



Lifestyle Medicine: **Nutrition** and the **Metabolic Syndrome**

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Course Description

This course reviews the case of a 54-year-old gentleman who has full Metabolic Syndrome (i.e., impaired fasting glucose, pre-hypertension, low HDL, high triglycerides, and abdominal obesity). At his first visit to you this patient, who is new to town, will voice concern about his elevated blood glucose as well as his poor eating behavior and pattern.

Through the course of seven questions, you will learn how to counsel this patient about nutrition and behavior management using evidence based guidelines and expert opinion with a focus on lifestyle modification techniques. Updated criteria for Metabolic Syndrome diagnoses from the International Diabetes Federation (IDF) and updated American Diabetes Association (ADA) criteria for diagnosis of Type 2 Diabetes using HgA1c, as well as off label use of metformin in Metabolic Syndrome, will be addressed.

Original Release: 10/14/2010
Most Recent Update: 9/13/2011
Termination Date: 9/13/2014

NUMBER OF CREDIT HOURS: The Harvard Medical School designates this enduring material for a maximum of 1 *AMA PRA Category 1 Credit?* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

This course should take approximately 1 hours to complete.

COST: \$20.00 for the average user. A 50% discount is available for participants living in emerging nations, and participants living in Africa and Haiti can register for free. click [here](#) for international pricing.

OVERALL LEARNING OBJECTIVES:

After completing this course, participants will:

- Be able to identify Metabolic Syndrome per 2001 NCEP and recent 2005 IDF guidelines.
- Be able to perform basic nutritional assessment for a patient with Metabolic Syndrome.
- Learn to identify individualized goals including utilizing the patient's stage of readiness to change.
- Understand the use of appropriate follow-up and accountability for successful nutritional behavior change.

CLINICAL LEARNING OBJECTIVES:

Participants will learn to:

- Review basic nutritional guidelines within the weight control concept of timed eating.
- Describe the concept and practical application of calorie density

and its role in metabolic nutrition.

- Understand the importance of and learn how to utilize environmental and portion control with respect to nutritional behavior change.
- Employ ancillary specialists to enhance nutritional adherence

METHOD OF PARTICIPATION:

Registrants participate in the learning process by answering interactive multiple choice questions that are dispersed throughout the case presentation. You must answer a question correctly in order to continue through the course. If you answer a question incorrectly, you will be prompted to try again.

In order to earn credit, physicians must complete the entire educational activity before the termination date (see above). Non-physicians may register for the course but are not eligible for *AMA PRA Category 1 Credits?* Instead, non-physicians will earn a certificate of participation after successfully completing the course before its termination date.

COMBINATION OF MEDIA USED:

This internet enduring material is a case-based, interactive presentation comprised mainly of text, interactive questions, and images. A variety of media, including video clips, audio clips, and Flash animation, may be presented. Links to any necessary plugins are provided when necessary, but no plugins are required for general use of the CME website, and you may skip the multimedia presentation(s) within the course if you choose.

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Faculty

ELIZABETH PEGG FRATES, MD

Course Co-Director



Elizabeth Pegg Frates, MD, is a Clinical Instructor in the Department of Physical Medicine and Rehabilitation at Harvard Medical School and Assistant Director of Medical Education of the Institute of Lifestyle Medicine. Dr. Frates received her BA degree from Harvard University and medical degree from Stanford University School of Medicine.

Her focus is on the academic side of medicine, teaching the Human Central Nervous System, Musculoskeletal System, and Introduction to the Professions at Harvard Medical School. She is also a writer, stroke educator and researcher. Beth completed her internship in Internal Medicine at Massachusetts General Hospital and her residency in Physical Medicine and Rehabilitation at Spaulding Rehabilitation Hospital, where she served as Chief Resident.

Dr. Frates educates the public about stroke basics including risk factors, warning signs, what to do if someone is having a stroke and how to prevent a second stroke. Much of the prevention requires behavior modification. She is the co-author of the book *Life After Stroke: The Guide to Recovery and Preventing Another Stroke* published by Johns Hopkins University Press.

In residency, Dr. Frates worked on a study examining the exercise habits of physicians and comparing that to their counseling. She found that physicians who exercise themselves are more likely to counsel patients about exercise.

Dr. Frates is an avid runner, completing her first race, a 10-mile course on Nantucket Island, when she was in 7th grade. More recently, in May 2006, she completed the Vermont Half Marathon as a member of the Train to End Stroke team with the American Heart Association.

DISCLOSURE:

Founder, Wellness Synergy, LLC (wellness coaching and private practice)

TOM RIFAI, MD

Course Co-Director



Dr Rifai is a member of the Board of Directors for the American Board of Physician Nutrition Specialists as well as board certified by the American Board of Internal Medicine. He presently serves as Medical Director of the hospital-based, interdisciplinary Metabolic Nutrition and Weight Management program for St. Joseph Mercy Oakland in Pontiac, Michigan.

From January through November of 2008, Dr Rifai served as the Associate Medical Director for the world renown, multidisciplinary intensive lifestyle change program at The Pritikin Longevity Center in Miami, Florida, spearheading efforts to revamp their nutrition, lab testing, supplement and educational programs ? particularly as it applies to obesity, diabetes, and lipids. In January 2009, Dr. Rifai brought his unique talents back to his original home of Metro Detroit and designed a comprehensive metabolic gourmet menu for the Andiamo Restaurant Group with their executive chefs. The menu, 拮ndiamo Lean,? is now available at 12 gourmet restaurants area-wide and proves that gourmet and health do not need to be mutually exclusive. He is also working intensively with Michigan拮 15,000 student Warren Consolidated Schools system to launch an ultra-healthy lunch program in 2010. After graduating with 拮ighest Honor? from Michigan State University with a Bachelors of Science in Psychology & Pre-Med in 1992, he received his M.D. in 1999 from Wayne State University School of Medicine. During his senior Internal Medicine residency year in 2003 at William Beaumont Hospital in Royal Oak, Michigan, he served as the chief resident coordinator of its Nutrition, Preventive Medicine and Weight Control Center ? one of the 1st state-of-the-art, multidisciplinary weight management programs in the USA. Dr. Rifai has been appointed as Clinical Assistant Professor of Medicine at Wayne State University拮 School of Medicine since his graduation and has been an invited lecturer to his alma mater拮 medical students on several occasion

DISCLOSURE:

The commercial entities with which I have relationships do not produce health-care related products or services relevant to the content I am planning, developing or presenting for this activity.

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Reviewers

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DAVID EISENBERG, MD

Reviewer



David M. Eisenberg is the Director of the Osher Research Center at Harvard Medical School and the Division for Research and Education in Complementary and Integrative Medical Therapies and the Director of the Program in Integrative Medicine at the Brigham & Women's Hospital. He is also the Bernard Osher Associate Professor of Medicine at Harvard Medical School. Dr. Eisenberg is a graduate of Harvard College and Harvard Medical School. He completed his fellowship training in general internal medicine and primary care and is Board Certified in Internal Medicine. In 1979, under the auspices of the National Academy of Sciences Dr. Eisenberg served as the first US medical exchange student to the People's Republic of China. In 1993, he was the medical advisor to the PBS Series, *Healing and the Mind?* with Bill Moyers. More recently, Dr. Eisenberg served as an advisor to the National Institutes of Health, the Food and Drug Administration and the Federation of State Medical Boards with regard to complementary, alternative and integrative medicine research, education and policy. From 2003-2005 Dr. Eisenberg served on a National Academy of Sciences Committee responsible for the Institute of Medicine Report entitled, *The Use of Complementary and Alternative Medicine by the American Public.* Dr. Eisenberg has authored numerous scientific articles involving complementary and integrative medical therapies and currently oversees Harvard Medical School's research, educational and clinical programs in this area.

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Reported no relevant financial relationships with commercial entities.

GEORGE GRUNBERGER, MD, FACP,

Reviewer



George Grunberger, MD, is the founder and chairman of GDI. Dr. Grunberger, an experienced diabetologist, is a Clinical Professor of Internal Medicine and of Molecular Medicine & Genetics at Wayne State University School of Medicine. Before establishing GDI, Dr. Grunberger was Director of the Diabetes Program at the Detroit Medical Center for sixteen years as well as the Medical Director of Wayne State University's Morris J. Hood Comprehensive Diabetes Center. Dr. Grunberger held tenured Full Professor appointments at the University in Department of Internal Medicine and in the Center for Molecular Medicine and Genetics since 1986. Between 1997 and 2001 he was Henry L. Brasza Director of the Center for Molecular Medicine and Genetics. Prior to that (1995-1996) Dr. Grunberger served as interim Chairman of the Department of Internal Medicine and Physician-in-Chief of the Detroit Medical Center. Dr. Grunberger was originally recruited to Detroit from the Diabetes Branch of the National Institute of Diabetes, Digestive and Kidney Diseases of the National Institutes of Health in Bethesda, MD where he worked as a basic and clinical researcher for six years. Dr. Grunberger has received his internal medicine training at the University Hospitals of Cleveland at Case Western Reserve University, his medical (M.D.) training at the New York University School of Medicine and his bachelor's degree (in biochemistry) at Columbia College of Columbia University, also in New York City. Dr. Grunberger's clinical and basic research endeavors have been well recognized. He has published over hundred original peer-reviewed manuscripts, in addition to review articles, abstracts, book chapters, and letters to journals. His research interests have spanned the spectrum of subjects related to

diabetes and its complications, from very basic studies on molecular underpinning of insulin action and insulin resistance to clinical research studies on many aspects of diabetes and its management. In 20

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GRAHAM MCMAHON, MD MMSC

Reviewer



Graham McMahon MD MMSc is an assistant professor of medicine and member of the Academy at Harvard Medical School. He is a member of the faculty in the division of endocrinology, diabetes and hypertension at the Brigham & Women's Hospital in Boston where he completed his postgraduate training. Dr. McMahon received his medical education at the Royal College of Surgeons in Ireland, a master's degree in clinical research from Harvard Medical School, and his doctorate in education from the National University of Ireland. He is the editor for medical education at the New England Journal of Medicine. He also directs the endocrinology course at Harvard Medical School. He has received local and national awards for his teaching and his work in medical education and diabetes research. His work has been published in the New England Journal of Medicine, Diabetes Care, the Archives of Internal Medicine, the Journal of General Internal Medicine, and Medical Education. His research interests include systems of care for patients with diabetes, cardiovascular disease in diabetes, and medical education.

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Course Planners

SANJIV CHOPRA, MD

Planner



Dr. Sanjiv Chopra is Professor of Medicine and Faculty Dean for Continuing Medical Education at Harvard Medical School and Senior Consultant in Hepatology at the Beth Israel Deaconess Medical Center, Boston. In his role as Faculty Dean for Continuing Education, Dr. Chopra provides oversight and leadership of the Department and oversees the academic development of our programs. Dr. Chopra is an experienced clinician, researcher, and educator. In his research roles, he has served both as a principal investigator as well as co-investigator. He has more than 120 publications and five books to his credit, addressing topics in disease states, patient care, and leadership. Dr. Chopra's teaching experience is extensive, and he has won numerous teaching awards for his work with medical students, residents and physicians. Currently, he directs and speaks at 10 multiday CME courses, nine of which are through HMS. For his full bio, please click [here](#).

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ANDI LONG, EDM

Planner



Andi Long directs the Department of Continuing Education and Distance Learning group, which offers a variety of online continuing medical education programs to health care professionals around the world. Andi develops strategies for new pilot programs and systematically rolls out new distance learning initiatives and has a leadership role in IT planning and other online processes for HMS DCE. She oversees the day-to-day operations of each distance learning activity and ensures ACCME compliance across all enduring programs. She has had the privilege of working with hundreds of Harvard Medical School Faculty members to develop high-quality, engaging online programs that physicians in more than 170 countries have taken part in. Andi earned her Ed.M. in [Technology, Innovation, and Education](#) from Harvard Graduate School of Education and graduated from Bridgewater State College, *summa cum laude*, with a degree in English. Her professional interests focus on teaching and learning with new technologies and online course development.

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Accreditation

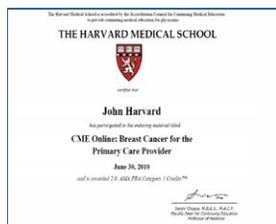
NUMBER OF CREDITS: 1

The Harvard Medical School is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Harvard Medical School designates this enduring material for a maximum of 1 *AMA PRA Category 1 Credit*?. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

This course should take approximately 1 hours to complete.

Within 2 weeks of completing the course, you will receive your certificate via email.



Click the image to view a sample of the certificate

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General Information

HARDWARE/SOFTWARE REQUIREMENTS

Computers

Any computer running Windows, Mac OS, or Unix machines are supported.

Internet Connection

Your computer should be configured to access the Internet. A high speed internet connection may be required to view some of the large multimedia files.

Browsers

Internet Explorer 5.5 or higher is recommended. However, Internet Explorer 4.0 or Netscape 4.0 or newer versions will also work. JavaScript and cookies must be enabled.

Plugins

Some of the multimedia resources in this course require Apple Quicktime, RealMedia, or a Flash player. You will be prompted to download the appropriate plugin when necessary. No plugins are required for general use of the CME website, and you may skip the multimedia presentation(s) within the course if you choose.

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