and, if so, what further treatment might be needed."

You ask about the patient and family's description of her fatigue. Could that have been a clue for her risk for MI? The attending points out that some literature suggests that unusual fatigue may be a sign of impending infarction. She emphasizes that it is always important to take a further history and review of systems when patients present with fatigue.

You think back over Mrs. Montoya's case and realize that she had significant cardiac risk factors and you realize that from this experience and the grief you feel over her loss that you won't miss those signs again when you see a patient like Mrs. Montoya.

## Session Two (Ending Two) - Part Eight

After reviewing her tests, you and the attending explain to Mrs. Montoya that given her risk factors for cardiac disease and her fatigue and shortness of breath with exercise, you would like to do an ECG in the office today and call the hospital and schedule a stress test of her heart. "I don't think anything is wrong with my heart, I don't have any pain in my chest."

The attending explains that, like men, women with heart disease most commonly present with chest pain or discomfort. But, women are more likely than men to experience some of the other common symptoms, such as shortness of breath. Feeling short of breath or a "different" sensation in the chest, neck, jaw, or abdomen, particularly with exertion or emotional stress, can be a sign of heart disease.

You tell her that the "stress" refers to exercise or medication that increases her heart rate. The "test" refers to an ultrasound (echocardiogram) or nuclear medicine study to look at the heart. You tell her that these tests are used to find areas of the heart that may have been damaged by coronary artery disease. Because her asthma restricts her ability to exercise, you recommend a dobutamine stress test.

You obtain an ECG:

Normal ECG

## Session Two (Ending Two) - Part Nine

### Dobutamine Stress Tolerance Test:

Resting: Normal Sinus Rhythm

Dobutamine infusion:

- Symptoms: None
- Blood Pressure: Increased from 160/102 to 194/104
- Heart Rate: Increased from 86 to 154 bpm

ECG findings: ST elevation in V4-V6, II, and AVF at peak heart rate.

Recovery: Resolution of ST changes

Conclusion: There was ECG evidence of stress-induced ischemia. This is a positive test.

Mrs. Montoya returns to the office with her husband, following the stress test. You and the attending sit down to explain the results to her. You inform her that because her stress test was quite abnormal, she needs to undergo cardiac catheterization. She and her husband appear concerned when you explain this procedure to her. "Can my husband or my daughter be with me during the test?" You explain that they can accompany her to the hospital but will have to wait in the waiting room during the procedure. The attending goes on to explain that the test is quite routine and generally quite safe, but very helpful in providing crucial data on her heart.

Mr. Montoya quietly asks, "Are there any risks from having the test? It sounds pretty dangerous to me." Your attending explains the procedure and the risks and benefits of it. She explains that there is about a one in a thousand chance of major complications such as a stroke or heart attack as a result of the procedure. Mr. Montoya seems skeptical about approving the procedure while your attending continues to explain the benefits of knowing if there is a blockage. "If there is a blockage and we don't detect it in time, your wife could have a heart attack. So the benefits of the procedure outweigh the risks of it. When you go for the procedure, the cardiologist will explain the risks and benefits in detail."

The following week, Mrs. Montoya undergoes cardiac catheterization that reveals a diffusely diseased left anterior descending artery, a right dominant system with severe stenotic lesions and a left ventricular ejection fraction of 55%.

Two weeks later, Mrs. Montoya undergoes a four-vessel coronary artery bypass graft surgery, while her entire family waits anxiously in the waiting room. Mrs. Montoya's daughter-in-law helps out by watching Robert at home. Mrs. Montoya experiences no complications. She spends the first day in the intensive care unit, and then transfers to a surgical ward where her family visits her throughout her stay in the hospital. She is discharged in good condition on a low-saturated fat, low cholesterol diet with plan for cardiac rehabilitation after the post-op recovery period.

Six months later as you walk from the hospital to the outpatient clinic, you see Mrs. Montoya and ask her how she's doing. "I feel great. Robert is as energetic as ever, but I don't feel as tired as I used to feel even after spending the day chasing after him. My daughter is working 80% now and stays home with Robert one day a week. They all worry about me too much. I'm fine. I just have to try to stay on my diet. That's the hardest thing." You wish her good luck and go off to clinic.

### Suggested Learning Issues

1. List major risk factors for heart disease
2. Give a differential diagnosis of fatigue in women
3. Give evidence-based recommendations for breast cancer screening
4. Describe screening for depression in women
5. Describe the relationship between stress and cardiac disease.
6. Use the Framingham scores to calculate this patient's 10-year risk for clinical cardiovascular disease events. What would her risk be if she smoked?
7. Describe the lifestyle changes which women can take to reduce their risk of cardiac disease. Is there evidence to recommend supplementation with folate, omega 3 fatty acids or antioxidants?
8. Give screening guidelines for diabetes. List diabetes risk factors. What are the diagnostic laboratory criteria for diabetes and for impaired glucose tolerance?
9. Give desirable levels for total and LDL cholesterol.
10. Describe the clinical findings required for the diagnosis of metabolic syndrome.
11. Give evidence-based recommendations regarding the use of menopausal hormone therapy for the prevention of heart disease in women.
12. Explain the current recommendations with regard to use of aspirin for primary prevention of cardiac disease in women.
13. Give the indication for use of the following medications for prevention and or treatment of heart disease. List the major side effects of each and the absolute contraindications if there are any. Are there gender or ethnic differences to consider when using these medications?



- Angiotensin converting enzyme inhibitors
- Beta blockers
- HMG CoA reductase inhibitors

**The Case of Mrs. Montoya:  
Problem-based Learning  
Student Materials**

Session One -- Part One

Today as part of your internal medicine rotation, you are in the outpatient clinic. Your attending asks you to interview Mrs. Amparo Montoya, a 58 year-old Latina woman who is a returning patient to clinic. You pick up the chart and note that her last visit to clinic was over a year ago. You enter the room and ask what brings her to clinic today. She tells you that her close friend has been diagnosed with breast cancer and now she is worried too. "I can't feel a lump right now, but neither did she." She thinks her last mammogram was two or three years ago and that her first one was when she turned 50, with a follow-up about every two years. "I was supposed to go last year, but I didn't want my daughter to miss work. You see, I take care of my little grandson because my daughter and her husband both work and if I have to come to the doctor, my daughter has to stay home to take care of Robert. I want to help her, not be a burden to her. Today she took off a couple of hours so I could come in. I'm so worried, my friend had to have surgery and she's already started chemo. She's so tired. I get tired sometimes too. I think it's just because Robert is such a busy boy! He's two and he has lots of energy! But what if it's cancer? I take care of my family, I can't afford to be sick, too many people count on me."

Session One -- Part Two

You assure Mrs. Montoya that you will do a breast exam and refer her for a mammogram, but that you would like to ask a few questions first. You find that Mrs. Montoya does not have breast pain; she has not noticed any discharge from her nipples, any dimpling, or any other changes to her breasts. She doesn't usually do a monthly breast exam so she's not sure if she's had any breast lumps in the past or not. "I don't think anyone in my family has had breast cancer, not that I know of. My uncle had lung cancer, but he smoked a lot after he moved to this country. Otherwise, my family is pretty healthy now except both my parents have high blood pressure. My father had a heart attack about 15 years ago when he was 61. That's when they moved in with my sister in El Salvador. I worry about them all the time, but I'm sure my sister is taking good care of them. He had to have surgery for his heart back then, but he's doing ok now. My mom and brother have diabetes, but they're mostly ok too, they try to eat better, but it's hard. I try to cook the things the doctor said to make, but..." she shrugs. "My two younger sisters and my children are very healthy - no diabetes, no high blood pressure, no cancer. My husband takes medicine every day for high blood pressure too and he takes an aspirin for his heart. I worry he'll have a heart attack like my father; he works too hard."

When you ask how she's been otherwise, she tells you that she felt a bit more tired for the past few weeks. "Besides chasing after Robert all day, maybe it's because I don't sleep very well. I wake up at four or five in the morning and can't get back to sleep." She reports that although she never seems to get enough sleep, she still has energy to cook for her family, do the shopping, and keep up the house.

She has had no changes in her weight. She reports that her appetite is fair, but that she sometimes just doesn't feel like eating. You ask about her mood and she states she worries a lot about her family. Her daughter and son-in-law live nearby and she takes care of her grandson full-time. She notices mild shortness of breath when playing with him at the park, which she attributes to her asthma. She has a history of mild asthma since childhood and occasionally uses an albuterol inhaler. She has never taken steroids for her asthma. She reports that she never has shortness of breath while at rest and has never experienced any chest pain. She says that she does not have a cough, although her son-in-law smokes. Neither she nor her husband smoke and she only allows her son-in-law to smoke outdoors.

Session One -- Part Three

You mention to Mrs. Montoya that you noticed in her chart that she too has a history of hypertension as well as elevated cholesterol. "Yes, I'm just like the rest of my family. Sometimes I eat too well." You also find in her chart that Mrs. Montoya had a positive PPD test and normal chest x-ray when she immigrated to the United States from El Salvador over 30 years ago, but she says that she has never had tuberculosis. You continue your history and finally ask if she and her husband have sexual relations, she smiles, looks away and says "I'm too old for that."

You ask Mrs. Montoya to change into a gown and you go out to present to your attending physician.

Mrs. Montoya presents today concerned about breast cancer. She missed her last mammogram and is concerned today because a friend was recently diagnosed with breast cancer. Her last mammogram was approximately three years ago. She reports no breast pain, nipple discharge, or dimpling. Her Ob/Gyn history is significant for two uncomplicated vaginal births. Her periods stopped when she had an abdominal hysterectomy for symptomatic fibroids at age 46. She took oral estrogen after her hysterectomy but states one of her doctors took her off it a couple of years ago. She has not had any other surgery. She has never had an abnormal pap smear. She has a past medical history of hypertension and high cholesterol. Her medications include captopril 25 mg t.i.d., hydrochlorothiazide 25 mg per day, pravastatin 40 mg per day, and albuterol as needed. She takes no complementary or alternative medicines. She denies any allergies. She reports that she doesn't drink alcohol or use any drugs. Her physical activity consists of daily walks to the park with her grandson.

You and your attending enter the room to perform the physical exam together.

Session One -- Part Four

Physical Exam:

- General: Alert well-appearing Latina woman in no apparent distress
- Height: 160 cm
- Weight: 80 Kg
- BP: 144/90
- HR: 90
- Temp: 98.2
- Respirations: 16
- Oxygen saturation (room air) 98%
- Head: Normocephalic, atraumatic.
- Eyes: Normal fundoscopic exam
- Neck: No thyromegaly or lymphadenopathy. No carotid bruits or JVD.
- Chest: Clear to auscultation
- Cor: Normal JVP. Non-displaced PMI. Regular rhythm. Normal S1, S2. No S3, S4. No murmur or rub.
- Breasts: Symmetric. Non-tender. No skin dimpling with arm movements. No mass. No axillary adenopathy.
- Abdomen: Normoactive bowel sounds. Non-tender. Non-distended. No hepatosplenomegaly. No mass. Pfannenstiel skin scar. Waist 41 inches.
- Extremities: No cyanosis, clubbing or edema. Normal pulses.
- Neuro: Non-focal. Normal cranial nerve exam. Normal sensory exam. Normal DTRs.
- Pelvic: Normal external genitalia. Absent cervix and uterus. No pelvic tenderness or mass.
- Musculoskeletal: Normal range of motion.

Session One -- Part Five

While you and your attending are waiting for the patient to get dressed, you discuss the case. Your attending asks you what screening or diagnostic tests are indicated in Mrs. Montoya. She also asks what patient education information you think Mrs. Montoya might find useful. You both return to the room to discuss your thoughts with the patient and you ask her to schedule a follow-up visit in a couple of weeks.

Session Two -- Part Six and Seven

You are in the outpatient clinic when Mrs. Montoya returns for her follow-up visit. You go in to see how she has been. “Well, my friend talked to her doctor and I think they got all of the cancer.” When you ask about her fatigue she shrugs and says, “It’s the same as before.” You assure Mrs. Montoya that both her mammogram and clinical breast exam were normal. She sighs with relief. “Then every thing is fine.”

You tell Mrs. Montoya that you have some other concerns and go over her lab results with her.



Session Two (Ending One) - Part Eight

You reassure Mrs. Montoya that her ECG is normal and suggest some changes to her medications. You explain that you are going to increase her pravastatin to 80 mg per day since her total cholesterol is still higher than you would like to see it. In addition, you suggest a fluticasone inhaler for her asthma. You ask her to return in three months to recheck her blood pressure and check her response to the change in medications. You also ask her to schedule an appointment with the dietician to help control her cholesterol with diet.

Session Two (Ending One) - Part Nine

Two months later, you are on your Emergency Medicine clerkship and Mrs. Montoya is brought in by ambulance after suffering a massive MI. Her husband and daughter accompany her to the hospital, while the rest of the family waits at home for news. Although Mrs. Montoya receives cardiac resuscitation, she is pronounced dead soon after arriving at the emergency department (ED).

You accompany the attending when she goes to speak to the family; they are clearly agitated and worried when they see the two of you approaching. The attending takes the family aside and explains that Mrs. Montoya has had a heart attack and although everything was done to save her life, they were not able to save her. Her daughter breaks into tears and hugs her father, who also begins to cry. “Her chest didn’t hurt, she never had any symptoms, she just said she felt funny and laid down on the couch and I couldn’t get her up,” cried her daughter. “She felt ok, just tired. She was watching my son today, maybe she chased after him too much. I shouldn’t have left him with her every day, it was too much for her!”

The attending reassures the family. “There was nothing you could have done; it wasn’t your fault that your mother had a heart attack. You couldn’t have seen this coming and gotten her to the ED any sooner to save her life.”

After you leave the family, you tell your attending that you saw Mrs. Montoya in clinic a few months ago and ask what you could have done differently. The attending explains that, like men, women with heart disease most commonly present with chest pain or discomfort. But, women are more likely than men to experience some of the other common symptoms, such as shortness of breath. Mrs. Montoya’s dyspnea might have been a clue that she was suffering from heart disease.

A resting ECG can sometimes be normal even when severe cardiac disease is present, so a resting ECG cannot be used to exclude a possible diagnosis of cardiac disease. The next study for the patient would have been a type of stress test. Stress tests include exercise treadmill tests, exercise imaging tests and pharmacologic stress imaging tests. “If she could exercise, an exercise stress test would have been best, but because of her asthma, I think a pharmacologic stress test like a dobutamine echocardiogram would have been a good choice. The results of the test could have told you there was a blockage, and, if so, what further treatment might be needed.”

You ask about the patient and family’s description of her fatigue. Could that have been a clue for her risk for MI? The attending points out that some literature suggests that unusual fatigue may be a sign of impending infarction. She emphasizes that it is always important to take a further history and review of systems when patients present with fatigue.

You think back over Mrs. Montoya’s case and realize that she had significant cardiac risk factors and you realize that from this experience and the grief you feel over her loss that you won’t miss those signs again when you see a patient like Mrs. Montoya.

## Session Two (Ending Two) - Part Eight

After reviewing her tests, you and the attending explain to Mrs. Montoya that given her risk factors for cardiac disease and her fatigue and shortness of breath with exercise, you would like to do an ECG in the office today and call the hospital and schedule a stress test of her heart. “I don’t think anything is wrong with my heart, I don’t have any pain in my chest.”

The attending explains that, like men, women with heart disease most commonly present with chest pain or discomfort. But, women are more likely than men to experience some of the other common symptoms, such as shortness of breath. Feeling short of breath or a “different” sensation in the chest, neck, jaw, or abdomen, particularly with exertion or emotional stress, can be a sign of heart disease.

You tell her that the “stress” refers to exercise or medication that increases her heart rate. The “test” refers to an ultrasound (echocardiogram) or nuclear medicine study to look at the heart. You tell her that these tests are used to find areas of the heart that may have been damaged by coronary artery disease. Because her asthma restricts her ability to exercise, you recommend a dobutamine stress test.

You obtain an ECG.

Session Two (Ending Two) - Part Nine

Dobutamine Stress Tolerance Test:

Resting: Normal sinus rhythm

Dobutamine infusion:

- Symptoms: None
- Blood Pressure: Increased from 160/102 to 194/104
- Heart Rate: Increased from 86 to 154 bpm

ECG findings: ST elevation in V4-V6, II, and AVF at peak heart rate.

Recovery: Resolution of ST changes

Conclusion: There was ECG evidence of stress-induced ischemia. This is a positive test.

Mrs. Montoya returns to the office with her husband, following the stress test. You and the attending sit down to explain the results to her. You inform her that because her stress test was quite abnormal, she needs to undergo cardiac catheterization. She and her husband appear concerned when you explain this procedure to her. "Can my husband or my daughter be with me during the test?" You explain that they can accompany her to the hospital but will have to wait in the waiting room during the procedure. The attending goes on to explain that the test is quite routine and generally quite safe, but very helpful in providing crucial data on her heart.

Mr. Montoya quietly asks, "Are there any risks from having the test? It sounds pretty dangerous to me." Your attending explains the procedure and the risks and benefits of it. She explains that there is about a one in a thousand chance of major complications such as a stroke or heart attack as a result of the procedure. Mr. Montoya seems skeptical about approving the procedure while your attending continues to explain the benefits of knowing if there is a blockage. "If there is a blockage and we don't detect it in time, your wife could have a heart attack. So the benefits of the procedure outweigh the risks of it. When you go for the procedure, the cardiologist will explain the risks and benefits in detail."

The following week, Mrs. Montoya undergoes cardiac catheterization that reveals a diffusely diseased left anterior descending artery, a right dominant system with severe stenotic lesions and a left ventricular ejection fraction of 55%.

Two weeks later, Mrs. Montoya undergoes a four-vessel coronary artery bypass graft surgery, while her entire family waits anxiously in the waiting room. Mrs. Montoya's daughter-in-law helps out by watching Robert at home. Mrs. Montoya experiences no complications. She spends the first day in the intensive care unit, and then transfers to a surgical ward where her family visits her throughout her stay in the hospital. She is discharged in good condition on a low-saturated fat, low cholesterol diet with plan for cardiac rehabilitation after the post-op recovery period.

Six months later as you walk from the hospital to the outpatient clinic, you see Mrs. Montoya and ask her how she's doing. "I feel great. Robert is as energetic as ever, but I don't feel as tired as I used to feel even after spending the day chasing after him. My daughter is working 80% now and stays home with Robert one day a week. They all worry about me too much. I'm fine. I just have to try to stay on my diet. That's the hardest thing." You wish her good luck and go off to clinic.

## Reference and Resources List

### Behavior Change

Evaluating Primary Care Behavioral Counseling Interventions: An Evidence-based Approach. *Am J Prev Med* 2002;22:267-84.

<http://www.ahrq.gov/clinic/3rduspstf/behavior/behsum1.htm>

Theory at a Glance: A Guide for Health Promotion Practice, NIH Publication No. 95-3896.

<http://cancer.gov/cancerinformation/theory-at-a-glance>

Zimmerman G, Olsen C, Bosworth M. A ‘Stages of Change’ Approach to Helping Patients Change Behavior. *American Family Physician*, 2000; 61:1409-1416.

<http://www.aafp.org/afp/20000301/1409.html>

Selected Evidence for Behavior Approaches to Chronic Disease Management in Clinical Settings: Cardiovascular Disease.

<http://www.cfah.org/publications.cfm>

### Consumer Tools

Guide to Behavior Change: Your Weight Is As Important To Us As It Is To You!

[http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/behavior.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/behavior.htm)

*The Heart Truth* Campaign Consumer Website

<http://www.hearttruth.gov>

The Heart Healthy Handbook for Women, NIH Publication No. 05-2720

<http://www.nhlbi.nih.gov>

NHLBI Diseases and Conditions Index

<http://www.nhlbi.nih.gov/health/dci>

### Communication

Stuart, MR; Lieberman JR. BATHE: A useful Mnemonic for Eliciting the Psychosocial Context. *The Fifteen-Minute Hour: Applied Psychotherapy for the Primary Care Physician*, 2nd Ed. New York: Praeger, 2003.

### Cultural Diversity

Like, Robert C. TRANSLATE: A Mnemonic for Working with Medical Interpreters. 1997. MS Center for Healthy Families and Cultural Diversity Department of Family Medicine UMDNJ-Robert Wood Johnson Medical School.

<http://www.state.nj.us/health/fhs/bibs/education/translate.html>

Levin, SJ; Like, RC; Gottlieb, JE. ETHNIC: A Framework for Culturally Competent Clinical Practice. *Patient Care* 2000; 34:188-189.

### Depression

Sherrill JT, Anderson B, Frank E, et al. Is life stress more likely to provoke depressive episodes in women than in men? *Depression and Anxiety*, 1997; 6: 95-105.

Depression: What Every Woman Should Know. National Institute of Mental Health 2005.

<http://www.nimh.nih.gov/health/publications/depression-what-every-woman-should-know/summary.shtml>

### Diagnostic Testing

Mieres JH, Shaw LJ, Arai A, et al. Role of noninvasive testing in the clinical evaluation of women with suspected coronary artery disease: consensus statement from the Cardiac Imaging Committee, Council on Clinical Cardiology, and the Cardiovascular Imaging and Intervention Committee, Council on Cardiovascular Radiology and Intervention, American Heart Association. *Circulation*. 2005; 8;111:682-96.

<http://circ.ahajournals.org/cgi/content/full/111/5/682>

Gibbons RJ, Balady GJ, Bricker JT, et al. ACC/AHA 2002 guidelines update for exercise testing: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines). *J Am Coll Cardiol* 2002;40:1531-1540.

[http://www.acc.org/qualityandscience/clinical/guidelines/exercise/dirindex\\_summary.htm](http://www.acc.org/qualityandscience/clinical/guidelines/exercise/dirindex_summary.htm)

Cheitlin MD, Armstrong WF, Aurigemma GP, et al. ACC/AHA/ASE 2003 guideline update for the clinical application of echocardiography: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/ASE Committee to Update the 1997 Guidelines for the Clinical Application of Echocardiography). *J Am Soc Echocardiogr* 2003; 16:1091-1110.

<http://circ.ahajournals.org/cgi/content/full/108/9/1146>

### Hypercholesterolemia

Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III).

<http://www.nhlbi.nih.gov/guidelines/cholesterol>

Absolute CHD Risk Calculator.

<http://www.nhlbi.nih.gov/guidelines/cholesterol>

### Hypertension

JNC 7 Report on Hypertension.

<http://www.nhlbi.nih.gov/guidelines/hypertension>

DASH Eating Plan for the Treatment of Hypertension.

<http://www.nhlbi.nih.gov/health/public/heart/hbp/dash>

### Menopausal Hormone Therapy

ACOG Task Force for Hormone Therapy. Summary of Balancing Risks and Benefits. *Obstet Gynecol* 2004; 104 (4 Suppl): 1S-129S.

Position Statement: Estrogen and progestogen use in peri-and postmenopausal women: March 2007 position statement of The North American Menopause Society. *Menopause*. 2007; 14:168-182.

<http://www.menopause.org/PSHT07.pdf>

Facts About Menopausal Hormone Therapy, NIH Publication No. 05-5200.

[http://www.nhlbi.nih.gov/health/women/pht\\_facts.htm](http://www.nhlbi.nih.gov/health/women/pht_facts.htm)

### Nutrition/Dietary Recommendations

Dietary Approaches to Stop Hypertension (DASH). NIH Publication No. 03-4082.

<http://www.nhlbi.nih.gov/health/public/heart/hbp/dash>

Delicious Heart-Healthy Latino Recipes /Platillos Latinos, Sabroso y Saludables , NIH Publication No. 96-4049 .

[http://www.nhlbi.nih.gov/health/public/heart/other/sp\\_recip.pdf](http://www.nhlbi.nih.gov/health/public/heart/other/sp_recip.pdf)

NHLBI Reduced Calorie Menus for Various Cuisines.

[http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/sampmenu.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/sampmenu.htm)



Clinical Guidelines on Obesity Treatment.

[http://www.nhlbi.nih.gov/guidelines/obesity/ob\\_home.htm](http://www.nhlbi.nih.gov/guidelines/obesity/ob_home.htm)

NHLBI Interactive Meal Planner.

<http://hin.nhlbi.nih.gov/menuplanner/menu.cgi>

Keep the Beat Health Recipes, NIH Publication No. 03-2921.

[www.nhlbi.nih.gov/health/index.htm](http://www.nhlbi.nih.gov/health/index.htm)

NHLBI Portion Distortion.

<http://hin.nhlbi.nih.gov/portion>

### Prevalence & Incidence Data

Third National Health and Nutrition Examination Survey (NHANES III 1988 - 94)

<http://www.cdc.gov/nchs/about/major/nhanes/datalink.htm#NHANESIII>

Hispanic Health and Nutrition Examination Survey (HHANES)

[http://www.cdc.gov/nchs/products/elec\\_prods/subject/hhanes.htm](http://www.cdc.gov/nchs/products/elec_prods/subject/hhanes.htm)

### Prevention of Cardiovascular Disease in Women

Mosca L, Banka CL, Benjamin EJ, et al. Evidence-based guidelines for cardiovascular disease prevention in women: 2007 update. *Circulation* 2007; 115: 1481-1501.

<http://circ.ahajournals.org/cgi/content/full/115/11/1481>

### Smoking Cessation

Treating Tobacco Use and Dependence—Clinician’s Packet. A How-To Guide For Implementing the Public Health Service Clinical Practice Guideline, March 2003. U.S. Public Health Service. Agency for Healthcare Research and Quality. Rockville, MD.

<http://www.ahrq.gov/clinic/tobacco/>

### Risk Assessment

10-year CHD Risk Assessment Tool:

<http://hp2010.nhlbihin.net/atp/iii/calculator.asp?usertype=prof>

Tools for Personal Digital Assistants (PDAs)

Body Mass Index Calculator for Palm OS and Pocket PC 2003:  
[http://hin.nhlbi.nih.gov/bmi\\_palm.htm](http://hin.nhlbi.nih.gov/bmi_palm.htm)

ATPIII Cholesterol Management Implementation Tool for Palm OS.  
<http://hin.nhlbi.nih.gov/atp3/atp3palm.htm>

JNC 7 Application for Palm OS and Pocket PC. 2003:  
<http://hin.nhlbi.nih.gov/jnc7/jnc7pda.htm>

“Act in Time to Heart Attack Signs” Physician Quick Reference for Palm OS.  
[http://hp2010.nhlbihin.net/haac\\_palm/haac\\_palm.htm](http://hp2010.nhlbihin.net/haac_palm/haac_palm.htm)

Stress

Cohen, S, Kamarck, T., Mermelstein, R, et al. Perceived Stress Scale (PSS). Journal of Health and Social Behavior 1983;, 24;386-396. PSS scale available in English and multiple other languages.  
<http://www.psy.cmu.edu/%7Escohen/>

Symptoms of Acute Coronary Syndromes

Patel H, Rosengren A, Ekman I. Symptoms in acute coronary syndromes: does sex make a difference? Am Heart J 2004; 148:27-33.

*The Heart Truth* Professional Education  
Campaign Website:

<http://womenshealth.gov/hearttruth>