AMERICAN SOCIETY
of
PREVENTIVE ONCOLOGY

1976-2009

33rd ANNUAL MEETING

PROGRAM & ABSTRACTS

March 8-10, 2009

The Renaissance Tampa Hotel – Tampa, Florida

American Society of Preventive Oncology

33rd Annual Meeting

Program Co-Chairs:

Anna Giuliano, PhD

H. Lee Moffitt Cancer Center and Research Institute

Mary Reid, PhD

Roswell Park Cancer Institute

The **American Society of Preventive Oncology** is an active and growing organization that is striving to: 1) promote the exchange and dissemination of information and ideas relating to cancer prevention and control; 2) identify and stimulate research areas in cancer prevention and control; and 3) foster the implementation of programs in cancer prevention and control.

Meetings of the **American Society of Preventive Oncology** are organized for professionals in clinical, educational or research disciplines who appreciate the challenges of a multidisciplinary scientific forum and who are committed to a comprehensive approach to cancer prevention and control.

Special Acknowledgements

The ASPO Executive Committee offers special thanks to Program Co-Chairs, **Drs. Anna Giuliano** and **Mary Reid**, for their extraordinary commitment in facilitating the development of the program for this meeting, and to the entire 2009 ASPO Program Committee for their hard work on the program.

2009 Program Committee

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H. Lee Moffitt Cancer Research Center

Mary Reid, PhD, Co-Chair
Roswell Park Cancer Institute

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H. Lee Moffitt Cancer Research Center

NEXT YEAR . . .

The 34th Annual Meeting of the American Society of Preventive Oncology will be held:

March 21-23, 2010, at the Marriott Bethesda North Hotel
Bethesda, Maryland

Support Acknowledgements

The conference organizing committee wishes to express appreciation to the following organizations and companies for their commitment to continuing medical education by providing educational grants in support of this conference:

National Cancer Institute (conference grant R13 CA094927)
Merck & Co., Inc.
Prevent Cancer Foundation
American Cancer Society
American Association for Cancer Research

Exhibitors

The conference organizing committee wishes to express appreciation to the following organizations:

Merck & Co., Inc.

Merck & Co., Inc., is a global research-driven pharmaceutical company dedicated to putting patients first. Established in 1891, Merck discovers, develops, manufactures and markets vaccines and medicines to address unmet medical needs. For more information, visit: www.merck.com.

Division of Cancer Control and Population Sciences (DCCPS) National Cancer Institute

dccps.nci.nih.gov

DCCPS aims to reduce the risk, incidence, and deaths from cancer as well as enhance the quality of life for cancer survivors.

The Division conducts and supports an integrated program of the highest quality genetic, epidemiologic, behavioral, social, and surveillance cancer research.

Cancer Prevention Fellowship Program, National Cancer Institute

The Cancer Prevention Fellowship Program at the National Cancer Institute provides training for clinicians and scientists in the field of cancer prevention and control. As part of the program, we offer training toward an MPH degree at an accredited university during the first year, followed by mentored research with investigators at the NCI.

American Association for Cancer Research


MERCK


prevent cancer
FOUNDATION

POST-DOCTORAL TRAINING IN BEHAVIORAL ONCOLOGY

The H. Lee Moffitt Cancer Center & Research Institute, an NCI-designated Comprehensive Cancer Center, invites applications to its post-doctoral training program in behavioral oncology. This NCI-funded interdisciplinary training program is designed to prepare fellows for careers as independent investigators engaged in research on behavioral aspects of cancer prevention, detection and control. The program combines a specialized curriculum (formal didactic training and one-on-one interactions with experienced mentors) with research experience (participation in funded studies under the guidance of an experienced investigator). Current funded areas of faculty research include: nicotine dependence and tobacco control, cervical cancer prevention, cultural and literacy issues in cancer prevention and control, disparities in cancer care, quality of life issues in cancer survivors, and psychosocial interventions for family caregivers of cancer patients. Training faculty include: Thomas Brandon, Ph.D.; David Drobes, Ph.D.; Anna Giuliano, Ph.D., Paul Jacobsen, Ph.D.; Cathy Meade, Ph.D., R.N., Susan McMillan, Ph.D., R.N., Richard Roetzheim, M.D., and Susan Vadaparampil, Ph.D. Applicants must have a terminal degree (Ph.D., Ed.D., Sc.D., D.P.H. or M.D.) in a social science, a behavioral science, nursing, education, public health or medicine and be committed to a career in behavioral oncology research. Stipends and benefits are highly competitive.

Review of applications will begin immediately and continue until positions are filled. Applicants must be U.S. citizens or permanent residents. To apply, send completed application form (available at the website listed below), curriculum vitae and two letters of reference to:

Christine A. Marsella, Research Program Associate,
H. Lee Moffitt Cancer Center & Research Institute,
12902 Magnolia Drive, MRC-PSY, Tampa, Florida 33612;
e-mail: christine.marsella@moffitt.org.

For more information about the program, please visit the following website: http://www.moffitt.org/behavioraloncology.

Moffitt is an Equal Opportunity/Affirmative Action/ Drug Free Workplace

MOFFITT CANCER CENTER

1-888-MOFFITT | 12902 Magnolia Drive | Tampa, FL 33612

Follow the momentum at MOFFITT.org

Honoring the Service of
Robert M. Chamberlain, Ph.D.

In honor of his accomplishments and on the occasion of his pending retirement, the faculty, staff, and trainees of The University of Texas M. D. Anderson Cancer Center's Division of Cancer Prevention and Population Sciences extend their most sincere gratitude and congratulations to Robert M. Chamberlain, Ph.D., UT Distinguished Teaching Professor and ad interim chair for the Department of Epidemiology. Dr. Chamberlain serves as principal investigator of the Cancer Prevention Research Training Program. Funded by the National Cancer Institute (NCI), it is one of the nation's longest-running and most successful training programs in cancer prevention. His service extends beyond M. D. Anderson to include membership on advisory committees for cancer prevention training programs at other leading cancer centers and on the NCI subcommittee G review section, for which he serves as current chair and past permanent member.

We honor his past achievements, including receipt of the first M. D. Anderson Postdoctoral Association Distinguished Mentor Award, which is named for him, and salute Dr. Chamberlain on his research accomplishments in cancer risk modification and prevention trial participation.

Robert M. Chamberlain, Ph.D.
UT Distinguished Teaching Professor
and Ad Interim Chair,
Department of Epidemiology

THE UNIVERSITY OF TEXAS
MD ANDERSON
CANCER CENTER
Making Cancer History®

In Appreciation of
Margaret R. Spitz, M.D., M.P.H.

Margaret R. Spitz, M.D., M.P.H.
Professor and Former Chair,
Department of Epidemiology
Special Advisor to the Vice President

THE UNIVERSITY OF TEXAS
MD ANDERSON
CANCER CENTER
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The faculty and staff of The University of Texas M. D. Anderson Cancer Center's Division of Cancer Prevention and Population Sciences congratulate Margaret R. Spitz, M.D., M.P.H., professor of epidemiology, on her recent retirement as chair of the Department of Epidemiology. Having held the position since the department's inception, the impact of Dr. Spitz's scientific accomplishments is immeasurable. Her numerous awards include the American Society for Preventative Oncology's Distinguished Achievement Award; the NCI's Rosalind E. Franklin Award for Women in Science; and induction into The Greater Houston Women's Chamber of Commerce (GHWCC) Hall of Fame. These accolades have only been surpassed by her mentorship to scores of M. D. Anderson trainees and to the scientific community beyond.

Dr. Spitz now serves as special advisor to the vice president of the Division of Cancer Prevention and Population Sciences. She has contributed to more than 350 scientific publications, and currently serves as principal investigator on three National Institutes of Health research project grants.

National Cancer Institute

Fellowships in Cancer Epidemiology and Genetics

Division of Cancer Epidemiology and Genetics

Fellowships in Cancer Epidemiology and Genetics, National Cancer Institute

Discovering the Causes of Cancer and the Means of Prevention

The Division of Cancer Epidemiology and Genetics (DCEG), an intramural research program of the National Cancer Institute (NCI), National Institutes of Health (NIH), conducts population and multidisciplinary research to discover the genetic and environmental determinants of cancer and new approaches to cancer prevention.

Fellowship Opportunities

DCEG provides research and training resources and senior faculty for highly distinctive postdoctoral and predoctoral fellowships, including those of a multidisciplinary nature. DCEG fellows design, carry out, analyze, and publish research studies related to the etiology of cancer in human populations, with opportunities to work on large prospective cohort studies and international collaborations. Research topics encompass the full range of cancer risk factors as well as biostatistical approaches. Emphasis is placed on the inclusion of genomic and other emerging technologies into epidemiologic study designs to uncover genetic/environmental determinants and pathways of cancer induction and progression.

A Multi-Faceted Research Program

Through its programs in cancer epidemiology, genetics, statistics, and related areas, DCEG:

(1) Conducts broad-based, high-quality, high-impact research into cancer etiology and prevention;

(2) Maintains a national and international perspective, giving priority to emergent issues identified through clinical, laboratory, and epidemiologic observations, as well as to public health concerns identified by the Institute, Congress, regulatory agencies, and other appropriate bodies;

(3) Develops infrastructures, resources, and strategic partnerships in molecular epidemiology, including genome-wide association studies involving intramural/extramural consortia; and

(4) Trains the new generation of scientists in cancer epidemiology, genetics, and related fields.

Areas of Investigation

Major areas of investigation include:

- biostatistics and methodology
- clinical genetics
- descriptive epidemiology
- diet and nutrition
- exposure assessment
- hormonal factors
- gene-environment interactions
- hereditary syndromes
- molecular and genetic epidemiology
- multiple primary cancers
- occupational exposures
- pharmacoepidemiology
- pharmacogenetics
- radiation
- risk assessment

To learn more about the Division visit our web site on: http://dceg.cancer.gov. To inquire about fellowships contact the DCEG Office of Education by email: ncidceged-r@mail.nih.gov

Joseph F. Fraumeni, Jr., M.D.
Director, Division of Cancer Epidemiology and Genetics, NCI, NIH

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

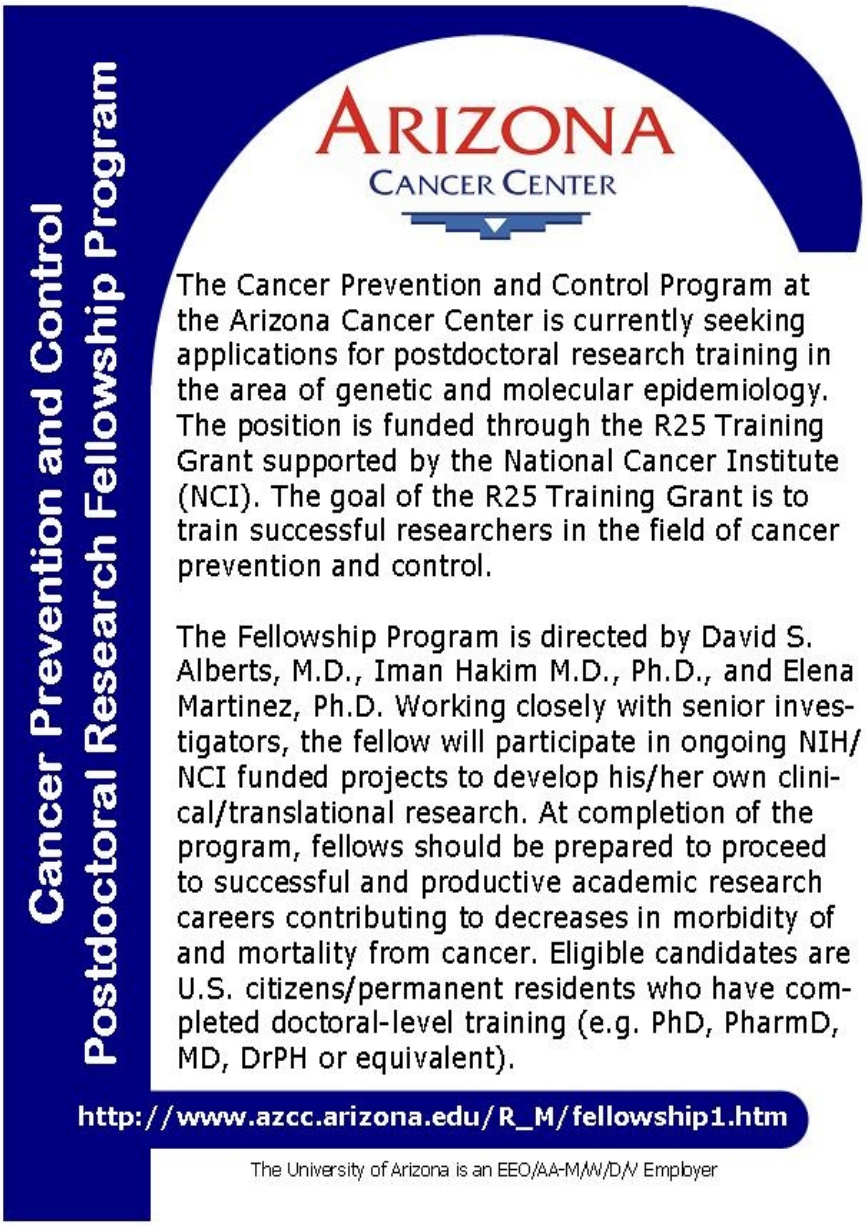
National Institutes of Health

Columbia University's Herbert Irving Cancer Comprehensive Cancer Center and Mailman School of Public Health

The Herbert Irving Comprehensive Cancer Center at Columbia University seeks four new faculty members at the level of Assistant and/or Associate Professor and/or Professor level. Incumbents will work with a multidisciplinary team of researchers led by Alfred I. Neugut, MD, PhD, engaging in clinical and epidemiologic research in conjunction with other faculty at the Cancer Center, the Mailman School of Public Health, and at Columbia University Medical Center. Incumbents will be expected to develop and conduct independent research in the field of cancer epidemiology or molecular cancer epidemiology; addressing causes, natural history and treatment of cancer. Expertise in prostate cancer etiology, social disparities and/or behavioral research, or laboratory methods is preferred. They will also participate in teaching and mentoring masters and or doctoral students in the Mailman School of Public Health.

Minimum Qualifications:
A doctoral degree (MD or PhD or equivalent). Demonstrated success in working with multidisciplinary, multi-institutional teams. Strong publication record. Demonstrated success in obtaining funding for independent research, particularly for Associate Professor or Professor rank.

Please send CV and cover letter to: cv@icg.cpmc.columbia.edu
Columbia University is an Affirmative Action/Equal Opportunity Employer


Cancer Prevention and Control
Postdoctoral Research Fellowship Program
ARIZONA
CANCER CENTER
The Cancer Prevention and Control Program at the Arizona Cancer Center is currently seeking applications for postdoctoral research training in the area of genetic and molecular epidemiology. The position is funded through the R25 Training Grant supported by the National Cancer Institute (NCI). The goal of the R25 Training Grant is to train successful researchers in the field of cancer prevention and control.
The Fellowship Program is directed by David S. Alberts, M.D., Iman Hakim M.D., Ph.D., and Elena Martinez, Ph.D. Working closely with senior investigators, the fellow will participate in ongoing NIH/NCI funded projects to develop his/her own clinical/translational research. At completion of the program, fellows should be prepared to proceed to successful and productive academic research careers contributing to decreases in morbidity of and mortality from cancer. Eligible candidates are U.S. citizens/permanent residents who have completed doctoral-level training (e.g. PhD, PharmD, MD, DrPH or equivalent).
http://www.azcc.arizona.edu/R_M/fellowship1.htm
The University of Arizona is an EEO/AA-M/W/D/V Employer

UIC UNIVERSITY OF ILLINOIS AT CHICAGO Institute for Health Research and Policy
SCHOOL OF PUBLIC HEALTH

Post Doctoral Fellowship in Cancer Prevention and Control

The University of Illinois at Chicago Cancer Education and Career Development Program is seeking candidates for a two- to three-year postdoctoral fellowship in cancer prevention and control research. Qualified individuals must have completed a PhD or MD and must be a US citizen or have permanent status.

The position will be available beginning July 1, 2009. Applications are being accepted until March 30, 2009 or until the position is filled.

For further information on the program and the application process, please visit our website at http://cecdp.hrpc.uic.edu, or contact Candice Zahora, University of Illinois at Chicago, Cancer Education and Career Development Program, 1747 west Roosevelt Rd, M/C 275, Chicago, Illinois 60608, Telephone: 312-996-2664 or e-mail: czahora@uic.edu

Please email czahora@uic.edu if you would like us to contact you to discuss the program.

Faith Davis PhD
CECDP C0-Director

Usha Menon, PhD, RN
CECDP Co-Director

In memoriam

Dr. Eugenia “Jeanne” Calle was a distinguished cancer epidemiologist who served as Vice President of Epidemiology for the American Cancer Society until her recent retirement. She died suddenly on February 17, 2009, the victim of a violent crime. Her legacy includes two landmark studies on the relationship of obesity to cancer and other diseases, important contributions to understanding risk factors for breast and ovarian cancers, and research on the effects of hormone-replacement therapy. Perhaps even more importantly, during her 20-year career at the American Cancer Society (ACS), Dr. Calle played an instrumental leadership role in developing the ACS’s Cancer Prevention Studies into major valued resources for epidemiologic research in many different areas, including air pollution, nutrition, physical activity, medications, and cancer susceptibility genes. As well as being a long-time member of ASPO, Dr. Calle served as a member of the National Cancer Institute’s Board of Scientific Counselors, the American Epidemiological Society, as an adjunct Professor of Epidemiology at the Rollins School of Public Health, Emory University, and on the editorial boards of several prominent cancer journals. Before joining the American Cancer Society, Dr. Calle worked as an epidemiologist at the Oak Ridge National Laboratory in the area of cancer risk assessment, and at the Centers for Disease Control on the Agent Orange Projects.
Dr. Calle collaborated extensively with others in the cancer research and public health communities. She will be remembered by many for her lively sense of humor and commitment to her colleagues, as well as for her formidable intellect and passion for research.

ASPO – 2009

Executive Committee

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GENERAL INFORMATION

Assistance to Participants

The American Society of Preventive Oncology meeting staff is available to provide assistance or information at any time during the meeting. Questions should be addressed to the staff members and volunteers at the Registration Desk.

Poster Session

This year about 80 posters will be on display beginning at 5pm on Monday, March 9, on the ballroom level. Posters can be displayed beginning at noon on Monday (and must be taken down immediately after the poster reception). There will be a Poster Session and Reception on Monday evening from 6pm – 8pm. Distinguished panels of senior faculty will select an outstanding poster at this session. Awards will be announced and presented at the close of each session, along with a brief discussion of the winners' merits. *Presenters should be positioned near their posters during the poster session for discussion and judging. All posters not taken down by 8:30pm Monday evening will be taken down and put in the registration area.*

PLEASE HELP US PLAN FOR THE FUTURE. . .

At the close of the meeting please take a few minutes to complete the questionnaire at the back of this program. This will help future Program Committees and conference staff to better meet your professional and logistical needs. There will also be an on-line survey sent soon after the meeting.

ASPO 2009 - Program Details

Saturday, March 7, 2009

4:00pm – 7:00 pm
Genoa

Part I: Special Workshop for Associate Directors for Cancer Prevention and Control

Sunday, March 8, 2009

8:00 am -- 5:00 pm

Registration

8:00 am – 12:00 pm
Genoa

Part II: Special Workshop for Associate Directors for Cancer Prevention and Control

8:00 am – 12:00 pm

Special venue: Hilton Tampa Airport Westshore
19th Annual National Cancer Institute Special Workshop of Grantees, Trainees, and Fellows in Cancer Prevention, Control, Behavioral and Population Sciences (by invitation only).
The purpose of this special meeting is twofold: to help K awardees and NCI Fellows successfully transition from being mentored scientists to being independent scientists and to clarify the NCI grant application and award process.

12:00 pm – 2:00 pm
Livorno

ASPO Executive Committee Working Lunch
(Executive Committee members only)

1:00 pm – 3:00 pm
Kalamata

NCI Meeting for R25T Investigators

1:00 pm – 3:00 pm
Ballroom A-C

Career Development for Junior Faculty, Junior Researcher & Trainees

"Transition from Mentored Scientist to Career Independence"

Co-Chairs: Jennifer Hatcher, PhD, University of Kentucky and
Karen Wernli, PhD, Fred Hutchinson Cancer Research Center

1) Goal Setting and Planning the First R01/Team Building
Mark Dignan, PhD, University of Kentucky
2) Grant and Manuscript Reviewing
Kathleen Egan, ScD, H. Lee Moffitt Cancer Research Center
3) Changing Faculty Roles After the K Award
Mary Beth Terry, PhD, Columbia University

Sunday, March 8, 2009 (cont)

2:00 pm - 6:00 pm **New Investigators Workshop** -- (Open only to accepted applicants)

Salon F Organizers: **Alfred I. Neugut, MD, PhD**
Columbia University Mailman School of Public Health &
Judith Jacobson, DrPH
Columbia University Mailman School of Public Health

Workshop Faculty: **Elliot Coups, PhD,** Fox Chase Cancer Center
Wendy Demark-Wahnefried, PhD, M.D. Anderson Ca Ctr
Michael Scheurer, PhD, MPH, Baylor College of Medicine

NIW Workshop Participants:

Lauren Arnold, PhD, MPH
Washington University in St. Louis
Andrea Burnett-Hartman, MS
University of Washington
Cynthia Mojica, PhD
UC - Los Angeles
Raheem Paxton, PhD
UT M.D. Anderson Cancer Center
Lynette Phillips, PhD
Case Western Reserve University
Sandi Pruitt, PhD, MPH
Washington University in St. Louis
Cheryl Thompson, PhD
Case Western Reserve University
Kuang-Yi Wen
Fox Chase Cancer Center

Sunday, March 8, 2009 (cont.)

3:30pm – 5:30 pm **ASPO Educational Workshops (Concurrent Sessions)**
(separate registration necessary)

3:30 pm – 5:30 pm **Course A1**
Genoa **Research Methodology for Cancer Prevention Intervention Studies**
Instructor: **Karen Glanz, PhD, MPH,** Emory University

- Typology of cancer prevention intervention studies
- Research design options
- Types of measures
- Timing of measures
- Interventions in studies of individuals
- Organizational interventions/cluster randomized studies
- Balancing the options in study design

3:30 pm – 5:30 pm **Course A2**
Kalamata **Using Bioinformatics Tools to Interpret and Design Molecular Epidemiology Studies**
Instructor: **David Fenstermacher, PhD,** Moffitt Cancer Research Center

- Genome/DNA resources
- Protein databases and analysis tools
- Pathway databases
- SNP databases
- Microarray databases and analysis tools
- caBIG®

ASPO Educational Sessions are sponsored by the American Association for Cancer Research

5:30 – 7:30 pm Junior/Senior Social Mixer (open to all registrants)
Hotel courtyard

ASPO 2009 - Program Details

Monday, March 9, 2009

7am – 5pm **Registration**

7:15 – 8:45 am **Hot Topics Breakfast Sessions** (two sessions)

7:15 – 8:45 am ***I. Survivorship Special Interest Group Breakfast***
Genoa
Chair: **Diana Buist, PhD,** Group Health Center for Health Studies

Topic: "Identifying key questions to advance research and practice in cancer survivorship follow-up care"

Presenters: **Jessica Chubak, PhD**, Group Health Center for Health Studies
Elliot Coups, PhD, Fox Chase Cancer Center
Shawna Hudson, PhD, UMDNJ-RWJ Medical School

Goal: This session will focus on several questions key to advancing cancer survivorship research. The group will discuss current trends in survivor research and new directions. A central topic will be how to generate research that balances cancer prevention needs with other health promotion topics as they relate to cancer survivors' follow-up care.

7:15 – 8:45 am ***II. Tobacco Special Interest Group Breakfast***
Kalamata

Chair: **Alexander Prokhorov, MD, PhD**, UT M.D. Anderson Cancer Center

Topic: "The Current State of Tobacco Control Among Adolescents and Young Adults"

9:00 am **Welcoming Remarks**
Ballroom A-D
ASPO President, **James Marshall, PhD,** Roswell Park Cancer Institute
Program Co-Chair: **Anna Giuliano, PhD,** H. Lee Moffit Cancer Center
Program Co-Chair: **Mary Reid, PhD,** Roswell Park Cancer Institute

Business Meeting and Treasurer's Report

9:15 – 10:00 am **Presidential Address** – "Epidemiology: Keeping an Eye on the Ball"
James Marshall, PhD, Roswell Park Cancer Institute

10:00 am Break

Monday, March 9, 2009 (cont.)

10:15 – 11:30 am **Symposium 1: Challenges in Prevention of Rare Cancers**
Ballroom A-D

Chair: **Michael Scheurer, PhD**, Baylor College of Medicine

Speaker: **Julie Ross, PhD,** University of Minnesota
Topic: Childhood Cancer: Challenges and Opportunities

Speaker: **Sara H. Olson, PhD,** Memorial Sloan-Kettering Cancer Center
Topic: A Tale of Two (Rare) Cancers: Studying Endometrial and Pancreatic Cancer

11:30 am – 12:45 pm **Symposium 2: From Cells to Society – Transdisciplinary Approaches to Addressing Cancer Health Disparities**
Ballroom A-D

Chair: **Electra Paskett, PhD,** The Ohio State University

Speaker: **Tim Rebbeck, PhD,** University of Pennsylania
Topic: Multilevel Analysis of Genotype and Neighborhood Effects in Prostate Cancer Outcomes

Speaker: **Sarah Gehlert PhD,** University of Chicago
Topic: Transdisciplinary Science to Understand Disparities in Breast Cancer

Discussant: **Richard Warnecke, PhD,** University of Illinois - Chicago

12:45 – 2:15pm **Lunch on your Own/Poster Set-up**

12:45 – 2:15 pm **Career Development for Junior Faculty, Junior Researchers and Trainees** (open to all meeting attendees)
Livorno/Marbella

"Understanding the NIH Process of K Awards: From Submission to Career Success"
Co-Chairs: **Julie Worthington, PhD**, Case Western Reserve University &
Julie Kapp, PhD, University of Missouri

Speakers: **Al Neugut, MD, PhD,** Columbia University
Shannon Lemrow, PhD, National Cancer Institute
Kristi Graves, PhD, Georgetown University
James Cerhan, MD, PHD, Mayo Clinic
Sponsored by the Prevent Cancer Foundation
(Box lunches will be available)

2:15-2:45 pm **Distinguished Achievement Awardee Address**
Ballroom A-D
Mitchell H. Gail, MD, PhD, National Cancer Institute
"Risk Models and Breast Cancer Prevention"

The Distinguished Achievement Award is sponsored by the American Cancer Society

Monday, March 9, 2009 (cont.)

2:45- 3:00 pm **Prevent Cancer Foundation Fellowship Awardee Address**
Karen Wernli, PhD, Fred Hutchinson Cancer Research Center
"Medications, Multivitamins, and Breast Cancer Survival"

3:00 – 4:15 pm **Symposium 3: Infection and Cancer: More than HPV**
Ballroom A-D
Chair: **Dana Rollison, PhD,** H. Lee Moffitt Cancer Center

Speaker: **Jurgen C. Becker, MD, PhD,**
University Clinic of Wurzburg, Germany
Topic: Merkel Cell Polyomavirus and Merkel Cell Carcinoma

Speaker: **Sally L. Glaser, PhD,** Northern California Cancer Center
Topic: Epstein-Barr Virus and Lymphoma

Speaker: **Volker Mai, PhD,** University of Florida
Topic: Preventing Cancer by Modifying the Host Associated Microbiota

4:15 pm BREAK

4:45 – 6:00pm **Symposium 4: Transitioning from Cancer Patient to Cancer Survivor**
Ballroom A-D
Chair: **Susan Vadaparampil, PhD,** H. Lee Moffitt Cancer Center

Speaker: **Paul B. Jacobsen, PhD,** H. Lee Moffitt Cancer Center
Topic: Addressing Quality of Life Issues in Survivors of Adult-Onset Cancers: The Role of Survivorship Care Plans

Speaker: **Debra L. Friedman, MD,** Vanderbilt-Ingram Cancer Center
Topic: Pediatric Cancer Survivorship: Issues Across the Life Span

Speaker: **Brian Sprague, MS,** University of Wisconsin
Topic: Health-related Behaviors Before and After a Diagnosis of Breast Carcinoma In-Situ

6:00 pm – 8:00 pm **Poster Session & Reception** (dinner on your own)
Ballroom E-H

7:45 pm **Presentation of "Best Poster" Awards**
Presentation of ASPO/Prevent Cancer Foundation Fellowship

This Fellowship is sponsored by the Prevent Cancer Foundation and the American Society of Preventive Oncology, and is funded by the Prevent Cancer Foundation.

ASPO 2009 – Tuesday, March 10, 2009

7:00 am – Noon **Registration**

7:15 – 8:45 am **Hot Topics Breakfast Sessions** (two sessions)

7:15 – 8:45 am ***I. Screening Special Interest Group Breakfast***
Genoa Chair: **Mary Beth Terry, PhD,** Columbia University

Topic: "Early Disclosure of Genetic Risk to Children in Hereditary Breast Cancer Families"

Abstract:: Professional guidelines recommend against testing minors for adult-onset genetic conditions. Yet, many BRCA1/2 mutation carriers share their genetic test results with their minor children. This session will review research evaluating parental disclosure of genetic risk to minors, psychosocial and behavioral responses to learning of hereditary risk during childhood and adolescence and the risks and benefits of providing genetic testing to minors for adult-onset hereditary cancer syndromes.

Presenters: **Angela Bradbury, MD**, Fox Chase Cancer Center
Linda Patrick-Miller, PhD, University of Medicine & Dentistry/NJ

7:15 – 8:45 am ***II. Diet & Nutrition Special Interest Group Breakfast***
Kalamata

Chair: **Stephen Hursting**, PhD, MPH, University of Texas - Austin

Topic: "The NCI Transdisciplinary Research on Energetics and Cancer (TREC) Initiative: Lessons Learned About Transdisciplinary Research"

Presenters: **Linda Nebeling, PhD,** National Cancer Institute
Li Li, MD, PhD, Case Western Reserve University
Cheryl Thompson, PhD, Case Western Reserve University

Tuesday, March 10, 2009

9:00 – 10:15 am
Ballroom A-D

Symposium 5: Translating Results from Molecular & Genetic Epidemiology into Prevention

Chair: **Peter Kanetsky, PhD, MPH,** University of Pennsylvania

Speaker: **Cielito Reyes-Gibby, DrPH,** UT M. D. Anderson Cancer Center
Topic: A Multigenic Approach to Pain Severity in Lung Cancer Patients: Cox 2 and Interleukin 2

Speaker: **Jessica Chubak, PhD,** Group Health Center for Health Studies
Topic: Colorectal Cancer Risk in Relation to Antidepressant Use

Speaker: **Stephen Gruber, MD, PhD, MPH,** University of Michigan
Topic: The Potential for Statins as Chemoprevention for Colorectal Cancer

Speaker: **Gad Rennert, MD, PhD,** CHS National Israeli Cancer Control Center
Topic: The APC I1307K Pre-mutation as an Example of moleculary-driven Cancer Prevention in the Jewish Population

10:15 – 10:30 BREAK

10:30 – 11:00am
Ballroom A-D

Joseph W. Cullen Memorial Award Lecture
(Awarded Posthumously)
Ronald Davis, MD
Director, Center for Health Promotion and Disease Prevention
Henry Ford Health System
Immediate Past President of the American Medical Association

The Joseph W. Cullen Award is given annually to memorialize the many contributions of Joe Cullen. Dr. Cullen was an active ASPO member and Program Coordinator for the NCI's Smoking Tobacco and Cancer Program.

Tuesday, March 10, 2009

11:00 – 12:15 am **Symposium 6: Vitamin D and Cancer Prevention**

Ballroom A-D

Chair: **Mary Reid, PhD,** Roswell Park Cancer Institute

Speaker: **Donald Trump, MD, FACP,** Roswell Park Cancer Institute
Topic: Vitamin D and Cancer Prevention: What, When, How... Why?

Speaker: **Jacques Rossouw, MD,** NHLBI,
National Institutes of Health
Topic: Vitamin D and Cancer Prevention: Lessons from the Women's Health Initiative Trial

Speaker: **Dana Rollison, PhD,** H. Lee Moffitt Cancer Center
Topic: Vitamin D Intake and Breast Cancer Risk Among Women Living in the Southwestern United States

11:00 – 12:15 am **Symposium Lunch:**

Kalamata

Integration of Prevention and Control Research with Other Cancer Center Programs: Perspectives from Two Cancer Center Directors

Chair: **James Marshall , PhD,** Roswell Park Cancer Institute

Speaker: **Donald L. Trump, MD, FACP,** President and CEO
Roswell Park Cancer Institute

Speaker: **William S. Dalton, MD, PhD,**
President/CEO and Center Director
H. Lee Moffitt Cancer Research Center

Conclusion of Meeting Program

Poster Directory

(T – denotes Trainee/student status)

Please find your name and poster number and put your poster on the corresponding number on the posterboards

No.	Name	Keywords
1	O'Neill	genetic testing, physicians, decisions
2	Lipkus	Decision making, Genomics, Oncotype DX, risk perceptions
3	McCurdy	HPV, Hispanic, disclosure, disparities, prevention
4	Kiviniemi	colorectal cancer screening; decision making
5	Glueck	sensitivity and specificity; inappropriate reference standard bias; ROCanalysis
6	Richards	
7	Bowles	hormone therapy suspension, breast cancer risk, randomized clin trial
8	Reed S	hormone therapy cessation, estrogen, estrogen/progestin
9	Sugg Skinner	mammography, breast cancer screening, tailored interventions
10	Collie-Akers	mammography, screening, facilities
11	Lian, Min	spatial accessibility, socioeconomic deprivation, mammography screening
12-T	Asvat	Ovarian Cancer
13	Hudson	cancer screening, cancer survivors, chart audit, primary care
14	King	preimplantation genetic diagnosis, BRCA1/2, Hereditary Brst & Ovar Ca
15	Palesh	
16	Pollak	advanced cancer, communication, emotion
17	Dowling	survivors, burden of illness, quality of life, childhood cancer
18	Larson	
19	Adams	Cancer survivor, breast cancer, radiation, radiotherapy
20	Gwede	familal risk, first-degree relatives, colorectal cancer, physican discussion
21	Avis	quality of life, br ca, aging, psychological morbidity, physical functioning
22-T	Peppone	exercise, bone health, osteoporosis, tai chi chuan
23-T	Ying Liu	risk perception, racial difference, breast cancer
24	Paxton	cancer, neoplasm, physical activity, quality of life, survivor
25	Jean-Pierre	chemobrain, cancer-related memory problems, paxil
26	Alberg	survivorship, cancer, physical activity, quality of life, fitness
27	Alberg	skin cancer, family history, overall cancer risk, epidemiology cohort studies
28-T	Darling	Tai Chi Chuan, Breast Cancer Survivor, Health-Related & Global QOL
29	Colbert	
30-T	Janelsins	obesity, Tai Chi Chuan, cytokine, insulin, psychosocial support therapy
31	Coups	
32	Hartline	participants, communication, intervention
33	Leventhal	BRCA 1/2 Analysis, Risk Assessment, Genetic Counseling
34	Graves	SNPs, genetic testing interest, breast cancer risk
35-T	Zawistowski	Familial Cancer Registry, retention rates
36	Pal, Tuya	African American Breast Cancer Recruitment
37	Ferrante	
38	Sheinfeld Gorin	HPV vaccine, health disparities, cervical cancer prevention
39	Worthington	
40	Katz	cervical cancer, human papillomavirus, Appalachia
41	Wells	cervical cancer, screening, depression
42	Robins Sadler	Disparities, Deaf community

43	West	
44	Coulbertson	cervical ca, HPV, Disparities, Outreach, Education, Toolbox, Underserved
45	MacKinnon	Spatial analysis, Esophageal ca, SES, area-based measures, SaTScan
46	Byrne	cancer screening, smoking, health behaviors, BRFSS
47-T	Davila	
48-T	Kneuper	suitability, health literacy, pt education
49	Vadaparampil	
50	Wilkinson	
51-T	Purnell	
52	Ortiz	cancer screening, women, cervical cancer, Hispanics, Puerto Ricans
53	Leone	Colorectal Cancer Screening, Obesity, Race, Women, Disparities
54	Tortolero Luna	breast cancer, cancer screening, Hispanics, Puerto Ricans
55	Diaz	language barriers; colorectal cancer screening; Hispanic/Latino
56	Rauscher	mammography, image quality
57	Howerton	recruitment, African Americans, older adults, cancer screening
58	Kapp	
59	Trentham-Dietz	health literacy, satisfaction with care, quality of life
60	Schootman	
61	Quinn	Hispanics, Genetic Counseling & Testing, Health Education
62-T	Oh	eczema cancer filaggrin
63-T	Phillips	colon cancer, candidate gene, PTEN
64-T	Zhao, Hui	BPDE-induced DNA adducts,base-excision repair (BER) genes
65-T	Thompson	IL22, SNP association, immunity, colon cancer
66	Wang, Yi	
67	Siegel	Oxidantive damage, breast cancer, HMdU, Autoantibodies, biomarkers
68	Newcomb	breast cancer, first birth, epidemiology, histology
69-T	Bittoni	Obesity, diet, endometrial cancer risk factors
70-T	Chang, Shen-Chih	lone-carbon metabolism, homocyeteine, MTHFR, MTR, MTRR, methylation
71	Bradshaw	
72	Lashinger	Cancer Prevention, Dietary Energy Modulation, Obesity, Calorie Restriction
73	Cerhan	antioxidants; lymphoma
74	Cole Johnson	behavioral intervention trial, fruits and vegetables
75-T	DU, Yan	Myelodysplastic syndromes, Risk Factors, Etiological Model
76-T	Arnold	pancreatic cancer, disparity, smoking, obesity
77	Park, Sungshim	BMI change, UADT cancer
78-T	Iannacone	
79	Parker	renal cell carcioma, vitamin D, case control
80	Parker	renal cell carcinoma, vitamin D receptor

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On Physician Recommendation for BRCA1/2 Genetic Testing for Adolescents Suzanne C. O'Neill1, Beth N. Peshkin1, George Luta1, Anisha Abraham2, Leslie R. Walker3, Kenneth P. Tercyak1,2 1Lombardi Comprehensive Cancer Center, Georgetown University Medical Center, Washington DC 2Department of Pediatrics, Georgetown University Medical Center, Washington DC 3Children's Hospital and Regional Medical Center, Seattle, WA Clinical practice guidelines discourage pediatric genetic testing for BRCA1/2 mutations due to a lack of timely medical benefit and psychosocial risk. Yet, some high-risk families approach physicians about testing adolescents, and little is known about physicians' preparation to respond to such requests. We assessed recommendations for testing to a composite patient (healthy 13 year-old female, mother is a BRCA mutation carrier) among 161 adolescent and family physicians attending a national medical conference. Preparedness was measured with a multidimensional scale (α=.76; min=4, max=20) that spanned informed consent, genetic counseling, and insurance coverage. Physicians expressed moderate preparedness to recommend testing (M=13,SD=4); 31% would recommend patient testing "unconditionally." At the bivariate level, preparedness was positively related to physicians' clinical practice volume (r=.18, p<.05), and frequency of ordering other pediatric genetic tests (r=.24,p<.01). In multivariate regression modeling, volume (B=2.21,p<.05) and test frequency (B=2.95,p<.01) were significantly related to preparedness, accounting for 29% of model variance. Our results forecast that despite a decade of clinical practice guideline advice to the contrary, experienced physicians may be inclined to recommend BRCA1/2 genetic testing to their patients. When paired with emerging data on the relative safety and efficacy of breast cancer genetic testing for high-risk women, the advent of direct-to-consumer marketing and offers of cancer genetic tests via mailed DNA samples, preventive oncology may need to revisit the issue of predictive genetic testing of adolescents for adult-onset cancers. In the interim, efforts to better engage providers in the dialogue about risks/benefits of BRCA1/2 testing of minors are important.	Numeracy Influences Breast Cancer Patients Understanding of Adjuvant Treatments Lipkus, I.M, Marcom,P.K., Kimmick, G.G., Peters, E. The decision aid program, Adjuvant!, is used to help women with early stage breast cancer make decisions about systemic adjuvant therapy by providing numerical estimates of treatment efficacy. This is the first report describing how patients' objective numeracy skills, that is, facility with understanding and applying mathematical concepts, interacts with the estimates provided by Adjuvant! to affect treatment expectations and choices. Using questionnaires, 106 women with ER+, early stage breast cancer who had just discussed with their oncologist results of Adjuvant! were asked for their perceptions of treatment efficacy, treatment benefit, and confidence that they would personally benefit from treatment under four options: no further treatment, chemotherapy only, hormonal therapy only, and combined chemotherapy and hormonal therapy. The mean age was 55.1 (SD=11.2), 73% were Caucasian, and 77% had at least some college education. The mean numeracy score (Lipkus, Samsa, Rimer, 2001) out of 11 was 7.1 (SD=2.5, range 2 to 11). Relative to estimates provided by Adjuvant!, patients underestimated their 10 year cancer free survival across all four treatment scenarios. In general, as estimates of treatment efficacy from Adjuvant! increased, so did patients' perceptions of treatment efficacy, especially among the more numerate. More numerate patients perceived greater benefit to combined therapy with increasing efficacy scores from Adjuvant!. The same results did not apply to confidence ratings. Patients who were more numerate were significantly more likely to know that combined therapy offered them the statistically best chance for cancer free survival (OR=1.29, 95% CI 1.08, 1.54, p<.005); only 66% of patients knew that combined therapy offered them the statistically best chance for cancer free survival. Patients who understood that combined therapy offered the statistical best chance for cancer free survival were more likely to choose this treatment option than patients who did not know this. In sum, patient numeracy skills are critical to their usage of the results from Adjuvant! to inform treatment choice.

3	4
Hispanic patients' responses to learning their HPV status McCurdy, S., Fernández, M., Avery, S., LaRue, D., Lopez, A., Tyson, S., Useche, B., Sanderson, M. Study purpose: To examine Hispanic women's responses to learning they have high risk HPV and issues related to disclosing their status. Methods: We conducted in-depth face to face interviews with 44 patients who had received care in one of three clinics in a city on the Texas-Mexico border between 2003 and 2004. Results: Only 18 women understood they were HPV+ and that HPV was an STI. Generational differences marked women's concerns about HPV. While all women expressed surprise and fear, single unattached women under 28 were more concerned about money, day to day problems, the possibility of cancer and their fertility. Women 28 years and older, who already had between two and six children and were in longer term relationships, feared disclosure to their partners would incur accusations of infidelity and/or abandonment. Conclusion: Interventions for HPV+ Hispanic patients in poor communities must be designed to respond to age specific and socioeconomic concerns. Young women need interventions to help get them into treatment without their parent's knowledge or financial assistance. Interventions for women in their thirties and forties should address issues related to disclosure and stigma.	Theory-Based Examinations of Decision-Making about Colorectal Cancer Screening: Have We Adequately Examined Influences on Screening Decisions? Kiviniemi, M.T., Bennett, A.L., Zaiter, M. Background/Purpose. Appropriate screening could massively decrease colorectal cancer morbidity and mortality, but compliance with screening recommendations is significantly lower than desired. Screening is ultimately an individually regulated behavior, so understanding factors influencing screening decisions is critically important. This systematic literature review examines whether constructs from health decision-making models have been adequately addressed in studies of colorectal cancer screening behavior. Method. A comprehensive literature search of MEDLINE and PSYCINFO used search terms with all possible pairings of words indicating colorectal cancer screening and words indicating decision-making constructs from the health belief model, theory of planned behavior, and transtheoretical model. Inclusion criteria were: a measure of screening behavior or intentions, a measure of at least one decision-making construct, and at least one statistical test of a decision making – behavior relation. 78 articles met criteria for review. Results: The coverage of decision-making constructs varied widely. Benefits and barriers were included in 44 and 48 studies respectively; by contrast, only 13 studies included perceived severity of colorectal cancer, 12 included self-efficacy/perceived behavioral control, and only 9 included social norms. Moreover, very few studies fully tested any given theoretical model; only 6 studies assessed all constructs in the health belief model and only 1 fully assessed the theory of planned behavior. Discussion: The results show multiple gaps in our understanding of the role of individual decision-making factors in screening behavior. The relative lack of attention to many constructs and the lack of tests of complete theoretical models as a whole suggests our understanding of factors influencing screening could be substantially improved. Work in other domains shows that these understudied constructs can successfully be targeted in interventions, so these gaps in understanding may hamper efforts to develop effective screening interventions.

5	6
Bias in trials comparing paired continuous tests can cause researchers to choose the wrong screening modality Deborah Glueck, Molly Lamb, Colin O'Donnell, Brandy Ringham, John Brinton, Keith Muller, John Lewin, Todd Alonzo, Etta Pisano We describe the bias that may occur in clinical trials that compare the diagnostic accuracy of paired screening tests for cancer. To compare the diagnostic accuracy of two screening tests, one approach is to test the difference between the areas under the receiver operating (ROC) curves. After study participants are screened with both screening tests, the disease status is determined as accurately as possible, either by an invasive secondary test, or by a less invasive, but less sensitive approach. For most participants, disease status is approximated through the less sensitive approach. The invasive test is limited to the fraction of the participants whose results on a screening test exceed a threshold of suspicion, or who develop signs and symptoms of the disease after the initial screening tests. The limitations of this design lead to a bias we call paired screening trial bias. This bias reflects the synergistic effects of inappropriate reference standard bias, differential verification bias, and partial verification bias. The lack of a gold reference standard leads to inappropriate reference standard bias. When different tests are used to ascertain disease status, it creates differential verification bias. When only suspicious screening test scores trigger a sensitive and specific secondary test, the result is a form of partial verification bias. We fix the prevalence of disease, and the chance a diseased subject manifests signs and symptoms. We derive the formulas for true sensitivity and specificity, and those for the sensitivity and specificity observed by the study investigator. The observed area under the ROC curves may be quite different from the true area under the ROC curves. The direction of the possible bias is a strong inflation in sensitivity, paired with a concomitant slight deflation of specificity. In paired trials of screening tests, when area under the ROC curve is used as the metric, bias may lead researchers to make the wrong decision as to which screening test is better.	Lean Mass and PSA levels in NHANES 2001-2004 C. Richards, A. Neugut, A. Rundle Background: Past studies indicate that body mass index (BMI) is inversely associated with PSA levels. It has been suggested that excess adipose tissue, particularly in the abdomen, causes hormonal disturbances that result in lower PSA levels. However, we previously showed in a clinical population that PSA was inversely associated with both lean mass and fat mass, and was positively associated with an abdominal distribution of body fat. Here we seek to replicate these findings in a nationally representative population. Methods: We analyzed data collected from the National Health and Nutrition Examination Survey (NHANES) between the years 2001 to 2004, including waist circumference and body mass index (BMI) data on 2,107 men and body composition data measured by Bioelectrical Impedance Analysis on 596 men. We conducted cross-sectional multivariable linear regression analyses on both populations to predict PSA levels. SAS Proc SURVEY methods were used to account for the complex survey design and weighting methods used in NHANES. Results: After control for age and race, a 5 pound difference in lean mass was associated with a -5.31% ($p=0.01$) difference in PSA, while a 5 pound difference in fat mass was not (2.62%, $P=0.33$). Waist circumference was significantly associated with PSA levels ($p= <0.01$), with a 1 cm increase in waist circumference being associated with a 0.34% decrease in PSA. However, waist circumference controlling for BMI, a measure of abdominal fat distribution, was not associated with PSA levels (-0.14%, $P=0.70$). Conclusion: These analyses confirm our prior work and provide further evidence that the hormonal effects of abdominal adipose tissue do not explain the inverse association between BMI and PSA levels. We suggest instead that the greater blood volume associated with both higher lean and fat mass effectively dilute PSA levels, yielding lower test scores.

7	8
Tolerance for short-term hormone therapy suspension related to breast cancer risk factors among postmenopausal women Bowles, E; Anderson, M; Reed, S; Newton, K; Fitzgibbons, E; Seger, D; Buist, D Purpose: Hormone therapy (HT) increases breast cancer risk, yet some women are reluctant to stop taking HT. We evaluated the relation between breast cancer risk factors and tolerance for short-term HT suspension within a randomized clinical trial. Methods: As part of the Radiologic Evaluation And breast Density (READ) study, we randomized 881 postmenopausal women aged 44-81 with a prior screening (index) mammogram to suspend HT for one (N=445) or two (N=436) months before their next screening (study) mammogram. We collected risk factors at women's index mammograms and measured breast density using Cumulus. At their study mammogram, we asked women to indicate tolerance for stopping HT on a scale from 1 (extremely difficult) to 7 (very easy). Using linear regression, we evaluated the effects of breast cancer risk factors on tolerance score for stopping HT. We stratified models by type of HT use (unopposed estrogen, ET, or estrogen plus progestin, EPT), and adjusted for age, body mass index (BMI), and randomization group. Results: Among ET users, 21.0% reported suspending ET as very easy and 9.5% as extremely difficult (median tolerance=4). EPT users had slightly higher tolerance; 24.0% reported suspending as very easy and 6.2% as extremely difficult (median=5). Among ET users, women had statistically significantly higher tolerance if they were over age 65 or had BMI >30. Few characteristics were related to tolerance among EPT users. Mammographic breast density, family history of breast cancer, and Gail model lifetime risk score were not related to tolerance among ET or EPT users. Conclusion: Over one-fifth of women reported stopping HT was very easy. Aside from age and BMI, tolerance does not appear to be related to breast cancer risk factors. These results may suggest that personal breast cancer risk (measured by Gail score, family history, or breast density) does not influence women to stop using HT.	Willingness to Consider Short-term (1-2 months) Hormone Therapy Cessation Before Mammography to Improve Screening Performance Reed, S; Buist, D; Anderson, M; Bowles, E; Newton, K Purpose: Some health care providers recommend hormone therapy (HT) discontinuation before mammography to improve performance. It is unknown whether women would agree to stop HT before a mammogram and whether there are subgroups of women that can be characterized as willing to do so. Methods: We performed the Radiological Evaluation And breast Density (READ) study, a randomized controlled trial, at an integrated health plan in Washington State (Group Health) between 2004 and 2007. Women aged 45-80 who used HT at their most recent screening (index) mammogram, were due for a screening (study) mammogram, and were still using HT, were invited to participate. Randomization groups were: 1) no, 2) one-month, or 3) two-month cessation. Women's willingness to participate was evaluated by age, race, ethnicity, education, hysterectomy, HT type (estrogen, ET; or estrogen/progestin, EPT), duration of HT use, body mass index (BMI), breast cancer risk, and breast density. Results: 5861 women were invited to participate; 2999 (72.1%) refused; unwillingness to stop HT was most often cited as the reason for non-participation (N=1751; 58.4% of refusers). An additional 169 women agreed to participate, but withdrew before data collection. Compared to women who participated, nonparticipants (N= 3168; 2999+169) were older, and were more likely to have less education, longer duration of HT use, and lower BMI (all $p<0.05$). Among EPT users, women who were willing to attempt cessation were more likely to have a first degree relative with a history of breast cancer than those not willing to attempt cessation (18.4% versus 14.5%, $p<0.05$). Conclusions: Most women were unwilling to stop HT, even for a short period when the intent was to improve mammographic accuracy, and even when they were informed they could restart at any time during the 2-month study. Some factors predicted willingness to stop HT; the magnitude of the differences may not be clinically meaningful.

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Exposure and reaction to tailored mammography interventions via telephone v. DVD. Skinner C, Buchanan A, Champion V, Monahan P, Bourff S, Rawl S, Springston J. Purpose: We developed a novel tailored interactive DVD to promote mammography and, in a randomized trial, compared it with more commonly used tailored telephone counseling. Methods: Members of an HMO (n=398) and a large insurance plan (n=535) whose last mammograms were >15 months prior to baseline received mailed study notification and, if they did not call to opt out, were recruited by phone, received DVD or phone intervention, and completed a follow-up phone survey 1 month post baseline. Both interventions delivered content tailored to responses to questions (verbally for phone or via DVD remote) about breast cancer risk and mammography-related perceptions. We kept content as similar as possible to test impact of media format rather than message content. We report two process measures that could moderate intervention outcomes: exposure (amount content completed) and reactions (opinions, satisfaction). The phone group's exposure was assessed via study database indicating how much content was delivered. DVD exposure was measured via self-report. For each, exposure was rated as all, some, or none. Reactions were measured primarily by an 18-item Likert-type scale (a=0.89) assessing, for example, understanding of information, emotional reactions, perceived importance and interest, satisfaction with time to view DVD/complete phone call, and whether content was tailored to the recipient and sufficient to make a mammography decision. Results: Exposure was significantly higher in the phone group (p<.05); 96% received all content; <1% received some. In contrast, 83% of DVD recipients reported viewing all content; 9% reported viewing some. Responses on the 18-item scale showed more favorable (p<.05) reactions among DVD than phone group and the DVD scored significantly better (p<.01) in perceptions of having the "right amount" of information. Conclusions: Exposure to intervention content was higher for the phone counseling group, indicating that, when reached, completion is higher by phone. However, of those exposed (a large majority of both groups), overall reactions were more favorable among DVD recipients.	Assessment of Characteristics of Capacity & Geographic Distribution of Breast Cancer Screening Facilities V. Collie-Akers, C. Warrick, L. Zhu, M. Granado The purpose of this study is to characterize the capacity of mammography facilities in a largely urban region of Texas & determine how facilities were geographically distributed. To underst& characteristics of screening capacity, a survey was distributed to all mammography facilities in the Texas Public Health Region 6/5 South which includes 16 counties & the cities of Houston & Galveston. A 24-item questionnaire was developed to assess the capacity. It included questions in six domains: type of facility, scheduling capacity, staff capacity, mechanical capacity, cost & payment methods, & provision of patient reminders. Surveys were distributed to 138 mammography facilities identified from the FDA database of certified facilities. The response rate was 38% (N=52). Using a GIS mapping program, the distribution of facilities were mapped across the study area. The preliminary results of this study indicate that most of the facilities were either hospital imaging centers (43.4%) or outpatient imaging centers (30.2%). Half of the facilities reported having hours limited to between typical business hours. Only six facilities were open both before & after typical business hours. About 68% of the facilities indicated the typical wait was one week or less. The number of radiology technologists varied widely from one or two (26.4%) to greater than 20 (11.3%). Over half of the facilities who responded had one only machine (54.7%). All of the respondents indicated that multiple payment methods were accepted at their facility, & 22% accepted all of the payment methods listed. Almost 74% of the survey respondents reported their facility used mailings or telephone calls to remind patients of their appointments. Conclusions: The findings of this study reveal substantial variability in the capacity of facilities to serve women seeking mammograms. Although factors such as accepting a variety of payment methods & sending out reminders likely enhance mammography utilization, several factors, such as limited staffing, few machines, & limited hours of service likely limit accessibility of mammography services.

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Spatial Accessibility to Mammography Facilities, Area Socioeconomic Deprivation and Breast Cancer Screening. Lian M, Schootman M and Jeffe DB. Department of Medicine, Washington University School of Medicine, St. Louis, MO. Purpose: To explore the relationship between spatial accessibility to non-mobile mammography facilities and each of area socioeconomic deprivation and mammography screening in the St. Louis area. Methods: A two-step floating catchment area (2SFCA) method with varied travel time cutoffs was used to assess the spatial accessibility to 40 non-mobile mammography facilities in the St. Louis metropolitan area. Exploratory principal components factor analysis of 21 variables from U.S. Census 2000 was used for data reduction to construct a 10-item (α=0.95) census-tract-level socioeconomic index. The area spatial accessibility and socioeconomic index were linked to reported mammography use among 985 women age 40+ from a random-digit dialed survey conducted in St. Louis City from 2004 through 2006. An intrinsic conditional autoregressive model was fitted to examine the relationships between spatial accessibility to mammography facility and area socioeconomic condition and mammography screening. All analyses were performed using a Geographic Information System and SAS. Results: Areas with higher deprivation had lower spatial accessibility to non-mobile mammography facilities (Spearman's rho ranged from -0.28 to -0.59, P<0.0001). No association was found between spatial accessibility and mammography screening in unadjusted analysis (odds ratio [OR] ranged from 0.87 to 1.44, each P>0.05) and after adjusting for 15 individual-level factors (OR ranged from 0.75 to 1.43, each P>0.05). Conclusions: Women who lived in more socioeconomically deprived areas had lower spatial accessibility to non-mobile mammography facilities. However, women who had lower spatial access to non-mobile mammography facilities were equally likely to have mammograms.	Women's Opinions About and Familiarity with Ovarian Cancer (OC) Symptoms Consensus Statement Recommendations Y. Asvat, H. McGinty, A. Gallagher, M. Andrykowski, P. Jacobsen PURPOSE: In 2007 the American Cancer Society, Gynecologic Cancer Foundation, & Society of Gynecological Oncologists released a consensus statement outlining common symptoms of OC (e.g., pelvic/abdominal pain, bloating) & recommending physician evaluation if symptoms persist for several weeks. This exploratory study assessed opinions about & familiarity with this statement among women in FL and KY. METHODS: Survey respondents were 40 community dwelling women (mean age=50, SD=7.7) with no history of cancer living in FL and KY. Most were Caucasian (92.5%), married (75%), completed some college (70%) & had a household income >$40,000 (69.2%). RESULTS: A majority (77.5%) agreed that the statement recommendations would lead to earlier diagnosis & improved survival. Moreover, 50% disagreed that, despite these recommendations, OC would continue to be detected too late to make a difference. Regarding symptom awareness, most agreed that the statement would cause doctors to take symptom complaints more seriously (77.5%) & cause women to pay more attention to these symptoms (90%). In terms of women's responses to these symptoms, there was no consensus on whether the statement would cause false positives (47.5% disagree, 37.5% neither agree nor disagree, 15% agree) or undue worry or anxiety (40% disagree, 32.5% neither agree nor disagree, 27.5% agree). Only 42.5% of women were familiar with the statement prior to it being described in the study. Among these women, common sources of information about the statement were newspapers, magazines, & television (identified by >41%); less common sources were family, friends, physicians, internet & radio (identified by <23.5%). CONCLUSIONS: These preliminary findings suggest that, overall, women report positive opinions about the ability of the statement's recommendations to promote early detection & increase symptom awareness. Less than half the sample was familiar with the statement, however, suggesting more public education efforts are needed; print media & television may be the most effective information outlets.

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Breast, Colorectal and Prostate Cancer Screening for Adult Cancer Survivors and Non-Cancer Patients in Primary Care Hudson SV, Hahn K, Ohman-Strickland P, Cunningham R, Miller S, Crabtree BF BACKGROUND: Cancer survivors have cancer surveillance and preventive screening needs that require monitoring. Little is known regarding their patterns of care in community primary care practices. PURPOSE: Compare cancer screening experiences of cancer survivors and non-survivors in community primary care settings where most patient care occurs. METHOD: Secondary analyses were conducted of 742 baseline patient surveys and medical records for patients in 25 practices participating in a cancer screening intervention study. Descriptive statistics and generalized estimating equations were used to investigate associations between cancer survivor status and up to date cancer screening. RESULTS: Survivors of one or more types of cancer comprised 14% of the sample. The most common cancers were breast (28%), prostate (21%) and colorectal (12%). Patient reported screening rates for breast, colorectal and prostate cancers were high, 73% to 81% for cancer survivors compared to 56% to 69% for non-survivors. Cancer survivors were more likely than patients without cancer to be screened for colorectal cancer ($p<.0001$) even after removing colorectal cancer survivors from the analysis ($p=0.0081$). Male cancer survivors of any type were more likely to be screened for prostate cancer than patients without cancer ($p=.0011$). Breast cancer screening rates were similar regardless of survivor status. Data from the chart audits found similar trends; however, rates of screening were much lower for both groups, 43% to 56% for survivors compared to 35% to 49% for non-survivors. CONCLUSION: Though self-reported screening rates were high, practice documented screening rates should be improved especially for survivors with increased cancer risk. These data suggest that patients and providers may have different understandings of cancer screening or different mechanisms for documenting receipt for which interventions are necessary.	Preimplantation Genetic Diagnosis: Opinions of Women at Increased Risk for Hereditary Breast and Ovarian Cancer King L, Quinn GQ, Vadaparampil ST, Miree CA, Malo T, Friedman S. Purpose of study: This study sought to explore attitudes and opinions of preimplantation genetic diagnosis (PGD) among a population of women who have a personal or family history suggestive of Hereditary Breast Ovarian Cancer Syndrome (HBOC). Simple Statement of Methods: This study used a qualitative analysis of 446 comments from a quantitative online survey assessing high risk women's perception of PGD. The data was analyzed using a combination of hand coding methods, including placing each response in broad categories using the constant comparative method in which the research team identified key themes and went through several rounds of thematic validation. Summary of Results: More than half the respondents held negative attitudes and opinions about the use of PGD for HBOC both for themselves and others. Most women felt strongly that PGD should not be used to eliminate embryos. However, among the women who felt positive about the use of PGD, the majority said it became a new option for them to pursue parenthood, whereas previously they had opted to refrain from having a biological child due to fear of transmitting the mutation. Statement of Conclusions: The high percentage of respondents who had not heard of PGD for HBOC indicates a great need for PGD education to be developed with specific tailoring for the HBOC community. Further research is needed to determine preferences for information content and mode of delivery to women at high risk for HBOC. In addition, training materials are needed on how to instruct health care professionals to present this topic to women who do not know to ask about it.

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Depression, Fatigue and Diurnal Cortisol Rhythm among Cancer Patients, Caregivers and Older Adults Palesh, O., Giese-Davis, J., Mustian, K., O'Hara, R., Gallager-Thompson, D., Kraemer, H., Janelsins, M., Peppone, L., Purnell, J., Morrow, G., Spiegel, D. Objective: Cortisol regulation is associated with increased fatigue and depression among cancer patients, but it is unclear whether this dysfunction is associated with cancer, age or stress. This study compared diurnal cortisol rhythms, fatigue and depression between cancer patients and individuals without cancer. Participants: 274 subjects were selected post hoc from 3 large studies of women with metastatic breast cancer (N=92), Alzheimer caregivers (N=92) and older adults at risk for cognitive decline (N=90). Method: Depression and fatigue were assessed using the BDI and SF-36 Vitality Score, and salivary cortisol was assessed using an enzyme-linked immunoassay. Results: Greater fatigue (ß=-.20) and depression (ß =-20) predicted steeper Baseline Diurnal Log Cortisol Slope across all groups and; (p-values <.05). Greater fatigue predicted greater 2-Day Mean Log Waking Cortisol across all of the populations studied (ß =.16; p=.05). A significant interaction was seen between greater fatigue plus greater depression in breast cancer and caregivers (but not the elderly) with higher Waking Mean Log Cortisol levels (ß =.26 and ß =.22 respectively; p-values <.05). Greater depression predicted blunted Cortisol Rise (ß =-.25, p=.009) in all 3 groups. A significant interaction between fatigue and depression produced the lowest 2-day Mean Log Wake + 30 Rise in Cortisol (ß =-.18, p=.015). Discussion: Our exploratory analysis identified predictors for 3 patterns of cortisol, and they were not the same across our samples. These data suggest the fatigue and depression in the patients in these groups may have different etiologies, which might explain why similar approaches to the treatment of fatigue may be effective in one group but may fail in another. Aspects of cortisol that we choose to examine in a given population are critical for understanding particular symptoms. Populations that share the same symptoms (e.g., fatigue, stress) but that are etiologically different might have different cortisol rhythms.	Which patients with advanced cancer express negative emotions to their oncologists and how do oncologists respond? Kathryn I. Pollak, PhD, Robert M. Arnold, MD, Amy S. Jeffreys, MStat, Stewart C. Alexander, PhD, Maren K. Olsen, PhD, Amy P. Abernethy, MD, Keri L. Rodriguez, PhD, and James A. Tulsky, MD Purpose: Cancer patients disclose only half of their concerns to oncologists and often report their emotional needs are unmet. Disparities may exist in communication about negative emotion. We examined predictors of patients expressing negative emotion, oncologist empathic responses, and patient perceptions of physician empathy. Methods: We audio recorded 264 outpatient encounters between oncologists and cancer patients with advanced cancer at three sites. Three outcome variables were: (1) patient expressions of negative emotion, (2) oncologist empathic responses, and (3) patient perceptions of physician empathy. We examined whether patient gender, age, race, marital status, education, economic security, length of relationship with oncologist, coping, and social support were related to these three outcomes. Results: Only half (51%) of patients expressed a negative emotion. Oncologists rarely responded with empathy (29%). Patients viewed oncologists as empathic (M=4.4, SD=0.7 on 5-point scale where 5 is most empathic). Of all patient factors, only two were related to expressing negative emotion. Patients who knew their oncologist for more than a year (p=.0003) and had less social support (p=.054) were less likely to express negative emotions. Oncologist empathic responses did not differ based on any patient factors, except they were more empathic to patients with lower economic security. Similarly, patients from lower economic security viewed oncologists as more empathic (p=.06). Conclusions: Cancer patients, particularly those who have known the oncologist for longer and those who have less social support, expressed few negative emotions to oncologists. Oncologists, in general, did not respond empathically to patient negative emotion. However, it appears that they do not provide care differentially to patients, and when biases exist, they favor those who are less advantaged. This empathy was felt by patients who were less secure economically.

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Burden of Illness in Adult Survivors of Childhood Cancer: A Report from a Population-Based National Sample E. Dowling, A. Mariotto, KR. Yabroff Background: While the number of adult survivors of childhood cancer is increasing due to effective treatments and improved survival, the burden of illness among adult survivors is not well documented. The purpose of this study was to estimate the burden of illness in adult survivors of childhood cancer in a national, population-based sample. Methods: A total of 410 adult survivors of childhood cancer and 2,050 age- and gender-matched controls were identified from the National Health Interview Survey during 1997-2006. Multiple measures of burden, general health, and lost productivity were compared using two-sided tests of statistical significance for the two groups overall and by time since diagnosis. Results: Adult survivors of childhood cancer reported poorer outcomes across the majority of general health measures and productivity measures compared to matched controls. Survivors were more likely to report their health status as fair or poor (24.2% vs. 9.6%; $p<0.001$), were more likely to report needing assistance with ADLs or IADLs (4.6% vs. 1.3%; $p<0.005$), having any limitation in any way (10.1% vs. 3.0%; $p<0.001$), and spending more than 10 days in bed in the past 12 months (14.3% vs. 5.1%; $p<0.005$). Survivors were also more likely to report being unable to work due to health problems (16.0% vs. 5.0%; $p<0.001$); limited in the amount/kind of work due to health problems (25.2% vs. 8.7%; $p<0.001$); and mean loss work days in the past 12 months (35.7 days vs. 12.6 days; $p<0.001$). When stratifying cancer survivors by time since diagnosis, survivors had poorer health outcomes than matched controls across several measures with the greatest differences in the periods 0-4 years after diagnosis and greater than 20 years since diagnosis. Conclusions: Adult survivors of childhood cancers have poorer health outcomes and more limitations than similar individuals without a cancer diagnosis across multiple measures of burden of illness and lost productivity. Poorer outcomes were observed in survivors compared to similar individuals without cancer more than twenty years following their diagnosis.	Cancer Patients/Survivors and their Companion Animals: A Survey of Pet-Related Concerns and Anxieties during Chemotherapy Larson B, Looker S, Herrera D, Creagan E, Hayman S, Kaur J, and Jatoi A Purpose: To explore whether cancer patients/survivors receiving chemotherapy have concerns and anxieties about their ability to care for their companion animals during illness and, possibly after their demise. Methods: A questionnaire was developed and administered to patients/survivors receiving cancer chemotherapy 1) to probe into the benefits and detriments of having a companion animal and 2) to assess whether patients desire more information about resources to help them care for their pets. This was a single-institution study from a tertiary medical center, and the questionnaire was administered consecutively to all patients who were receiving outpatient therapy within a cancer chemotherapy unit. Results: Three hundred nine patients/survivors completed the questionnaire, and 170 (55%) identified themselves as having a companion animal. Most were women (60%); most had an incurable cancer (59%); the median age was 56 years (range: 19, 85); and most had a dog (72%) and/or a cat (51%). Many wrote-in comments on the positive aspects of having a pet, describing their companion animal as "very intuitive," "very sensitive to me," and "part of my healing process." Only 6% expressed concern about being around their pets during cancer therapy. However, 24% of pet owners "strongly agreed" or "agreed" with the statement "I worry about what would happen if I could not take care of my pet." Despite this, only 7% of pet owners desired more information about resources to help them care for their pets. Only seven of the pet owners surveyed lived alone and most of the pet owners (80%) already had family members who were helping them care for their pets. Conclusions: Most cancer patients/survivors conveyed only the positive aspects of pet ownership, and only a small minority desired further information on resources for pet care. Other healthcare providers at other medical centers should explore the needs and anxieties of their cancer patients/survivors who have pets.

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Breast Cancer Incidence 50 + Years After Low Dose Chest Radiotherapy and Its Implication for Childhood Cancer Survivors Adams MJ, Dozier AM, Shore RE, Constine LS, Winters P, Schwartz RG, Lipshultz SE, Pearson TA, Fisher SG Purpose: Our aim is to estimate the lifetime breast cancer (BC) risk in young children treated with recent lower dose (<25 Gy) mediastinal radiotherapy (mRT) protocols by evaluating the cumulative BC incidence in a cohort treated with low dose chest RT for a benign condition over 50 years ago. Methods: We reestablished a population-based, longitudinal cohort of subjects exposed to chest RT for an enlarged thymus during infancy from 1926 to 1957 and of their unexposed siblings. Previously followed between 1951 and 1987 for cancer incidence, we re-surveyed cohort members from 2004 to 2008. Self-reported BCs were confirmed by pathology report. We used the National Death Index to check vital status and cause of death for all non-respondents. Person-years at risk were calculated from birth because 95% of subjects were exposed by age 8 months; censoring occurred at date of BC diagnosis, death or last survey response. Results: BC risk factors were similar in the two groups. During the 53,948 person-years (p-yrs) of follow-up in the 1101 females exposed to thymic irradiation (median breast dose = 0.69 Gy), 93 BCs occurred, resulting in a cumulative incidence rate of 17.2 per 10,000 p-yrs. The 2356 unexposed females had 56 BCs after 106,542 p-yrs of follow-up, yielding a cumulative incidence rate of 5.26 per 10,000 p-yrs. The crude rate ratio for BC comparing exposed to non-exposed women is 3.28 (95thCI: 2.35-4.57), and the cumulative incidence curves continued to separate throughout the entire follow-up. Conclusion: While lower radiation doses have been shown to decrease BC risk, our results demonstrate that even at substantially lower doses than those used for children today (<25 Gy vs. 0.69 Gy), BC risk remains elevated. Although our study does not address therapeutic efficacy nor advocates for elimination of mRT, it does imply that increased BC risk will remain a lifelong concern in female survivors treated during childhood with reduced RT doses. These women should be considered at high risk for BC and cared for accordingly.	Healthcare provider discussion of familial risk with colorectal cancer patients. Gwede, CK; Thomas, KB; Tarver, WL; Quinn, GP; Yu D; Zhu, W; Jacobsen PB; Dessureault, S; Shibata, D. PURPOSE: Colorectal cancer (CRC) is preventable and detectable through a variety of screening modalities. This paper explores patient-reported healthcare provider discussion of familial risk (FR) to first-degree relatives (FDR), timing of discussion, and the message communicated. Our overarching assertion is that healthcare provider discussion of risk to family members may facilitate communication of risk between patients and their FDRs. METHODS: This report represents preliminary results of the first 26 participants of an ongoing pilot study. A cross-sectional telephone interview survey design was used with patients recruited through a cancer center registry. Interview questions specifically addressed patient- reported healthcare provider discussion of FR, timing of discussion, primary message communicated, and demographics. Descriptive statistics were used to assess trends. RESULTS: The median age of the subjects (N=26) was 66 years (range 44-88 years). The majority of participants were white, employed for wages, married, well educated, and had high incomes. Only 50% of patients reported their physicians discussed FR; 38% said their doctors did not discuss FR; and 12% did not remember if the discussion occurred. Among patients whose physician discussed FR, 69% said the discussion took place during the time of diagnosis before initiation of treatment. Virtually all the physician discussions centered on FDR's increased potential of developing CRC and importance of screening. Three patients (12%) also reported having a discussion about FR with other healthcare providers. Medical record review is underway to assess documentation of discussion of FR. CONCLUSION: Preliminary findings indicate that physician or other healthcare provider discussion of familial risk is lacking. If substantiated with a larger sample, the results suggest an important opportunity to develop healthcare provider-centered as well as patient-centered interventions to facilitate awareness and communication about FR.

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Age Associated Differences in Psychological Morbidity and Physical Functioning Following a Breast Cancer Diagnosis NE Avis, LD Case, M Naughton, K Van Zee, E Naftalis Purpose. To examine age-related changes in physical and mental health following a breast cancer diagnosis, with emphasis on understanding why younger women report greater psychological morbidity than older women. Methods. A longitudinal study of women aged >18 newly diagnosed with stage I, II, or III breast cancer. Women were recruited through hospital clinics and advertisements. Eligible women completed a baseline survey within 8 months of diagnosis and 6, 12, and 18 months later. Main outcomes were the Physical (PCS) and Mental Component Scores (MCS) of the SF-36 Health Survey. Predictors included tumor and treatment characteristics, comorbidities, sociodemographics, and psychosocial factors. Linear mixed effects models assessed the effect of various covariates on PCS and MCS across time. Results. 658 of 740 (89%) screened patients consented to study participation. Five women were subsequently determined ineligible. The final sample was composed of 653 women grouped by age:18-44, 45-54, 55-64, 65-74, and 75+. Consistent with other studies, the MCS showed significant age effects with older women (over age 55) having better MCS scores ($p<.0001$) and these differences were maintained over time. In hierarchical multivariable models, age was no longer significant when psychosocial variables were in the model. Less illness intrusiveness and escapist coping and more spirituality-meaning scores (all $p<.0001$) were the primary variables related to higher MCS. Use of an aromatase inhibitor was the only clinical variable significantly associated with higher MCS ($p=.007$). The PCS score showed a significant age by time interaction ($p <.0001$). PCS scores did not differ by age at baseline, but younger women improved over time while older women did not. Higher SES, smaller tumor size, tamoxifen use, fewer comorbidities and illness intrusiveness were all related to higher PCS. Conclusions. Illness intrusiveness is one of the primary factors explaining greater psychological morbidity among younger women. Physical functioning improves over time for younger women, but remains constant for older women.	THE EFFECT OF TAI CHI CHUAN ON BONE REMODELING AMONG BREAST CANCER SURVIVORS: A FEASIBILITY TRIAL L. Peppone1, K. Mustian1, R. Rosier1, K. Piazza2, D. Hicks1, T. Darling1, J. Purnell1, O. Palesh1, M. Janelsins1, G. Morrow1 1University of Rochester and 2Roswell Park Cancer Institute Background: Treatments for breast cancer accelerate bone loss among breast cancer survivors, leading to osteoporosis and an increase in fracture risk. Exercise slows the rate of bone loss and onset of osteoporosis among women. Tai Chi Chuan (TCC) has been shown to improve aerobic capacity and strength among breast cancer survivors, and may also be effective in promoting bone remodeling. Purpose: This pilot study compared the influence of a TCC exercise intervention to standard support therapy (ST; exercise control) on bone remodeling among breast cancer survivors. Methods: Randomly assigned breast cancer survivors (N=17; Median Age=53; <30 Months Post-Treatment) completed 12 weeks (3x/week; 60 min/session) of TCC or ST. Serum levels of N-telopeptides of type I collagen (NTx), a marker of bone resorption, and bone specific alkaline phosphatase (BAP), a marker of bone formation, were determined by ELISA at baseline and post intervention. Using validated methods, a bone remodeling index (BRI) was calculated from levels of bone resorption and formation. Results: ANCOVA analysis revealed that survivors performing TCC experienced a greater increase of bone remodeling (BRI: Pre=0.4/Post=2.0; Change=1.6) than survivors in ST (BRI: Pre=0.1/Post=0.3; Change=0.2) ($p=0.04$). Those in the TCC group experienced a greater increase in levels of bone formation (BAP μg/L: Pre=8.3/Post=10.2; Change= 1.9 μg/L (22.4%)) than those in ST group (BAP μg/L: Pre=7.6/Post=8.1; Change= 0.5 μg/L (6.3%)) ($p=0.27$). Survivors in the TCC group also experienced a larger decrease in bone resorption (NTx nm BCE: Pre=17.4/Post=11.1; Change=-6.3 nm BCE (-36.3%)) than women in the ST group (NTx nm BCE: Pre=20.9/Post=18.8; Change=-2.1 nm BCE (-10.3%)) ($p=0.14$). Conclusion: This pilot study suggests that TCC has positive effects on bone remodeling, through increased bone formation and decreased bone resorption. A larger, more definitive trial examining the influence of TCC on bone remodeling is warranted.

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Racial Differences in Accuracy of Perceived Risk of Recurrence among Patients with Early-Stage Breast Cancer Liu Y, Pérez M, Aft R, Schootman M, Gillanders W, Jeffe DB Purpose: To evaluate racial differences in accuracy of perceived risk of recurrence (PRR) among patients with early-stage breast cancer. Methods: Patients' PRR was measured 6 and 12 months after surgery. The 10-year risk of recurrence for ductal carcinoma in situ (DCIS) was estimated from the literature. The 10-year risk of recurrence for early-invasive breast cancer was a sum of risk estimates of three types of recurrence: local recurrence and contralateral breast cancer (both based on the literature) and distant recurrence calculated using Adjuvant! Online. The 'actual' risk estimates accounted for treatments received. We compared patients' PRR with their 'actual' risk, creating four risk-perception categories: Accurate, Underestimated, Overestimated, and Uncertain. Three multinomial logit marginal effects models with repeated measures were fitted separately using Accurate as the reference and controlled for age, social support, cancer stage, and surgery type. Analyses were stratified by education and a family history of breast cancer (FHBC) Results: Of 501 patients (90 African American, 411 white; mean age 58, range 40-89; 35% DCIS), 44% Underestimated, 21% Overestimated, and 18% were Uncertain about their actual risk 6 months after surgery; accuracy of PRR did not change significantly at 12 months. African American and white patients did not differ significantly by education or FHBC. African American patients with FHBC (OR=2.02, 95% CI=1.13, 3.60) and ≤high school education (OR=2.36; 95% CI=1.17, 4.79) more likely Underestimated their risk compared with white patients with FHBC and ≤high school, respectively. White patients with ≤high school education were more likely than African American patients to Overestimate their risk (OR=4.08; 95% CI=1.44, 11.54). Racial differences were not found in patients without FHBC or with >high school education. Conclusions: Whether racial differences in accuracy of PRR observed in patients with FHBC and ≤high school education are associated with subsequent disparities in adherence to recommended follow-up care requires further study.	Associations between Leisure-time Physical Activity and Health Related Quality of Life among Adolescent and Adult Survivors of Childhood Cancers. Paxton RJ,1 Jones LW,2 Rosoff PJ,2 Bonner M,2 Guill AB, Demark-Wahnefried W1 1University of Texas – M.D. Anderson Cancer Center, Houston TX 2Duke University Medical Center, Durham NC Background: Childhood cancer survivors are at increased risk for second malignancies, comorbid conditions and declines in quality of life. While previous studies have found that childhood cancer survivors are less physically active, little is known regarding associations between physical activity and health related quality of life (HRQOL) within this population. Methods: A total of 215 survivors of childhood lymphoma, leukemia and central nervous system (CNS) cancers completed mailed surveys that elicited information regarding leisure-time physical activity (LTPA), HRQOL and demographic factors. Associations between LTPA and HRQOL were explored initially via bivariate testing and ultimately using adjusted multivariable generalized linear models. Results: In the total sample, significant linear associations were observed between LTPA and overall HRQOL ($\beta = .18$, $p < .01$), as well as each of the subscales (β- and p-values ranged from .11 - .23 and $p < .05$ to $p < .0001$, respectively). Among adolescents, LTPA was significantly associated with overall HRQOL ($\beta = .26$), social function ($\beta = .24$), school function ($\beta = .32$), cancer worry ($\beta = .36$, $p < .01$) and body appearance ($\beta = .29$) (all p-values <.01). However, among adults, LTPA was only associated with physical function ($\beta = .28$, $p < .01$). Conclusions: Significant associations exist between LTPA and HRQOL; however the association appears stronger and observed across more domains in adolescent as compared to adult survivors of childhood cancer. Health promotion interventions aimed at improving HRQOL in childhood cancer survivors should consider intervening before adulthood to maximize the benefits associated the LTPA participation. This research was supported in part, by a cancer prevention fellowship supported by the National Cancer Institute grant R25ECA56452

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Effect of Paxil on Memory Problems in 781 Cancer Patients Receiving Chemotherapy: A URCC CCOP Study. Pascal Jean-Pierre, Ph.D1., Supriya Mohile, MD, MS1, Gary R. Morrow, Ph.D., M.S1., Joseph A. Roscoe, Ph.D1., Nanette Nier, RN2, Devinder Singh, MD3, Andrew Jacobs, MD4 1University of Rochester Medical Center, URCC CCOP, 2North Shore CCOP, Lake Success, NY, 3Western Regional CCOP, Phoenix, AZ, 4Virginia Mason CCOP, Seattle, WA BACKGROUND: Cancer and its treatment affect important areas of cognitive function. 17 to 75% of cancer patients reported cognitive dysfunction during and after treatment. The present study examines the effect of Paxil on cancer-related memory problems (CRMP). METHODS: The sample included 574 female and 207 male patients between 22 and 87 years. Memory problems were assessed using a Self-Reported Memory Problems (SRMP) measure based on the Fatigue Symptom Checklist (FSCL). Reliability assessment and principal components analysis (PCA) were conducted on the SRMP. Changes in mean scores on the SRMP and differences between the Paxil and placebo groups across time were assessed using a repeated-measure-ANOVA (r-ANOVA) and t-tests. RESULTS: Reliability assessment showed a Cronbach of .90. The PCA revealed a one-component structure that explained 72% of the variance. The r-ANOVA revealed a significant difference between scores on the SRMP at baseline (after first chemotherapy cycle, and before Paxil) and follow-up (after four cycles of chemotherapy, after Paxil) (Wilks' Lambda = .99, F (1, 583) = 5.52, p = 0.02). T-tests also showed a significant effect of Paxil on CRMP ($p < 0.05$). CONCLUSION: CRMP is a serious cancer-related side effect. Paxil seems to alleviate CRMP. Future studies should examine the usefulness of psychotropic agents for CRMP, and the benefit of combined behavioral and pharmacologic interventions. Supported by NCI Grants U10CA37420, R25CA102618, and 3U01CA116924-04S1.	Quality of life outcomes of participation in a physical activity intervention for cancer survivors Carter, C; Cartmell, K; Onicescu, G; Tomsic, J; Dunmeyer, E; Taylor, C; Fox, T; Alberg, A Purpose of Study: A non-randomized trial was conducted to determine how participation in physical activity interventions (dragon boat paddling team versus a group walking program) impacted on physical and psychological outcomes. We report preliminary findings comparing the pre-post intervention differences on quality-of-life (QoL) using the SF-36. Participants and Methods: 82/92 (89.1%) of participants who enrolled in the study completed an eight-week paddling (n=46) or walking (n=36) intervention. The 36-item SF-36 Scale was administered both pre- and post-intervention. We examined pre-post test differences in median scores for the eight subscales of the SF-36. Results: In the total study population, participation in a physical activity intervention was associated with statistically significant post-intervention improvements in QoL scores for three of the eight SF-36 QoL sub-scales, including emotional wellbeing (p<.001), social functioning (p=.019) and pain (p=.020). In the paddling group, participation was associated with improvements in energy/fatigue (p=.029), emotional wellbeing (p=.020), social functioning (p=.024), and pain (p=.024). In the walking group, participation was associated with improvements in the emotional wellbeing subscale (p=.011). No pre-post between group differences were observed. Conclusions: Participation in a physical activity program, regardless of the type of program, statistically significantly increased quality of life in three of the eight sub-scales. These preliminary findings indicate that participating in a short-term physical activity program can lead to significant improvements in quality of life following a cancer diagnosis. While no between group differences were observed, paddlers demonstrated pre-post improvements in a greater number of QoL sub-scales than did walkers. Supported by NCI R03CA128482.

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The potential role of family history of cancer as a determinant of the elevated risk of other cancers among those with a personal history of nonmelanoma skin cancer

Alberg AJ, Ruczinski I, Jorgensen T, Shugart YY, Clipp S, Hoffman-Bolton J, Burke A, Strickland P, Helzlsouer KJ, Lieigois N, Alani R. Medical University of South Carolina, Johns Hopkins Medical Institutions, Mercy Medical Center.

For unknown reasons, a personal history of nonmelanoma skin cancer (NMSC) is a risk factor for developing other cancers. We tested the hypothesis that the NMSC-associated cancer risk may reflect an inherited predisposition to cancer by assessing the potential influence of a first-degree family history of cancer on this association. This is a prospective cohort study using the CLUE II Cohort established in 1989 in Washington County, MD. First-degree family history of cancer was assessed in a follow-up survey in 1996. A total of 11,228 participants were included in the analytic cohort with follow-up through 2005. Based on outcome status at the end of follow-up, the prevalence of a positive first degree family history of cancer among those who remained cancer-free was 57%, whereas a positive family history was significantly ($p<0.05$) higher among those with a personal history of NMSC only (67%), cancers other than NMSC only (67 %), and both NMSC plus another cancer (70%). Hazards ratios for the risk of cancers other than NMSC, using the group with no NMSC and negative family history as the referent were 1.3 (1.1-1.4) for positive family history only, 2.4 (1.7-3.4) for NMSC only, and 2.5 (2.0, 3.2) for both NMSC plus positive family history (p-for-interaction not significant). These results were adjusted for age, sex, education, cigarette smoking, and BMI. The distribution of a positive family history of cancer was consistent across groups with a personal history of NMSC, other cancers, or both. Both NMSC and positive family history were strong, but independent, predictors of risk of developing non-NMSC malignancies. These results suggest that if the elevated cancer risk among those with a personal history of NMSC is a marker of an inherited predisposition to cancer, it will require further studies that include genotyping relevant candidate genes.

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Tai Chi Chuan Improves Health-Related and Global Quality of Life among Breast Cancer Survivors

Tom V. Darling, Ph.D., Karen M. Mustian, Ph.D., Charles E. Heckler, Ph.D., Luke J. Peppone, Ph.D., Michelle C. Janelsins, Ph.D., Oxana G. Palesh, Ph.D., Gary R. Morrow, Ph.D. University of Rochester Cancer Center

Women diagnosed with breast cancer can expect to survive for many years due to advances in treatment. Quality of life (QOL), however, may be compromised by acute, chronic and late side effects from cancer treatments. Tai Chi Chuan (TCC), a martial arts-based exercise with an energy expenditure equivalent to walking, has been shown to improve functional capacity and enhance disease-specific QOL (e.g., Functional Assessment of Chronic Illness Therapy-Breast Cancer; FACIT-B), but the effect of TCC on health-related and global QOL among breast cancer survivors is not clear. This pilot study compared the effects of 12 weeks (3, 60 min. sessions/week) of TCC with support therapy (ST) on health-related QOL (MOS Short-form General Health Survey; MOS-SF) and global QOL (Satisfaction With Life Scale; SWL) among 21 breast cancer survivors (mean age=51; range 33-78). Independent-sample t-tests using change scores (post-intervention minus baseline) revealed a statistical trend with TCC participants demonstrating better health-related QOL (MOS-SF, $p=0.081$) and global QOL (SWL; $p=0.105$) compared to the ST participants post-intervention. These findings suggest that TCC may be a particularly useful intervention for helping breast cancer survivors resume their normal lives after completing treatments by improving QOL beyond disease-specific domains; specifically, more general health-related and global QOL. Future research is needed to verify study findings using a larger sample size in a randomized, controlled clinical trial. Funded by NCI grant 1R25-CA102618 and Sally Schindel Cone Fund.

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Physical activity, social participation and health-related quality of life of older colorectal cancer survivors Colbert LH, Siegl EM, Koltyn KF, Trentham-Dietz A Purpose: To evaluate associations between usual participation in physical and social activities on overall physical and mental health of older, long-term colorectal cancer survivors. Methods: In 2006-2007, mailed surveys were sent to male and female colorectal cancer survivors, aged ≥65 years when diagnosed during 1995 - 2000, and identified through a state cancer registry. Information on physical activity, social participation, health-related quality of life, and relevant covariates was obtained and matched to registry data. Subjects were dichotomously classified as regularly participating in at least 1000 kcals/wk of physical activity or not, and as participating in regular social activities such as playing cards or games in groups, or not. Analysis of covariance was used to compare means on the physical (PCS) and mental (MCS) component summary scores from the SF-36 by level of physical activity or social participation in the final analytic sample of 832 cases. Results: Participants were 81.5 ± 5.8 yrs (mean ± SD) of age and 8.2 ± 1.7 yrs past their diagnosis when they responded to the survey. Participation in 1000+ kcals/wk of activity was reported by 73% of the population, and 83% reported any regular social participation. Those who were physically active had significantly higher MCS ($p=0.03$) and PCS ($p<0.001$) scores after adjustment for relevant covariates compared to those not physically active. Social participation, however, was related to higher scores on the MCS ($p=0.01$), but not the PCS ($p=0.33$). Conclusions: Results from this cross-sectional study indicate a significant association between physical activity and both mental and physical health of older cancer survivors, while regular social participation was only related to mental health benefits.	Tai Chi Chuan Alters Insulin and Related Molecules in Breast Cancer Survivors: A Randomized Pilot Study M. Janelsins, K. Mustian, J. Williams, C. Heckler, L. Peppone, T. Darling, O. Palesh, G. Morrow Research suggests that exercise reduces obesity and subsequently the risk of breast cancer recurrence among survivors. The mechanisms linking exercise, obesity and breast cancer recurrence are less clear. High levels of insulin and related molecules have been associated with obesity and increased risk of breast cancer recurrence, while exercise is linked with reduced insulin levels and better breast cancer prognosis. This randomized pilot study compared the effects of Tai Chi Chuan (TCC; an aerobic mode of exercise equivalent to walking) with psychosocial support therapy (PST) for 12 weeks (3, 60 min. sessions/wk.) on fat mass, fat-free mass, serum insulin, and associated molecules (insulin-like growth factor (IGF) 1, IGF binding proteins (BPs) 1 and 3) and interferon-γ in 21 breast cancer survivors (mean age=52; 2-30 months post-treatment). Fat mass and fat-free mass were obtained by bioelectrical impedance and serum was analyzed by ELISA for presence of insulin, IGF-1, IGFBP-1, IGFBP-3, and interferon-γ. All measurements were taken pre- and post-intervention. The TCC group had a greater increase in fat-free mass and a decrease in fat mass compared to the PST group. Levels of IGF-1 and IGFBP-3 showed a greater decrease in the TCC group compared to PST group, while IGFBP-1 showed a greater increase in the PST cohort. Interferon-γ decreased in the TCC group but increased in the PST group. Levels of serum insulin were stable in the TCC group compared to a marked increase in the PST group ($p<0.10$, ANCOVA analysis). Bivariate analyses revealed positive correlations between interferon-γ and both insulin ($p<0.05$) and IGF-1 ($p=0.05$). IGF-1 was also negatively correlated with IGFBP-1 ($p<0.05$). These pilot results suggest that TCC may contribute to maintenance of lean body mass and insulin levels, that stable insulin levels associated with reduced IGF-1 and IFN-γ may be involved in the mechanisms responsible for exercise-related reductions in obesity, and ultimately reduced recurrence, among breast cancer survivors. Funding:R25CA10618, Sally Schindel Cone Foundation.

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Healthcare Provider Advice to Quit Smoking among Cancer Survivors and Survivors' Use of Smoking Cessation Treatments Coups EJ, Dhingra LK, Heckman CJ, Manne SL This study examined the extent to which cancer survivors reported being asked and advised about smoking by healthcare providers, and their use of smoking cessation treatments during quit attempts. The participants were 1,825 cancer survivors (59.9% women, median age = 67, mean time since diagnosis = 11 years) drawn from the 2005 National Health Interview Survey, an annual in-person health survey of U.S. adults. In addition to items assessing demographics, medical factors, and healthcare access variables, participants answered questions about current and prior smoking, receipt of healthcare provider assessment and advice regarding smoking, and use of smoking cessation treatments. Almost all participants (95.7%) visited a healthcare provider in the past year, 41.0% of whom reported being asked about smoking. Of those not asked about smoking, 69.7% indicated that their healthcare provider knew their smoking status. Among current smokers (n = 310; 17.0%), 64.7% indicated a desire to quit smoking, and 72.2% reported being advised to quit by a provider in the past year. Factors associated with a higher rate of receiving advice to quit included smoking more cigarettes per day ($p = .011$), having more medical comorbidities ($p = .001$), high psychological distress ($p < .001$), more healthcare provider visits ($p = .050$), and lack of healthcare insurance ($p = .020$). Among current smokers who tried to quit in the last year (n = 130; 41.9%), 33.5% used pharmacotherapy cessation treatment, with 26.1% using the nicotine patch. Only 3.8% used any form of evidence-based behavioral treatment (e.g., telephone help line, smoking cessation clinic, individual counseling). However, 25.6% reported utilizing help or support from family or friends. The study results reveal considerable missed opportunities for healthcare providers to ask and advise cancer survivors about smoking. Although most smokers wanted to quit, and more than a third had tried to quit in the past year, utilization of smoking cessation treatments was low, suggesting that systematic efforts are needed to provide such treatments to cancer survivors.	Communicating the Early End of Intervention to Participants in a Large Ongoing Study: Hartline J, Cook E, Anderson K, Harris-Talley J, Weaver K. The Selenium and Vitamin E Cancer Prevention Trial (SELECT) stopped the study intervention due to lack of benefit. This abstract describes the process used to notify participants. SELECT is a prostate cancer prevention trial with over 35,000 participants at over 400 sites in the U.S., Canada and Puerto Rico. A letter of explanation to participants was created and reproduced centrally, placed in sealed stamped envelopes and because only sites have participant contact information, was shipped to each site for distribution. Sites were told to add a return address and an addressee label and mail quickly. Email was used to notify the Steering Committee and site investigators and key staff. Concurrently, the National Cancer Institute produced a press release and prepared the Cancer Information Service to respond to inquiries. Within 24 hours of the e-mail to sites, study leadership learned that a national news organization planned to broadcast this information to the public. This development required urgent contact with participants. Sites were asked to phone as many participants as possible before this broadcast. Talking points were developed for those contacts. All materials were made available to sites via the secure study website. Participant follow-up will continue to assess long-term effects of the intervention. The study leadership recommended that participants remain blinded to the intervention until the end of SELECT. Fact Sheets were created for participants and physicians about the rationale for staying blinded. Other available information includes the SELECT public website, Spanish and French translation and a participant newsletter. Sites report that the materials provided were helpful, and 59% of sites have mailed the letters. Participants are reassured to know they will be unblinded at the end of SELECT and will be unblinded earlier if they choose. It is possible to rapidly notify thousands of participants of important study changes. In two weeks most sites contacted their participants and many reached their participants before the national evening news broadcast.

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Predictors of Cancer Risk Assessment Accuracy in Newly Diagnosed Breast Cancer Patients

Leventhal, K., Peshkin, B., Kelly, S., Nusbaum R,, Kelleher, S., Vegella, P., Issacs, C., Willey, S., Cocilovo, C., Evangelista, R., Magnant, C., Valdimarsdottir, H., Schwartz, M., Graves, K. Georgetown University Lombardi Comprehensive Cancer Center, Washington, DC; Mount Sinai School of Medicine, Oncological Sciences, New York, NY

Among women newly diagnosed with breast cancer, genetic counseling and testing may provide additional information about their future risk of breast cancer. This study investigated perceptions of risk for new primary breast cancer and evaluated predictors of risk accuracy among female breast cancer patients within 6 weeks of diagnosis (N = 135). Participants were < age 50, or ≥ 50 with a family history of breast and/or ovarian cancer. Prior to genetic counseling, participants completed a baseline interview assessing demographics, personal and family cancer history, knowledge about breast cancer and genetic factors, distress, and perceived risk for new primary breast cancer. We calculated risk perception accuracy by comparing patients' subjective perceived risk to an objective risk of future breast cancer based on an established risk assessment model score (BRCAPRO), resulting in 3 categories of risk accuracy: underestimate, accurate, and overestimate. Subjective perceived risk was measured on a 5-item scale with scores ranging from 0-4. Risk of carrier probability (BRCAPRO) was used as a proxy for estimating cancer risk. At baseline, 37% had accurate views of their risk, while 47% overestimated their risk and 16% underestimated their risk. We evaluated predictors of accuracy using analysis of variance (ANOVAs). Variables significantly related to degree of risk accuracy were baseline knowledge ($F(132)=19.41$, $p=.0045$), Jewish ancestry ($F(132)=19.54$, $p<.0001$), and number of relatives with breast or ovarian cancer ($F(132)= 4.1$, $p=.0187$). Women with moderate, rather than high, levels of knowledge reported more accurate baseline risk assessment, while non-Jewish women and women with fewer affected relatives reported more accurate risk assessment than women of Jewish ancestry and women with more affected family members. These results suggest that higher baseline knowledge does not appear to translate into accurate risk perception among newly diagnosed breast cancer patients, reinforcing the idea that it is important to elicit and discuss women's risk perceptions during the course of genetic counseling. Further evaluation of risk accuracy before and after genetic counseling can help assess the effectiveness of genetic counseling.

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Interest in SNP Testing for Breast Cancer Risk in Low to Moderate Risk Women

Graves K, Tuong W, Peshkin B, Denis-Cooper L, Montalvo B, Boisvert M, Schwartz M

Single nucleotide polymorphisms (SNPs) are the most common type of genetic variations in the human genome. Whereas rare high-penetrance cancer susceptibility genes (e.g., BRCA1/2) convey large increases in cancer risk, cancer SNPs convey much smaller risks. We investigated interest in genetic testing for breast cancer SNPs among 106 women with a negative breast biopsy and >1 relatives with breast/ovarian cancer. We assessed demographics, cancer history, perceived risk, cancer worry, and genetic testing knowledge and attitudes. Through scenario-based items, we measured interest in and willingness to pay for testing related to hypothetical breast cancer SNPs. McNemar's test was used to examine differences in SNP testing interest across scenarios. We also created a composite SNP interest score and evaluated predictors of overall SNP testing interest with multiple linear regression. Most of the sample (66%) reported "definite" interest in testing for SNPs that increased relative risk. Fewer participants (46%) reported "definite" interest in SNPs that decreased risk. Interest differed based on level of risk, with greater interest for SNPs that conveyed greater risk (75% vs. 25% increased risk; $S=4.5$, $p<.03$). Most women (63%) did not understand the difference between relative and absolute risk. Regardless of risk level, interest in testing decreased as the test cost increased ($150 vs. free; $S=25.0$, $p<.001$). In the 25% increased risk scenario, interest varied with presentation of different behavioral risk modifiers (e.g., exercising to reduce risk decreased interest, $S= 9.9$; $p=.002$, while taking a vitamin to reduce risk did not impact interest, $S=0.6$, $p=.44$). In the regression model, interest was predicted by greater breast cancer worry ($\beta=.30$, $p< .001$) and greater perceived benefits of genetic testing ($\beta=.32$, $p<.001$). Given the lack of clinical validity for SNPs, the increase in direct-to-consumer marketing of SNP tests, and overall interest in breast cancer SNPs in this population, educational materials should be developed to highlight the benefits, risks, and limitations of SNP testing.

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Correlates of retention in a Familial Cancer Registry Zawistowski G, Graves K, Isaacs C, Schwartz M Familial cancer registries serve as a useful resource for recruiting participants for medical, genetic, epidemiological, and behavioral research. Although factors contributing to enrollment into familial cancer registries have been evaluated, little is known about factors that predict retention in the registry and on-going involvement with research endeavors. We evaluated rates of retention and predictors of on-going research participation in a sample of 1,697 individuals at risk for hereditary breast or ovarian cancer enrolled in the Familial Cancer Registry (FCR) at our institution. FCR participants complete annual follow-up questionnaires, and when eligible, are invited to participate in other studies. We calculated participation rates based on a ratio of number of completed surveys compared to the number of survey participation opportunities. Participation data was extracted from the FCR database and for a subsample (n = 549), data were available from a baseline telephone interview conducted prior to FCR enrollment. Results indicate high rates of on-going participation. Our entire FCR sample had an 87% overall rate of participation over time (up to 5 years). In the sub-sample of 549, participants with greater anxiety and participants unaffected with cancer were less likely to participate over time. Increased participation had small but significant bivariate correlations (ps < .01) with being Jewish (r=.05), married (r=.09), employed full-time (r=.08), higher education (r=.11), higher income (r=.05), and a greater number of first-degree relatives affected with cancer (r=.08). No other variables (e.g., gender, age, number of children) were related to participation, and no variables related to retention at the bivariate level remained significant in a multivariate linear regression model. We found high rates of continued participation in the FCR; these high retention rates are also impacted by a diligent FCR staff. Results indicate that familial cancer registries provide an excellent resource for longitudinal research. Although certain factors are statistically related to retention, correlations are small and do not appear to impact retention over time.	Recruitment of Black women using a State Cancer Registry T Pal, A Garcia, E Rocchio, S Vadaparampil Moffitt Cancer Center Background: Blacks are typically underrepresented in genetic research studies, in part due to recruitment challenges. Objectives: To assess approaches to recruit a population-based sample of Black women through the Florida Cancer Registry diagnosed with breast cancer <age 50 for a study to investigate mutations in the BRCA1 and BRCA2 genes. Methods: Recruitment included 2 mailings, 3 weeks apart, including a "telephone response card' for patients who did not wish to be contacted by phone. If no patient response was received within 3 weeks of the second mailing, a member of the study team contacted the patient by phone. Participation involved a genetic counseling session over the phone, and collection of blood or saliva for genetic testing. Results: Of those in whom contact has been established, 81% (n=75) have indicated interest in study participation. Of these individuals, 11 called the study team after receiving the mailing, 22 sent in the response card, and 42 were actively called, of which 11 (100%), 19 (86%), and 31 (74%) agreed to participate, respectively. The primary factor cited for participation was the desire to understand more about the risk of cancer for family members. For those who declined, the main reason was because they were not interested in the study. Among participants who were actively called by phone and interested in participating, a large proportion of initial contacts were made during weekend hours and non-work hours (42%). Regarding other study-related appointments, 62% of participants (n=45) requested a genetic counseling session during non-work hours. Conclusion: In contrast to many prior studies, Black women with early onset breast cancer expresses interest in participating in studies of genetics and breast cancer. Black women were more likely to be recruited using active methods (e.g., direct calling) than passive strategies (e.g., mailing materials to participants). The availability of study personnel to contact participants during evenings and weekends greatly enhances participation. Study participation rates in Blacks may be enhanced through carefully considering methods to facilitate participation.

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What Do Patient Navigators Do? Qualitative Analysis of a Breast Health Patient Navigator Program Ferrante J, Cohen D Purpose: To describe the services a patient navigator provided and barriers faced in promoting breast cancer screening, diagnosis and treatment in underserved women. Methods: Content analysis of journal notes and log data kept by a patient navigator (PN) performing outreach and navigation in an inner-city community and public safety net hospital (April 2005- September 2008). Results: The PN provided educational outreach to 5838 women, navigation services to 343 women with suspicious mammograms, including 86 women diagnosed with breast cancer. She served 5 main functions: 1. Provided education and psychosocial support to overcome lack of knowledge, fear, denial, anger, and distrust; 2. Arranged social services for financial assistance, insurance, food, clothing, housing, transportation, childcare, medical equipment, medications; 3. Improved communication with health care providers by explaining medical terminology and contacting nurses for patients, 4. Facilitated scheduling and keeping of appointments including reminders and accompanying patients; and 5. Linked patients and families to educational and community resources such as books, churches, support groups, and charitable organizations. Common barriers to service provision were overcoming distrust and inaccurate health beliefs, performing outreach in unsafe neighborhoods, and addressing social needs that had higher priority to women than cancer. Conclusion: The PN provided a variety of services across the cancer care continuum, many outside the medical realm. Addressing the social needs of African-American women facilitates breast cancer screening, diagnosis, and treatment.	Ethnic/Racial disparities in the dissemination of the HPV vaccine Sheinfeld Gorin, Sherri, Westhoff, Carolyn, Franco,Rebeca, Hajiani, Farida, New York Physicians against Cancer Study Group Background. High risk types of the Human Papilloma Virus (HPV) are necessary though not sufficient causes of the vast majority of cervical cancers. The findings of a recent meta-analysis reveal that black women have the highest prevalence of HPV (20.6%, 95% CI, 19.8-21.5%), followed by Latinas (14.1%, 95% CI, 13.9, 14.4%). African American women have the highest rates of mortality from cervical cancer, followed by Latinas. With the approval by FDA of the HPV vaccine, (Gardasil®), among US women age 9-26, dissemination is critical. Recent population-based data reveal low uptake of the HPV vaccine (~25%), particularly among black women and Latinas. Objectives. The aim of this presentation is to describe the supports and barriers to HPV vaccine inoculation among African American and Hispanic US women at the policy, provider, and patient levels. Methods. Using the Comprehensive Model of Screening Change (CMSC) theoretical model as a guide; we conducted a systematic literature review of studies published over the past 10 years, using a standardized extraction protocol. Of 64 English-language articles from peer-reviewed journals, we selected 16 for review. Findings. Barriers at the policy level include: access to health care, cost, insurance coverage, vaccine availability, limited knowledge of the HPV vaccine, and media coverage that stigmatizes innoculation. At the provider level, knowledge about HPV incidence and transmission as well as physician recommendation are important factors that influence parental and patient acceptability of the HPV vaccine. Providers report difficulty in discussing STI's with parents, preadolescents, and adolescents. Providers are hesitant to store a vaccine that will be less widely used. Office-based procedures present structural impediments to dissemination of the vaccine. At the patient level, barriers include limited awareness of the vaccine, socioeconomic status, perception of risk based on sexual history, fear of vaccine safety, socio-cultural, economic, and religious factors. Conclusions. Policy, provider, and patient-focused intervention approaches to increasing dissemination of the HPV vaccine are proposed to increase among black women and Latinas.

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Treatment decision making for patients with unstaged cancer Worthington J, Flocke S, Mupere E, Cooper C. Purpose: To better understand the process of treatment decision making for patients with unstaged cancer. Methods: Unstaged breast, colorectal, and prostate cancer patients diagnosed at >65years old from January 1, 2003 to October 31, 2007 were identified from a tumor registry, which included patients diagnosed and treated at an academic medical center and satellite locations. An initial random sample of 20 breast, 20 colorectal, and 20 prostate cancer patients was chosen, and their medical records were reviewed. The text data about treatment decisions, notes about patient preferences including refusal of treatment and any information concerning specific reasons given for refusal of medical care were gathered verbatim. The text data were analyzed to identify patterns of cancer treatment. Results: A total of 47 patients had information in the medical records concerning cancer treatment. Of these 47, 16 patients had information regarding treatment decision making, which was summarized and categorized into themes. The primary theme was noted in the medical records of 10 patients, which documented the physician discussing specific treatments to which the patients agreed to receive. The majority of these patients had evidence in the medical records of receiving physician recommended treatment to which they agreed. Four of the 16 patients had documented in the medical records that the patient refused either partial or all cancer treatment as recommended by their physician. The patients' primary reason for refusal of treatment was not wanting to be hospitalized. The medical records of the last 2 patients did not focus on the physicians' recommendations but provided detail from the family members' point of view. The family members both advocated for palliative treatment only. The patients' opinions on treatment were not available in the records. Conclusion: Several themes were identified regarding treatment decision making of unstaged cancer patients. Further study is needed to understand why unstaged cancer patients do not receive physician recommended treatment.	Human Papillomavirus (HPV) Vaccine Availability, Recommendations, Cost, and Policies Among Health Departments in Seven Appalachian States ML Katz, PL Reiter, S Kennedy, N Schoenberg, A Johnson, G Ely, KA Roberto, E Lengerich, E Paskett, M Dignan Purpose: To assess HPV vaccine availability, recommendations, cost, policies, and educational materials in health departments in seven Appalachian states. Methods: Telephone interviews of health department personnel in six states and a review of an immunization database from one state. Results: There was variation within and among states for HPV vaccine availability, recommendations, costs, policies, and educational materials. Most health departments (230/233; 98.7%) serving the Appalachian counties reported receiving patient requests for the vaccine, and an estimation of the average monthly requests in health departments per state ranged from 10.3 to 21.5 requests. Only three (1%) health departments across the states reported that the HPV vaccine was not available for patients. Current HPV vaccine supply did not meet demand in some health departments due to costs and high demand (up to 48% of the health departments in Virginia). The HPV vaccine was available through the Vaccines For Children (VFC) program in all states, and some health departments in 6 of the 7 states limited the vaccine for only patients in the VFC program. Vaccine policy varied among states, cost per dose ranged from no cost to $170 for women who did not qualify for the VFC program, and most health departments provided patients with educational materials produced by the Center for Disease Control and Prevention and a pharmaceutical company. Conclusion: Appalachian women suffer a disproportionate cervical cancer burden and future generations could potentially benefit from widespread dissemination of the HPV vaccine. This study documented variation of HPV vaccine availability, recommendations, cost, policies, and educational materials in health departments in Appalachia that could significantly affect vaccine distribution. Findings from this study highlight the need for more consistent policies that maximize accessibility of the HPV vaccine to women, especially those in underserved populations.

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Are Depression and Perceived Stress Associated with Self-Reported Adherence to Cervical Cancer Screening in Medically Underserved Primary Care Patients? Wells K, Arevalo M, Gonzalez M, Fiddes S, Rivers D, Bahadur A, Calcano E, Meade C, Roetzheim R Based on the Resource Capacity Model, it was hypothesized that (1) depression and perceived stress would predict self-reported adherence to cervical cancer screening; and (2) perceptions of control and social support would mediate the predicted relationship between both stress and depression and self-reported adherence to cervical cancer screening. Methods: Participants included 117 adult female medically underserved primary care patients who had a symptom or screening abnormality indicating the possibility of either breast or colorectal cancer (mean education: 8.6 years; 83% Hispanic; 61% Caucasian; 5% African American). Participants completed interviewer-assisted surveys assessing depression (Patient Health Questionnaire), perceived stress (Perceived Stress Scale), perceptions of control (Pearlin Mastery Scale), social support (Interpersonal Support Evaluation List), and self-reported adherence to cervical cancer screening. Results: Most women (88%) were up-to-date on cervical cancer screening and reported mild to moderate depression. Participants with higher levels of depression were slightly less likely to have had a pap test in the past two years [OR: .913; 95% CI =.83-.99, $p < .047$]. Perceived stress was not significantly related to self-reported cervical cancer screening. While both perceptions of control ($r = -.36$, $p < .001$) and appraisal of social support ($r = -.20$, $p = .03$) were negatively correlated with depression, neither perceptions of control nor appraisal of social support mediated the relationship between depression and receipt of cervical cancer screening because neither variable was statistically associated with cervical cancer screening adherence. Conclusions: The study results provide partial support for the Resource Capacity Model in predicting cervical cancer screening, with depression predicting lack of screening in a sample of medically underserved female primary care patients who have experienced a symptom or abnormal screening test for breast or colorectal cancer.	Developing Cancer Control Strategies with the Deaf Community. G. R. Sadler, M Nakaji, P Branz, M Fager, J Jones, V Malcarne. With their own language and culture, deaf people have barriers to accessing health information and care, distrust of the medical community, and barriers to accessing written information secondary to learning English as a second language, if it is learned at all. Since 1997, the Moores UCSD Cancer Center's Community Outreach program has been collaborating with the Deaf Community Services of San Diego, National Association for the Deaf, Gallaudet University, Registry of Interpreters for the Deaf, UCSD computer science and bioengineering departments, and Bovee Productions to create programs to reduce these barriers. This community-campus partnership has created a multifaceted program with easy-to-replicate components, including: 1) a four-year ASL, Deaf Culture, and Cancer Control training program for medical students at the University of California San Diego; 2) an evidence-based cancer control education program for the Deaf community and their loved ones in which video content is presented in American Sign Language (ASL), with open-captioning, voice-over, and no background music; 3) an information dissemination nationwide network for the cancer education program that includes 192 Deaf-friendly ministries and Internet access to the videos (http://cancer.ucsd.edu/deafinfo); 4) an oncology training program for interpreters for the deaf; 5) ASL translated and validated psychosocial instruments; and 6) an assistive listening devices development program with other UCSD computer scientists and bioengineers. This presentation includes an overview of these program components and a discussion of how oncology professionals can work with community advocates for people who are deaf and hard of hearing to implement these programs effectively within a local community. Information will be presented on how the programs were created to help colleagues' replicate these programs, as well as develop additional programs at their own sites. An overview of the evidence demonstrating the efficacy of the components will be presented, along with an overview of the importance of developing competency in Deaf culture and a reading list to assist participants in the development of this competency.

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Singed at the Seams: The Smoldering Burden of Tobacco Use on Safety Net Care Joseph F. West, ScD (Sinai Urban Health Institute) and Heather Sell, PharmD, BCPS (Pfizer) Purpose: The cost burdens associated with treatment of tobacco related illnesses hinder access to preventative care and treatment options that can help close the cancer disparity gap. Methods: The authors evaluated hospital epidemiologic and treatment data to examine the cost, payments and reimbursement associated with treatment of smoking related illnesses. The Quality Gap Mapping Tool, a software program developed by Pfizer, Inc was used to estimate quality benchmarks. These data were compared to the hospital's data on admissions related to smoking attributable factors to determine the costs associated with treating tobacco related illness in a safety net hospital. Results: An estimated 39% of the population in the catchment area had not completed high school and over 50% of the population earns less than $35,000 per year. The estimated tobacco prevalence for the hospital's catchment area was 22.2%; however the percentage of male's who smoked was 26% vs. 18.6% for females; and 25% of African American's vs. 22% of Caucasians. Those who had education past high school had a smoking prevalence of 17.8% vs 36.6% for those who had not completed high school. Poor individuals had a smoking prevalence of 34.9% compared to 19.6% for those earning middle to high level incomes. Individuals earning less than $20,000 per year had a smoking prevalence of over 50%. Smoking attributable cancers make up nearly half of all smoking attributable disease seen in hospital. Smoking directly accounts for a substantial portion of hospital costs (approximately 7-9% of hospital expenditures). Costs were greater among men than women. Smoking attributable diseases tended to have the most sizable negative expenditures. Summary: The high cost of smoking attributable diseases further weakens the hospital safety net and its ability to care for cancer patients by posing a substantial cost burden to overall hospital expenditure.	Project Toolbox: Training the Community to Address Cancer Health Disparities Venessa Rivera-Colon, LaShonda Coulbertson, Desiree Rivers, Marlene Rivera Background: Train-the-trainer models have been documented as an effective means to reach community members with cancer education. Additionally, increased community education and outreach is a suggested means to reduce health disparities. Building on these ideas, Project Toolbox, was established as a means to reach underserved women with cervical cancer prevention education through trained community health advisors. Objective: Project Toolbox is designed to provide community members with the resources and skills to facilitate education and training that impacts cervical cancer health disparities among African Americans and Latinas. Method: The Project Toolbox curriculum and subsequent trainings were developed utilizing a framework built upon the Social Cognitive, Theory, Social Networks and Support Theory, as well as the Social-Ecological and Health Belief Models. Participants are instructed on cancer symptoms, risk factors and preventive screenings; adult learning and health literacy; culture; the fundamentals of presentation; resource development; data collection and community collaboration during a 1-day training. Discussion, role-playing, mock presentation and survey assessment are also conducted. Pre- and Post- test questionnaires are administered to assess participant knowledge and findings are used to amend the Toolbox where necessary. Results: Trainings have been conducted in two Florida regions, with additional trainings scheduled in areas that cover portions of three Florida regions. Trainer satisfaction rate is over 95% and participant knowledge scores increased 21% in pre-test post-test assessments. Trainees rate preparedness to apply training at 100%. Conclusions: Project Toolbox is a qualitatively and quantitatively validated mechanism to train lay health advisors with the cancer prevention and awareness information and to create a cadre of individuals to serve as research partners in an effort to address and reduce cancer health disparities.

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Differing Risks of Esophageal Cancer Sub-types and Spatial Clustering Jill A. MacKinnon, PhD; Recinda Sherman, MPH; Lora E. Fleming, MD, PhD,; Leonidas G. Koniaris, MD; Youjie Huang, MD, DrPH, MPH; Robert C. Duncan, PhD; Brad Wohler, MS; Mark Rudolph, MS; Dido Franceschi, MD; and David J. Lee, PhD Objectives: To characterize and compare patients with adenocarcinoma of the esophagus or squamous cell carcinoma of the esophagus, and to assess the link between socioeconomic status, tobacco use, and geographic areas of esophageal cancer clustering. Methods: We used Florida incident cancer registry data (1998–2002) to identify geographical areas with a higher than expected incidence of esophageal cancer (n= 4,741). Correlates of cancer-cluster membership were examined with cancer-registry–derived individual-level data (demographic and diagnostic, including tobacco usage) and area-based measures from the US census. Results: Neighborhoods with a higher than expected incidence of esophageal cancer were identified with SaTScan software. Multivariable logistic regression analysis indicated that patients living in an area with a higher than expected incidence of squamous cell carcinoma of the esophagus were more likely to be poor, black or Hispanic, and tobacco users, while those living in an area with a higher than expected incidence of adenocarcinoma of the esophaguswere more likely to be wealthier and white. Conclusion: Integrating individual-based cancer registry data with area-based census data is an inexpensive and powerful method for identifying communities in need of targeted prevention and health service delivery activities. Areas identified as high risk need preventive interventions which can then be tailored to cancer sub-type (e.g, smoking cessation for squamous clusters, obesity prevention for adenocarcinoma clusters) and earlier diagnostic screening interventions	Are Smokers Less Compliant with Cancer Screening then Non-smokers? MM Byrne, D Parker, W Zhao, N Dietz, E Davila, K Arheart, A Messiah, M Webb, A Caban-Martinez, Y Huang, A Surenderababu, D Lee Purpose of Study: Previous research has shown an association between various behaviors related to health, suggesting that individuals may differ in their overall health concern or worry. In this research, we explore whether a specific health-related behavior, smoking status, is associated with cancer screening behaviors. Methods: We used data from the 2007 Florida Behavioral Risk Factor Surveillance System and the Florida Tobacco Callback Survey to examine screening behaviors for four cancer types (breast, cervical, prostate, and colorectal). Using multiple logistic regression analyses, we examined the association between smoking status (and severity of smoking addiction) and health screening behaviors, while controlling for numerous demographic variables. Results: For 10 of the 11 screening behaviors, being a current smoker was significantly ($p<0.0001$) associated with being less likely to ever have been screened for a specific type of cancer and also less likely to be compliant with screening guidelines. For breast and cervical cancer, level of addiction to smoking was also significantly ($p<0.0001$) related to compliance with screening recommendations; women with higher levels of addiction were less likely to be compliant. Conclusions: Our results support the notion that individuals' health behaviors are consistent across different types of situations (here cancer screening). We find that individuals who smoke are less likely to engage in cancer screening. Findings from this study can be used to inform interventions to improve cancer screening in targeted populations of individuals who may be under-utilizing cancer screening.

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Medical History and Nicotine Dependence Correlates of Smoking Quit Attempts: BRFSS Florida Tobacco Callback Survey, 2007 Davila EP, MPH, Zhao Wei, MD, MS, Byrne MM, PhD Webb MS, PhD,Huang Y, MD, Dr.PH, Arheart K, EdD, Dietz N, PhD, Caban-Martinez AJ MPH, Parker DF, MHS, Surenderababu A, MS, and Lee DJ, PhD. Purpose: Despite continued reductions in smoking rates, the tobacco-associated public health burden remains high, as many attempts to quit are unsuccessful. This study examined medical history and nicotine dependence correlates of smoking quit attempts among current smokers. Method: Data from the 2007 telephone-based Florida Behavioral Risk Factor Surveillance System (BRFSS) and its follow-up survey, the Tobacco Callback Survey, were used to assess determinants of having ever attempted to quit smoking and attempted to quit smoking in the past 12 months. All analyses were conducted using SAS. Results: Among 3,560 smokers, 41.5% reported having tried to quit smoking in the past 12 months while 82.7% reported having ever tried to quit. Having a history of a tobacco-related medical condition was significantly associated with both recent (Adjusted Odds Ratio (AOR) 1.41 [Confidence Interval 1.19-1.65]) and ever quit attempts (AOR 1.43 [1.15-1.78]). Greater nicotine dependence and being advised by a physician to quit smoking were also significantly associated with ever quit attempts. Conclusion: Targeted smoking cessation interventions are needed for smokers with selected medical conditions and with high nicotine dependence.	Beyond Reading Level: The Suitability of Cancer Print and Web-based Materials Finnie R, Felder T, Kneuper S, Mullen PD Background: Consideration of factors related to reading comprehension-beyond reading level-is imperative to reaching low literacy populations. Six dimensions of these factors have been incorporated into the concept "suitability." Purpose: To identify and describe the extent to which print and Web-based cancer patient education materials are evaluated on dimensions of suitability in published studies. Methods: Search terms representing suitability dimensions were selected with the assistance of a trained reference specialist and applied to: OVID Medline, CINAHL, and PsychINFO and EBSCO Academic Search Premiere. Authors of included studies assessed materials on reading level and at least one other dimension: content, literacy demand (including reading level), graphics, layout and typography, learning stimulation, and cultural appropriateness. Two authors screened 221 citations and abstracts; two coders coded eligible studies independently. Results: Nine studies met eligibility criteria. All assessed cultural appropriateness, 5 assessed content, graphics, and layout; 4 assessed learning stimulation. Five rating instruments were used: Suitability Assessment of Materials (SAM), Readability Assessment Instrument, Cultural Sensitivity Assessment Tool, Bloch Cultural Assessment, and Masset's Checklist. Only one, SAM, has evidence of validity. Most materials failed specific instrument's criteria for readability and cultural appropriateness. More webpages than printed materials received a "not suitable" rating using SAM criteria. Conclusions: Evaluation of suitability dimensions of print and Web-based patient education materials for cancer is not widely reported in the published literature. If materials are to reach lower literacy audiences effectively they need to attend to more than simple reading level checks and even cultural appropriateness; more attention is needed to the other dimensions of suitability: literacy demand (beyond reading level), graphics, layout and typography, learning stimulation. Practitioners need readily available and easy to use assessment tools for all aspects of suitability. The SAM is one such instrument.

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Trends in Awareness of Genetic Testing for Inherited Cancer Susceptibility between the Years 2000 and 2005 ST Vadaparampil, L Wideroff, N Breen Little is known about trends in awareness of genetic testing for inherited cancer susceptibility (GTICS). The purpose of this study was to estimate the change in the percentage of U.S. adults who reported having heard of GTICS, and assess factors associated with test awareness in 2005. The National Health Interview Survey is a nationally representative in-person, computer-assisted survey. The analysis compared 27,405 individuals in the year 2000 with 26,402 in 2005, > age 25, who responded to a question about awareness of GTICS. Weighted percentages (95% CI) were calculated for each year and differences were assessed using Student's t-test. Test awareness in 2005 was modeled using multivariate logistic regression, adjusting for demographic, family history, behavioral, and health care factors. Based on self-reports, in 2005, 41.5% (40.7 – 42.3) of the U.S. adult population heard of GTICS compared to 44.4% (43.6-45.2) in 2000, representing a 2.9% decrease in awareness ($p<.05$). The greatest declines (i.e., >4.0% decrease in awareness & $p<.05$) were observed in individuals who: (1) were age 25-29 and 40-59, (2) had a high school education or some college, (3) had incomes of >$35K, (4) had not seen their health care provider in <12 months, and (5) perceived a medium cancer risk. In multivariate analysis of 2005 data, test awareness significantly increased with higher levels of education and income ($p<0.01$, test for trend). Individuals with > a college education were 3.5 times more like to have heard of GTICS than those with < than a high school education. Furthermore, when compared to Whites, odds ratios (and 9.5.% C.I.) of awareness were 0.66 (0.61-0.72) among Blacks, 0.41 (0.38-0.45) among Hispanics, 0.36 (0.31-0.41) among Asian/Pacific Islanders, and 0.51 (0.35-0.76) among American Indians/Alaskan Natives. These patterns were also observed in a prior report of 2000 data. Awareness of genetic testing has declined in the general U.S. population. Individuals of lower socioeconomic status and racial/ethnic minorities are less aware of GTICS. This lack of awareness may widen disparities in risk appropriate use of GTICS.	Evaluating Cancer Screening Outcomes in a Department of Mental Retardation Database. JE Wilkinson, D Bowen, K Freund, and E Lauer Context: Research on health outcomes for adults with intellectual disabilities (ID) has been challenging because of a lack of representation in national databases and a paucity of available databases that are suitably large or representative for. Objective: This project evaluates a database newly implemented by the Massachusetts DMR and evaluates the validity of its demographic data and cancer screening outcomes. Design: The deidentified data of women over 39 (1-1-06) in the DMR database (n=2940) were examined for the frequency of mammography and selected variables (residential setting, functional status, involvement of guardian). A subgroup analysis was conducted to evaluate the validity of the mammography variable for women who were also patients at our medical center. Results: In preliminary analyses, 45% of women in the database had a mammogram in the two-year period studied. Over 80% of women receiving residential services from the Massachusetts DMR were represented in this database, while less than 30% of women living at home were represented. Conclusions: The Massachusetts DMR data is highly representative of the majority of women with ID in Massachusetts. It may be less generalizable to women with ID living at home. Implications of using state DMR data to conduct population health research will be discussed.

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Preliminary Findings of a Targeted, Direct-Mail Colorectal Cancer Screening Pilot Study in African American Churches J.Q. Purnell, J. Roscoe, G. Morrow, N. Bennett, C. Heckler, K. Mustian, O. Palesh, L. Peppone Research has demonstrated the importance of social networks and targeted messages regarding cancer risk in motivating African Americans (AAs) to be screened for colorectal cancer (CRC), and direct-mail interventions have had moderate success in previous studies with non-minority samples. Purpose: This randomized, controlled pilot study examined initial efficacy of a direct-mail, targeted CRC screening intervention (fecal immunochemical test-FIT-kits, letter and phone messages) delivered via an important social network (3 urban churches). Methods: AAs age 50+ (N=15; Age: M=60.2, SD=5.8; 67% female) off-schedule for screening were randomized to receive: 1) FIT + targeted letter from pastor + pre-recorded telephone reminder from pastor and copy of initial letter at 7 days post-mailing (intervention), or 2) FIT + pastor letter and telephone reminder at 17 days post-mailing (control). The primary outcome was return of kits in the intervening 10-day period. At enrollment participants completed a questionnaire on demographics, screening history, and psychosocial variables, and 4 weeks post-mailing they completed feedback questionnaires assessing influence of intervention components on kit return (1=Not at all to 4=A lot). Results: Sixty percent (n=9) of study participants returned the kits. A chi-squared test showed no significant association of kit return and study arm. Logistic regression analysis showed a trend towards a higher rate of return among those with greater levels of ethnic identity (p=.08). There was a 33% (n=5) response rate to the feedback questionnaire, in which participants rated "being approached through your church" as most influential (M=3.4, SD=.55), followed by "getting FIT kit in the mail" (M=3.2, SD=.84) and "hearing about the risk of CRC for AAs" (M=3.0, SD=1.22). Conclusion: These results suggest that a CRC screening intervention model involving direct mail of FIT kits and reaching participants through churches may have promise for individuals not reached through traditional methods.	Factors Associated with Cervical Cancer Screening in Puerto Rico Ortiz AP, Hebl S, Serrano R, Fernández M, Tortolero-Luna G. Purpose: To identify factors associated with cervical cancer screening among the female population aged ≥18 years living in Puerto Rico (PR). Methods: The study population included women who participated in the PR BRFSS 2006, with no history of hysterectomy and who answered the questions regarding cervical cancer screening practices (n=2,206). Weighted population prevalence estimates of Pap test screening in the past 3 years (and their 95% confidence intervals) were estimated. Logistic regression models were used to assess demographic, lifestyle and clinical characteristics associated with screening. Results: Overall, 71.9% (95% CI=69.4%-74.4%) of women reported having had a Pap test in the preceding 3 years; the prevalence was lowest among women aged 18-20 years (25.8%) and 21-30 years (63.9%), reached above 80% among those aged 31-40, 41-50 and 51-60 years and decreased to 68.9% among women ≥61 years. Factors associated with Pap test screening in multivariate logistic regression models included routine checkup in the past year (OR=2.38, 95% CI=1.66-3.39) and leisure time physical activity (OR=1.62, 95% CI=1.20-2.21). Women with a household income of $35,000-49,999 and ≥$50,000 were 3.1 (95% CI=1.23-4.68) and 2.4 (95% CI=1.23, 4.68) times more likely, respectively, to have been screened as compared to those with the lowest income (<$15,000). Students were 80% less likely to have been screened as compared to employed women (OR=0.20, 95% CI=0.10-0.40), although no difference was observed between those employed and unemployed. Marital status, education level, health insurance, number of children in the household, body mass index, smoking and alcohol consumption were not associated with cervical cancer screening. Conclusions: The prevalence of Pap test screening in PR is lower than that of other racial/ethnic groups in the US and is far below the 90% recommendation established by Healthy People 2010. Barriers to screening in this population include younger age, lower household income, physical inactivity and student status. This information is essential for the development of targeted interventions and screening programs in PR.

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Race Moderates the Relationship between Colorectal Cancer Screening Behavior and Obesity Leone, L.; Pignone, M. Purpose: To determine if race is a moderator of the relationship between obesity status and colorectal cancer (CRC) screening in women. Methods: Using nationally representative data from the 2005 National Health Interview Survey, we examined the relationship between obesity status (BMI18.5-29.9 vs. BMI≥30) and CRC screening for white and African American women ages 50 and older. Multiple screening status variables were examined including: adherence to any test guideline, up-to-date colonoscopy, and up-to-date stool card test. We developed logistic regression models to examine the relationship between obesity and screening status that included an interaction term (race X obesity status) to determine if race affected the obesity-screening relationship. We used a step-wise elimination procedure to produce a final model that controlled for reported physician recommendation for screening, past-year physician visits, co-morbidities, smoking status, education, and age. Adjusted screening rates (adherence to any test guideline) were calculated using direct standardization to model covariates. Results: The relationship between obesity and screening differed by race for the adherence to any screening test variable (p= 0.03 for interaction) and colonoscopy alone (p=0.01 for interaction), but not for stool card tests. Among white women, adjusted screening rates were 57.6% for non-obese women and 48.9% for obese women (n= 4,430, p= 0.01). Among African American women, 50.8% of non-obese women and 57.3% of obese women were up-to-date for at least one screening test (n=690, p=0.38). Conclusions: For CRC screening, weight is inversely correlated with screening in white, but not African-American women. This may explain why previous research of the obesity-screening relationship, which was not race stratified, has had mixed results. While improved efforts are needed to increase CRC screening in all women, more research is needed to understand how obesity affects screening behavior. Improving screening rates among obese women, who are at higher risk for CRC, has the potential to significantly reduce CRC burden.	Factors Associated with Mammography Screening among Puerto Rican Women Tortolero-Luna G, Ortiz AP, Hebl S, Serrano RA, Fernández ME. Purpose: To examine mammography screening practices among women aged 40+ years living in Puerto Rico (PR). Methods: Women participating in the 2006 PR-BRFSS responding to the questions regarding breast cancer screening practices (n=2,237) were used for this analysis. The weighted prevalence of mammography screening in the past 2 years (95% confidence intervals) was estimated. Multiple logistic regression models were used to assess factors associated with mammography screening behavior. Results: Overall, 76% (95% CI=74%-78%) of women aged 40+ years had had a mammogram in the past 2 years. Prevalence of mammography was highest among women aged 50-64 years (82%; 95% CI: 75%-85%), lowest among women aged 40-49 years (70%; 95% CI: 65-74%), and intermediate among women aged 65+ years (74%; 95%CI: 71%-78%). Having had a mammogram in the past 2 years was associated with having had a Pap Smear test in the past 3 years (OR=12.1; 95% CI=8.0-18.3), having health insurance (OR= 5.2; 95% CI=2.4-11.3), routine checkup in the past year (OR=4.0, 95% CI=2.5-6.3), and ever having had a CBE (OR=2.0, 95% CI=1.3-2.9). Marital status, household income, number of children in the household, leisure time physical activity, and smoking status were not associated with mammography screening. Conclusions: The prevalence of mammography screening among Puerto Rican women aged 40+ years is similar to that reported by BRFSS for white and Hispanic women in the US. These findings underscore the importance of access to health care as a determinant of mammography screening and identify opportunities for future intervention among medically underserved women. This data is essential for the planning and evaluation of cancer control strategies in Puerto Rico. Future studies should address other factors not collected by the BRFSS to better describe breast cancer screening behavior on the island and develop interventions tailored to the Puerto Rican population.

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Effect of English Proficiency on Colorectal Cancer Screening. Diaz JA, Roberts MB, Goldman RE, Eaton CB, Rakowski W. Purpose: To examine the relationship between level of English proficiency and receipt of CRC screening tests among Latinos and non-Latinos using a diverse, population based sample of adults. Methods: Cross-sectional analysis of data from the 2003 and 2005 California Health Interview Survey. Study included adults >50 years of age, who completed the survey in English or Spanish. The primary outcome measure was receipt of CRC screening tests. Estimated crude and adjusted odds ratios of respondents' reported test receipt was stratified by self-reported Latino/non-Latino race/ethnicity and level of English-proficiency. Results: Of the 32,112 respondents, the overall CRC screening was 52%. The unadjusted rates of CRC screening were: 54% among non-Latinos responding-in-English, 46% among Latinos responding-in-English, 45% among Latinos responding-in-Spanish with high self-rated English proficiency, and 35% among Latinos responding-in-Spanish with low self-rated English proficiency. In multivariable analysis, compared with non-Latinos responding-in-English, neither Latinos responding-in-English (OR, 0.87; 95% CI, 0.75-1.0) nor Latinos responding-in-Spanish with high self-rated English proficiency (OR, 1.26; 95% CI 0.79-2.0) were less likely to report CRC screening. However, Latinos responding-in-Spanish with low self-rated English proficiency were 23% less likely to have received CRC testing (OR, 0.64-0.93). Conclusion: Lower levels of self-reported English proficiency among Latinos are associated with lower rates of CRC screening and may contribute to the disparities in CRC test receipt that exists between non-Latinos and Latinos.	Facility practice characteristics explain differences in mammogram image quality by patient race/ethnicity. Rauscher GH, Conant EF, Zahora C, Camargo MC, Martens NM, Silva A, Beam CA. Introduction: In an ongoing study of racial/ethnic disparities in breast cancer, Black and Hispanic patients were more likely than their White counterparts to report symptomatic awareness of their breast cancer despite a recent prior routine mammogram (within two years of discovery) (36% and 44% vs. 25%, respectively, p=0.0001). In order to understand the role of mammography image quality on this disparity we consented patients to allow us to review their mammogram images. Methods: A single breast imaging specialist (EC) performed a blinded review of images that prompted diagnostic follow-up (the index mammogram), as well as the most recent prior mammogram if available. Seven indicators of image quality were assessed: positioning, compression, contrast, noise, exposure, sharpness and artifacts. Each was scored on a five-point Likert scale, where 4 and 5 represented good and excellent quality, respectively, while 1 represented poor quality. We defined a binary variable to distinguish images of higher quality as those that received a score of either good or excellent on all 7 indicators. Preliminary results are based on 182 images examined for 99 patients. Results: Minorities were less likely than Whites to have mammograms of higher quality (36% vs. 59%, respectively, p<0.0001). More education and more income were each strongly associated with higher image quality (p=0.0001 for each). Higher image quality was more common at academic or teaching facilities than at non-academic facilities (82% vs. 37%, p<0.0001). Images produced by digital mammography were of higher quality than analog mammogram images (76% vs. 31%, p<0.0001). In logistic regression, the increased odds of better image quality in Whites (OR=2.5) was virtually eliminated with adjustment for facility type and image type (OR reduced to 1.1). Conclusion: White women appear to be obtaining mammograms of higher quality than minorities, primarily because they are more likely to obtain mammograms at academic facilities and facilities with digital mammography machines.

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Recruiting African American Older Adults to a Cancer Prevention Trial Howerton M, Bone L, Shapiro G, Johnson L, Wenzel J, Callender G, Ford J Individuals age 65 and older are eligible for Medicare preventive services, but racial and ethnic minority populations underutilize these services. The underutilization of cancer screening services often translates into later stage at diagnosis and higher mortality rates. In the Cancer Prevention & Treatment Demonstration (CPTD), we aim to address these disparities. The purpose of this study was to evaluate the recruitment strategies used for Years 1 and 2 of the demonstration. In phase 1 of recruitment, the Centers for Medicare and Medicaid Services (CMS) granted us access to the Medicare rosters for the 33 zip codes in Baltimore City. Potential study participants were verified as eligible via the Medicare Internet portal; we mailed letters describing the study to their homes. After 2 weeks, a research interviewer (RI) attempted to contact the potential participant by phone. If the potential participant was eligible and agreed to join the study, the RI scheduled a baseline interview in a private setting. In phase 2 of recruitment, we conducted convenience sampling in parallel with the population-based approach. Phase 3 of recruitment consisted of an enhanced population-based sampling method : 10,000 letters plus professionally developed inserts were mailed over 8 weeks, a calling center was created, and RIs were dispatched to conduct interviews. Additionally, CMS provided us with a more comprehensive roster consisting of phone numbers in addition to home addresses. Phase 1 and 2 of recruitment yielded inconsistent and low enrollment numbers. By June, 2008, we had met only 38.9% of our recruitment goals. Phase 3 recruitment yielded 552 participants randomized between July 1 and October 15, 2008, or 96.2% of the recruitment goal. In conclusion, factors that led to the success of our recruitment strategy were phone numbers supplied by Social Security, colorful inserts that accompanied the introductory letter, as well as a streamlined recruitment process.	Racial and Ethnic Distribution of Clinical Presentation for Mammography Before Age 40 Kapp JM, Yankaskas B, Walker R, Haneuse S, Buist DSM PURPOSE: Describe the first mammography experience for women <40, by race/ethnicity. METHODS: Data are pooled from the National Cancer Institute's Breast Cancer Surveillance Consortium, a collaborative network of mammography registries created for the purpose of studying performance and outcomes in community practice. We included women ages 18-39, with no prior history of breast cancer, with a first mammogram from 1996-2005, and where the purpose was screening or diagnostic (for the evaluation of a breast problem). RESULTS: Our sample of women <40 included 73,353 screening mammograms and 26,262 diagnostic mammograms. Among screens, a greater proportion of Non-Hispanic (NH) black (18%) and Hispanic women (19%) were aged <35, than NH white (15%) or Asian (13%) women. Among first diagnostic mammograms, a greater proportion of NH black women were <35 (61%), compared to NH white (55%), Asian (52%), and Hispanic (54%) women. Among screening mammograms, 11% of women reported symptoms, 5% reported a lump, and 2% reported ≥2 symptoms. Among diagnostic mammograms, 91% reported symptoms, 65% reported a lump, and 17% reported ≥2 symptoms. For screens, NH white women were slightly less likely than others to report a lump; for diagnostic mammograms, NH white women were substantially more likely to report a lump (67% compared to 55-63%). Overall, 9% and 14% of the women undergoing diagnostic mammography had discharge and "other" symptom concerns, respectively, which was higher for NH blacks (12% and 22%) compared to other groups. Asian women were substantially more likely than other races to report no symptoms (23% compared to 8-10%, respectively). CONCLUSION: This is the first study to describe the racial/ethnic distribution of the clinical presentation of women with a first screening or diagnostic mammogram prior to age 40. We found substantial variation in the clinical presentation of these women. Understanding this variation is critical for improving clinical outcomes for young women who tend to have more aggressive disease, and for appropriately delaying mammography for young women where early screening is unwarranted.

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Health Literacy Disparities in Relation to Cancer Patient-Oriented Outcomes. A. Trentham-Dietz and M.C. Walsh for the ACCESS Study Investigators (University of Wisconsin). Limited health literacy has been associated with poorer health outcomes in patients with chronic disease including cancer. We aimed to assess the relation between literacy and cancer patient reports of their treatment experiences, satisfaction with care, and quality of life. Wisconsin cancer patients diagnosed with breast, lung, colorectal, or prostate cancer in 2004 were identified from the statewide registry. In 2006, a sample of patients (N=1,841; overall participation 67%) were asked to complete a survey eliciting information regarding demographics, cancer treatment, barriers to care, and satisfaction with care and quality of life using the FACIT family of instruments. The survey also included three questions regarding reading hospital materials, filling out medical forms, and learning about their cancer using written information; questions were identified by Chew and colleagues (Fam Med 2004) as effective screens for inadequate health literacy. Logistic regression was used to estimate the odd ratio of poorer literacy according to patient characteristics. Since results were similar for all three questions, results for only the one question regarding learning about their cancer are shown. Patients with poorer literacy were more likely to be older (P=0.1) and have less education (P<0.001). After adjustment for age and education, lower literacy was more common among lung (OR=2.3), colorectal (OR=1.4), and prostate (OR=1.9) cancer patients than among breast cancer patients. Poorer literacy was associated with both a 4-fold increased odds of poor/fair self-rated health (vs. excellent, P<0.001) and a 4-fold odds of poor satisfaction with their cancer treatment (P<0.001). In addition, patients with poorer literacy were 67% more likely to report that the treatment staff made most of the cancer treatment-related decisions, as compared with patients who reported shared decision making (P=0.02). Prospective studies are needed to address whether assistance for cancer patients with inadequate literacy will improve their long-term satisfaction with care, quality of life, and, ultimately, survival.	Mediators of the effect of area-level poverty on physical functioning among breast cancer survivors. Schootman M, McQueen A, Jeffe D. Purpose: The purpose of the study was to identify mediators of the effect of area-level poverty on physical functioning among a statewide sample of 519 breast cancer survivors in Missouri interviewed by telephone one year after diagnosis (recruited in 2007-2008; 91.4% white, mean age: 59.5 years). Methods: Measures included sociodemographics (age, race, education, income), physical functioning (SF-36), and hypothesized mediators (perceived stress, social support, depressive symptoms [CES-D], perceived neighborhood physical and social disorder, collective efficacy, comorbidity, cancer treatment, and health behaviors [smoking, alcohol use, and physical activity]). Participants' street address was geocoded to obtain the census tract and associated poverty rate. Mplus was used to test an a priori path model with 17 potential mediators and sociodemographic covariates along with item covariances. Results: In unadjusted analysis, women who lived in areas with increased poverty were more likely to report lower physical functioning. Without modification, the hypothesized model fit the data reasonably well, $\chi2(42)=252.24$, $p<.001$; WRMR=0.97. Neighborhood disorder (physical: -.10 [SE=.03] $p<.001$; social: .05 [SE=.02], $p=.021$), comorbidity (-.10 [SE=.02] $p<.001$), and physical activity (-.10 [SE=.03], $p<.001$) were significant mediators and the remaining direct effect of census tract-level poverty on physical functioning was not statistically significant, suggesting full mediation. Conclusions: Breast cancer survivors who live in impoverished areas reported lower physical functioning, but this association was fully mediated by modifiable factors. Increasing physical activity may improve physical functioning among breast cancer survivors who live in impoverished areas. Interventions aimed at reducing the likelihood of disease progression among breast cancer survivors with comorbid conditions who live in impoverished areas also may improve physical functioning. Research is needed to examine how perceived neighborhood disorder increased the risk for reduced physical functioning among breast cancer survivors in impoverished areas.

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Hispanic Women's Knowledge and Attitudes towards Genetic Testing for HBOC Quinn, G; McIntyre, J.; Vadaparampil, S. Purpose: This study sought to qualitatively explore knowledge and attitudes for genetic testing information among Mexican, Puerto Rican, and Cuban women at increased risk for hereditary breast and ovarian cancer. Methods: Women aged 18-65 with a personal or family history of breast or ovarian cancer, were recruited from the Tampa Bay Area. Eligible women participated in a semi-structured interview. Data were analyzed using a combination of open-coding and a hermeneutical approach. Data were coded independently by at least two researchers and an inter-rater reliability rate of 90% was achieved. Results: Fifty three women participated in the study. For the majority of content areas, there were no major differences between the sub-ethnicities. Women in all groups reported: having discussed cancer among family and friends; associating cancer risk with family history and lifestyle choices, never received physician recommendation for genetic testing; limited knowledge of genetic testing; and fear of test results. However, five key areas notably different between the three groups: Puerto Rican women said their primary source of health information is print (newspapers) whereas Cuban and Mexican women reported physicians as their primary source. Cuban and Puerto Rican women reported using the Internet routinely for health care information. Mexican women said they did not use computers. With respect to additional information about genetic testing, the majority of Cuban women wanted more information about what happens after the test (reporting) and how to handle positive results. However, Mexican women wanted to know more about the actual test procedures (pain) and Puerto Rican women wanted more data about the accuracy of the test and risk statistics. Conclusions: While our data show there are similarities, such as low levels of knowledge and ambivalent attitudes, there are noteworthy differences between the groups on information preferences. In designing genetic education information for Hispanic audiences, it is important to consider varied channels for dissemination and preferences for specific types of information across sub-ethnicities.	Filaggrin deletion mutations do not explain reduced incidence of lung, upper aero-digestive tract, and kidney cancers among individuals with eczema. S. Oh, J. McKay, L. Moore, D. Zaridze, V. Matveev, N. Szeszenia-Dabrowska, J. Lissowska, P. Rudnai, E. Fabianova, D. Mates, V. Bencko, L. Foretova, V. Janout, W. Chow, N. Rothman, A. Chabrier, V. Gaborieau, G. Smith, P. Brennan* Reduced risks for brain, pancreatic, and lung cancers have been reported among eczema patients. Recently, loss-of-function mutations in the epidermal barrier gene filaggrin (FLG) have been identified as strong predictors for eczema. This study had two objectives: (1) to investigate the relationship of cancer with eczema, and (2) to examine whether the inverse association observed between cancer and eczema could be explained by a mechanism involving filaggrin. We therefore genotyped two common FLG null mutations (R501X and 2282del4) in a large, multi-center case-control study. Study subjects included 2,208 lung cancer cases, 811 upper aero-digestive tract (UADT) cases, 953 kidney cases, and 2,760 controls recruited from 6 central European countries between 1998 and 2003. Self-reported eczema was inversely related to all cancers combined (odds ratio [OR] = 0.66, 95% confidence interval [CI]: 0.52, 0.85), and specifically with lung (OR = 0.74, 95% CI: 0.55, 1.00), UADT (OR = 0.73, 95% CI: 0.45, 1.20), and kidney (OR = 0.61, 95% CI: 0.38, 0.97) cancers. Eczema risk was increased among carriers of FLG nulls but was estimated imprecisely (risk ratio = 1.55, 95% CI: 0.99, 2.43). No evidence was found to support a protective effect of FLG mutations on the various cancers (OR = 1.16, 95% CI: 0.91, 1.47 for all cancers combined), but an increased risk for UADT cancer was observed (OR = 1.57, 95% CI: 1.08, 2.27). These data support the hypothesis that eczema is associated with reduced overall cancer risk, but that the protective effect—if genuine—does not appear to work through a mechanism involving filaggrin.

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No association between four PTEN SNPs and colon cancer Phillips, LS, Thompson, CL, Plummer, SJ, Tucker, TC, Casey, G5, Li, L. Mutations and deletions in the tumor suppressor gene PTEN (phosphatase and tensin homolog) have been found in a variety of cancer types, including breast, endometrial, melanoma, brain, prostate, and colon. In addition, PTEN expression is decreased in over 50% of breast, melanoma, prostate and colon tumors. Candidate gene analyses for PTEN in breast, prostate, and endometrial cancers are inconclusive. We utilized a population-based case-control population (421 cases and 483 controls) and conducted a candidate gene analysis on PTEN and colon cancer. Four SNPs in PTEN were genotyped and haplotypes were reconstructed using SAS Haplotype. Association was assessed via logistic regression models adjusting for age, gender and race as well as family history of colon cancer, body mass index (BMI), non-steroidal anti-inflammatory drug (NSAID) use and physical activity. We found no association between any of the four PTEN SNPs and colon cancer using the dominant, additive, or recessive models. In addition, none of the haplotypes with a population prevalence greater than 5 percent were associated with colon cancer for any of the genetic models. Our results suggest that common inherited variation in the PTEN gene is not associated with increase in risk of colon cancer in this population.	Genetic polymorphisms of ADPRT, XRCC1, and APE1 and levels of in vitro BPDE–induced DNA adducts in healthy controls Zhao H, Wang L, Li D, Stugis E, Wei Q Purpose of study In vitro benzo[a]pyrene diol epoxide (BPDE)-induced DNA adducts have been used as a phenotypic biomarker for an individual's DNA-repair capacity. Since variations in the base-excision repair (BER) genes ADPRT, XRCC1, and APE1 may alter DNA-repair enzymes or functions, we hypothesize that genetic polymorphisms of these genes are associated with levels of in vitro BPDE-induced DNA adducts. Simple statement of methods We genotyped single-nucleotide polymorphisms of ADPRT (Ala762Val), XRCC1 (Arg399Gln), and APE1 (Asp148Glu) genes from 706 healthy non-Hispanic white hospital controls. BPDE-induced DNA adduct levels in peripheral lymphocytes were obtained by using the 32P-postlabeling method. Chi-square and nonparametric Wilcoxon two-sample tests were applied to DNA adduct distributions in categorical variables. Unconditional logistic regression was used to calculate odds ratios and 95% confidence intervals for the genotypes as predictors of BPDE-induced DNA adduct phenotypes. Summary of results DNA adduct levels were significantly higher in former and current smokers than in never smokers. The median BPDE-induced DNA adduct levels (relative adduct level □ 107) varied significantly among APE1 genotypes Asp/Asp (32), Asp/Glu (27), and Glu/Glu (17). Dichotomizing the DNA adduct levels into high and low by a median value of 26.5, APE1 genotypes Glu/Glu and Asp/Glu had a lower risk of high adduct levels than did the APE1 Asp/Asp in the total study population. The adjusted odds ratio was 0.47 (0.26-0.86) for Glu/Glu and 0.60 (0.36-0.98) for Asp/Glu compared with the APE1 Asp/Asp. Stratified by smoking status, the APE1 effects were persistent in the ever smokers and disappeared in the never smokers. The correlation coefficient between the BPDE-induced adduct levels and pack-year of smoking was 0.029 (P = 0.57), indicated no linear association between the two. Statement of conclusions In vitro BPDE-induced DNA adduct levels were associated significantly with smoking status. APE1 Asp/Glu and Glu/Glu genotypes had lower BPDE-induced DNA adduct levels than did the APE1 Asp/Asp genotype.

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Interleukin-22 Genetic Polymorphisms and Risk of Colon Cancer CL Thompson (1), SJ Plummer (2), TC Tucker (3), G Casey (2), L Li (1) 1Departments of Family Medicine-Research Division, Epidemiology and Biostatistics, Case Western Reserve University/University Hospitals Case Medical Center, Case Center for Transdisciplinary Research on Energetics and Cancer; 2Department of Preventive Medicine, University of Southern California; 3Cancer Control Program, University of Kentucky, Lexington Purpose: Interleukin-22 (IL-22), a member of the IL-10 family, is a recently identified T-cell-derived cytokine that mediates epithelial immunity. Emerging evidence supports a role of IL-22 in colon tumorigenesis. Methods: We carried out a tagSNP association analysis to comprehensively evaluate the association of IL-22 genetic polymorphisms with colon cancer risk in a population-based case-control study of 561 incident colon cancer cases and 722 controls. Seven tag SNPs in the IL-22 gene were genotyped. Results: In an unconditional logistic regression analysis adjusted for age, gender and race, we found that the variant G allele of SNP (rs1179251, C/G) was significantly associated with an increased risk of colon cancer in a monotonic gene-dose response manner: compared to those homozygous for CC, the odds ratio (OR) estimates were 1.47 (95% CI = 1.09 – 1.97) for CG, and 1.56 (95% CI = 0.60 – 4.07) for GG, respectively (p-trend = 0.001). Further adjustment for family history of colorectal cancer, non-steroidal anti-inflammatory drugs, BMI, smoking and alcohol use did not alter the results. Inferred seven SNP haplotype analyses showed similar results: one common haplotype with the rs1179251 G allele was significantly associated with colon cancer risk with OR of 1.43 (95%CI = 1.06 – 1.94) for individuals carrying one copy of the haplotype, and OR of 1.92 (95% CI = 0.60 – 6.15) for those carrying two copies (p-trend = 0.04). Conclusion: This is the first study to show an association of inherited variation in IL22 and risk of colon cancer, providing further evidence for a role of IL-22 and immunity in the development of colon cancer.	Association of TP53 TagSNPs and haplotypes with the risk of lung cancer and upper aerodigestive tract (UADT) cancer Yiren Wang, James Mckay, Paul Brennan, et al We defined two blocks in the TP53 gene according to linkage disequilibrium. Through tagSNP haplotype analysis, we found that haplotype G-G-G-wt in block 1 appears to be associated with lung cancer with OR=0.65 and CI=(0.44, 0.97) in former-smokers; while in non-smokers, haplotype G-G-G in block 2 shows an association with lung cancer with OR=0.43 and CI=(0.26, 0.73). No apparent association was observed for both TP53 blocks in current-smokers for lung cancer. Similar effects in the same direction, although insignificantly, were observed in upper aerodigestive tract cancer (UADT). We conceive that block 1 probably encodes the parts of proteins that regulate apoptosis whereas block 2 encodes the parts of proteins that trigger the cell cycle arrest.

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Anti-HMdU aAbs, a Biomarker of oxidant load, as a predictor of breast cancer risk Siegel E, Giuliano A, Karkoszka J, Salemi J, Arslan AA & Frenkel K Purpose of Study: Determine whether anti-5-hydroxymethyl-2'deoxyuridine autoantibodies (anti-HMdU aAbs), biomarkers of oxidant load, are predictors of breast cancer in pre- and post-menopausal women. Anti-HMdU aAbs were shown to be higher in healthy pre-menopausal women than post-menopausal women, among individuals with various inflammatory diseases, and those exposed to factors that increase ROS, such as smoking. Methods: This nested case-control study within the New York University Women's Health Study identified 506 breast cancer cases. 990 cancer-free women were matched to cases on age, date of enrollment and menopausal status at enrollment (262 pre-menopausal cases and 544 controls; 244 post-menopausal cases and 446 controls). Breast cancer developed in women between the ages of 38-70 years, with 83 cases diagnosed among women < 50 years. Sera collected between 2 to 14 years prior to breast cancer diagnosis were analyzed by ELISA. Conditional logistic regression estimated the association between breast cancer risk and log-transformed aAb levels, stratified by menopausal status. Results: Among post-menopausal women, increasing anti-HMdU aAb levels were positively associated with breast cancer incidence 5-14 years following blood donation (OR=1.31; 95% CI: 1.01-1.70). There was a significant inverse association between anti-HMdU aAb level and breast cancer incidence among pre-menopausal women diagnosed with breast cancer prior to age 50 (<50years old: OR=0.62; 95% CI: 0.39-0.99). Conclusion: Anti-HMdU aAb titers appear to be stable biomarkers of post-menopausal breast cancer risk, predicting breast cancer 5 – 14 years prior to diagnosis. Anti-HMdU aAb titers may be a marker of immuno-suppression, and as such a marker for increased incidence of pre-menopausal breast cancer. [Supported in part by AG14587, ES00260]	Changing birth patterns are associated with increased lobular breast cancer risk Newcomb PA, Trentham-Dietz A, Hampton JM, Titus-Ernstoff L, Egan KM University of Wisconsin-Madison, Fred Hutchinson Cancer Research Center, Dartmouth Medical School, and H. Lee Moffitt Cancer Center Age at first birth and nulliparity have been increasing in successive birth cohorts since 1940; as these women age, the incidence of lobular breast cancer has markedly increased compared to ductal breast cancer. To determine the association between parity patterns and breast cancer risk, while taking into consideration other changes in risk factors for lobular disease, such as exogenous use, we analyzed a multicenter population based case control study in women aged 20-79 years. Cases of incident invasive breast cancer (n=20,832) were identified from cancer registries in three states; controls (n=23,866) were selected from population lists. Interviews conducted from 1988-2004 collected information on reproductive experiences, medication use and other risk factors; histological type of breast cancer was obtained from each state's cancer registry. A first birth > 30 years of age was associated with a 2.5 fold increase in risk of lobular breast cancer compared to a first birth at <20 years (adjusted odds ratio (OR) 2.5, 95% confidence interval (CI) 2.0-3.1), whereas for ductal breast cancer the risk increase was much less (OR 1.5, 95% CI 1.3-1.6) (p for difference p 0.001). Nulliparity was also more strongly associated with lobular compared to ductal breast cancer. (p for difference 0.04). Women with a late age at first birth with high BMI, or those who had never used oral contraceptives were at nearly four fold greater risk of lobular disease, compared to the more modest 1.5 fold increase for ductal breast cancer. However, hormone therapy did not modify the association between late age at first birth and histology. These strong effects of late age at first birth on lobular compared to ductal breast cancer may suggest that late pregnancy stimulates the growth of foci of lobular carcinoma that might otherwise remain small or undetectable in the absence of pregnancy growth factors.

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Assessment of Obesity and Other Risk Factors on Stage of Endometrial Cancer Bittoni M, Paskett E, Fowler J, Maxwell L Purpose: Obesity is a modifiable risk factor for endometrial cancer (EC), but issues remain as to whether BMI is independently associated with EC, or if this association is affected by other factors, such as tumor grade, age and stage. High-fat diets have been associated with increased EC risk versus diets high in fiber and fruit/vegetable consumption. This study sought to examine the association of BMI and other risk factors, such as grade, age, stage and diet on early versus late EC stage. Methods: Participants were women from 3 hospitals (The Ohio State University, Walter Reed Army Medical Center, and Washington Hospital), who were suspected of having EC during a pre-surgery visit with their gynecologic oncologist. Demographic and anthropometric data were obtained from patient medical records; diet was assessed with a validated food frequency questionnaire. Logistic regression models were developed to assess the effect of BMI and other risk factors on early versus late stage EC. Results: Of 157 participants, over 60% of women were over age 55, over 60% had a BMI >30 (mean BMI=35), 72% were in early EC stages (stage 1 or 2) and 28% were in the late stages (stage 3 or 4). Over half (54%) of the patients had a well differentiated tumor versus 46% who had a moderately or poorly differentiated tumor. The average nutrient intakes were: fat consumption—52.3 grams/day, fruits—2.2/day, vegetables—1.7/day. Logistic regression analyses showed that higher BMI was significantly associated with early versus late stage EC (OR=0.40, p=0.039), after adjusting for grade. No effect was shown for age, or dietary intake of fat, fruits or vegetables. Conclusions: Women with higher BMI were more likely to be diagnosed at earlier EC stage in this study, which confirms the results of past studies. Lack of significance of dietary factors may have been due to a relatively small study sample or to possible dietary misclassification, a common problem in diet studies. Future studies should confirm these findings in diverse populations and continue to assess modifiable risk factors to determine why survival rates are poorer in obese women diagnosed with EC.	Micronutrients, Genetic Polymorphisms of One-Carbon Metabolism and Liver Cancer in a Chinese Population Chang SC, Lu QY, Mu, LN, Cai L, Jiang QW, Ding BG, Yu SZ, Heber D, Zhang ZF PURPOSE: Imbalance of the one-carbon metabolic pathway may induce abnormal DNA synthesis and aberrant DNA methylation leading to liver carcinogenesis. Few studies have investigated the associations between promoter hypermethylation, micronutrients, and gene polymorphisms of the one-carbon metabolism pathway, in liver cancer. METHODS: A population-based case-control study was conducted in Taixing, China, consisting of 204 newly diagnosed liver cancer cases and 415 healthy population controls. Plasma folate and vitamin B12 (B12) were quantified by Quantaphase II radioassay and plasma homocysteine (Hcy) was quantified by chemiluminescent immunoassay. MTHFR C677T, MTR A2756G, MTRR C524T, and MTRR A66G SNPs were genotyped using either PCR-RFLP or Taqman based assays. APC and CDH1 gene promoter hypermethylation were measured using fluorescence-based real-time Methylation Specific PCR. RESULTS: We observed higher plasma folate inversely associated with liver cancer ($p = 0.01$) when adjusting for potential confounding factors. Associations were observed among HBsAg positive individuals and people with higher plasma aflatoxin albumin adducts. Plasma B12 was strongly associated with liver cancer ($p<0.0001$), with a 10-fold odds among people in the highest quartile compared to those in the lowest. More than multiplicative interaction is suggested between low folate and high B12 on the odds of liver cancer (OR interaction, 2.87; 95%CI, 1.02-8.09). The MTHFR677 any T genotype was positively associated with liver cancer among people with higher plasma B12. Among non-alcohol drinkers, the G allele of MTR2756 and MTRR66 were inversely associated with liver cancer. Inverse associations between MTRR524 any T genotype and liver cancer was observed among individuals with higher plasma Hcy. No obvious association was found between APC or CDH1 promoter hypermethylation and liver cancer. CONCLUSION: Our results suggested that B12, folate and genetic polymorphisms involved in the one-carbon metabolism pathway may play an important role in the development of liver cancer in Chinese population.

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Physical activity, body size, and breast cancer risk among older, postmenopausal women on Long Island, NY. P. Bradshaw, S. Shantakumar, R. Cleveland, S. Eng, M. Terry, S. Teitelbaum, A. Neugut, M. Gammon. Women 65 years of age and older comprise over 40% of all incident breast cancer diagnoses in the U.S., yet few studies have focused on identifying risk factors for the disease among women in this older age group. We investigated whether lifestyle factors, including physical activity, body size, alcohol intake and cigarette smoking, differentially affect breast cancer risk, when women are categorized by age and menopausal status. Our analyses use data from a large population-based case-control study conducted on Long Island, NY, and include 1,478 incident invasive or in situ breast cancer cases and 1,493 controls between ages of 20-98 with known menopausal status at diagnosis. Separate logistic regression models were used to estimate effects among subgroups of women defined as premenopausal (n=968), younger postmenopausal (postmenopausal and < 65 years of age, n=1,045), and older postmenopausal (postmenopausal and >=65 years of age, n=958) adjusting for age and relevant covariates. We observed a 40% reduction in risk for lifetime average physical activity among older postmenopausal women (odds ratio (OR) comparing at least 2.7 hours per week to inactivity: 0.60, 95% confidence interval (CI): 0.42-0.86), but not among younger postmenopausal women (OR: 1.00, 95% CI: 0.70-1.43). For weight gain since age 20 years, we noted a two-fold increase in risk among older postmenopausal women (OR comparing highest quartile of gain to weight maintenance: 2.07, 95% CI: 1.29-3.34), but the effect was less pronounced among younger postmenopausal women (OR: 1.13, 95% CI: 0.71-1.80); a similar pattern was found for BMI 1 year prior to diagnosis. Results for smoking and alcohol consumption did not differ markedly by subgroup, with little or no effect observed for smoking and a modest increase associated with moderate alcohol intake for breast cancer diagnosed before or after age 65 years. Our findings suggest that, to reduce breast cancer risk among women 65 years and older, maintenance of body size and an active lifestyle become increasingly important as a woman ages.	Calorie restriction inhibits the development of pancreatic cancer through an IGF-1-dependent pathway. LM Lashinger, L Malone, EA Williams, SN Perkins, A Pavone, SM Fischer, and SD Hursting Recent epidemiologic evidence has established that obesity is an important risk factor for pancreatic cancer, although the underlying mechanisms have not been identified. Calorie restriction (CR), a strategy that prevents obesity, has potent anti-cancer effects in a variety of tumor types. We tested the effects of dietary modulation in BK5.COX-2 transgenic mice which display spontaneous pancreatic ductal lesions that lead to pancreatic ductal adenocarcinoma in response to cyclooxygenase (COX)-2 overexpression. We have found that calorie restriction (CR) significantly protects against these lesions, while control (CON) and high-fat (HF) diets do not. We hypothesized that the anti-tumorigenic effects of CR were due to reduced signaling through the Insulin-like Growth Factor (IGF)-1 pathway. Analyses were performed on tissues collected in this study, in which 6-to-8-week-old wild-type and BK5.COX-2 mice were placed on one of three diet regimens for 14 weeks (n=12/group): CON (10 kcal% fat, ad libitum (AL); CR (30% of CON calorie intake); or HF (60 kcal% fat, AL). CR mice, relative to the CON and HF-fed mice, demonstrated a significant reduction in serum levels of IGF-1 irrespective of genotype. In addition, CR decreased protein expression of phosphorylated and total forms of IGF-1R, Akt, mTOR, and p70/S6K in the pancreas of BK5.COX-2 mice. The importance of IGF-1 was examined by injecting JC101 cells, a cell line derived from BK5.COX-2 ductal lesions, into 6-to-8-week-old liver-specific IGF-1-deficient (LID) (n=15) transgenic mice or floxed IGF-1 littermate controls (LC) (n=15). The LID mice displayed a 65% reduction in serum IGF-1 levels and reduced pancreatic tumor burden (0.23±0.04 g/mouse) relative to LC mice (0.71±0.10 g/mouse). In summary, either dietary or genetic reduction of circulating IGF-1 levels resulted in dramatic reductions in the development of pancreatic cancer. These findings provide the basis for future translational studies targeting the IGF-1 pathway, possibly through lifestyle or pharmacologic approaches, to prevent obesity-related pancreatic cancer.

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Food-frequency questionnaire (FFQ) based estimates of total antioxidant capacity and risk of non-Hodgkin lymphoma (NHL) Cerhan JR, Holtan SG, O'Connor HM, Fredericksen ZS, Liebow M, Macon WR, Wang AH, Slager SL, Habermann TM, Call TG. Background: Dietary antioxidants have been hypothesized to protect against NHL. The Oxygen Radical Absorbance Capacity (ORAC) assay measures total antioxidant capacity, as estimated by the peroxy radical scavenging activity of individual foods. The ORAC assay also accounts for synergism between substances within a food. We tested the hypothesis that higher FFQ-based ORAC values are associated with a lower risk of NHL and the common subtypes of diffuse large B cell, follicular, and chronic lymphocytic leukemia/small lymphocytic lymphomas. Methods: We evaluated this hypothesis in a clinic-based study of 416 newly diagnosed NHL cases and 926 frequency-matched controls enrolled at the Mayo Clinic from 2002-2007. Usual diet two years before diagnosis/enrollment was assessed using a self-administered, 128-item FFQ, which was linked to the newly developed ORAC database for 275 foods (www.ars.usda.gov). Unconditional logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CI), adjusted for age, sex, residence, and total energy. All case pathology was centrally reviewed, and NHL subtype-specific risks were estimated using polychotomous logistic regression. Results: The mean age at diagnosis was 60.8 years for cases and 57% were male; for controls, the mean age at enrollment was 60.8 years and 54% were men. NHL risk was inversely associated with total ORAC (OR for highest versus lowest quartile, 0.68; 95% CI 0.47-0.98; p-trend=0.03). This inverse association was somewhat stronger for lipophilic-ORAC (OR=0.48; 95% CI 0.32-0.72; p-trend<0.001) compared with hydrophilic ORAC (OR=0.67; 95% CI 0.46-0.98; p-trend=0.01), although these two measures were correlated (r=0.67). Further adjustment for education, family history of NHL, smoking, alcohol use, and BMI did not alter these results. There was little heterogeneity by NHL subtype. Conclusions: This is the first study to show that diets high in antioxidants as measured by the FFQ-ORAC are inversely associated with risk of NHL.	A Randomized Clinical Trial Evaluating Online Interventions to Improve Fruit and Vegetable Consumption. Johnson CC, McClure J, Calvi J, Divine G, Stopponi M, Rolnick S, Heimendinger J, Tolsma D, Resnicow K, Campbell MK, Strecher V, Alexander GL. Purpose: Accumulating evidence has linked diet to a number of chronic diseases including cancer, prompting calls for innovative dietary interventions and increasing intake of fruits and vegetables (FV). Less than 25% of US adults eat five servings of FV per day, as previously recommended by the National Cancer Institute; far fewer meet current guidelines of 5-9 servings per day. Methods: We assessed change in FV intake among a population-based sample, comparing an online untailored program with a tailored behavioral intervention, with and without motivational interviewing-based counseling via email. This trial was conducted through the HMO Cancer Research Network, an NCI consortium of currently 14 research organizations affiliated with nonprofit integrated health care delivery systems, and in collaboration with the Center for Health Communications Research at the University of Michigan. A three arm randomized controlled intervention trial was conducted, enrolling members aged 21-65 years from five health plans in Seattle, Denver, Minneapolis, Detroit and Atlanta. Participants reported FV intake at baseline and at three, six and 12 month follow-ups. Mean change in FV servings per day was assessed at 12 months post baseline, using a validated self-report FV food frequency questionnaire. Results: Of 2,540 trial participants, 80% were followed up at 12 months. Overall baseline mean FV intake was 4.4 servings per day. Average FV servings increased by >2 servings across all arms (p<0.001), with the greatest increase (+2.8 servings) among participants receiving the tailored intervention plus email counseling (p=0.05 compared to control). Overall program satisfaction was high. Conclusions: This online nutritional intervention was well-received, convenient, easy to disseminate, cost effective and associated with sustained dietary change. Such programs have promise as population-based dietary interventions.

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Defining the Epidemiology of Myelodysplastic Syndromes (MDS). Y Du, J Fyzek, M Sekeres, E Taioli The myelodysplastic syndromes (MDS) include a diverse group of diseases in which the production of blood cells by the bone marrow is disrupted. Different classification systems are used to distinguish subtypes and guide treatment. There has been a Renaissance over the past decade in our understanding of the pathobiology of MDS, and of therapeutic options. In spite of this, little is known about the epidemiology, including risk factors and population variations of MDS. Based on a comprehensive search of existing studies and other clinical and epidemiological data, the authors reviewed the role of demographics (age, gender, race, and geographic variation), genetic factors, environmental/occupational exposures, life-style factors, and treatment for other cancer in MDS risk. Smoking and alcohol consumption are two major life-style risk factors that have been intensively studied over the past decades, but the results are still inclusive. A few studies explored the association between Immune-mediated phenomena and inflammatory pathways and MDS. An emerging line of research in MDS is focused on biomarkers. Finally, an etiological model is proposed in the aim of providing effective prevention and selecting optimal treatments.	Do Smoking and Obesity Explain Pancreatic Cancer Racial Disparities? L Arnold, A Patel, Y Yan, E Jacobs, M Thun, E Calle, G Colditz Background: U.S. Blacks suffer 33% more pancreatic cancer deaths than Whites, a disparity that persists across gender; mortality is 28% greater in Black men and 38% greater in Black women than in their White counterparts. It is suggested that smoking, diabetes, and family history explain the male racial disparities, but prospective analyses are warranted. Methods: From 1984–2004, there were 6,243 pancreatic cancer deaths among the 48,525 Blacks and 1,011,864 Whites in the Cancer Prevention Study II (CPS-II) cohort, a prospective study of cancer mortality. Multivariate Cox proportional hazards modeling was used to generate hazards ratios for known (e.g. smoking, diabetes, family history) and suspected (e.g. BMI, cholecystectomy, diet, physical activity, and alcohol) risk factors. Population attributable risks (PARs) were computed and their impact on age-standardized death rates evaluated. Results: Blacks had a 42% increased risk of pancreatic cancer mortality (HR=1.42, 95% CI 1.28–1.58). Cigarette smoking increased risk by >60% in both races. Although Blacks smoked less intensely, risks were similar to Whites (Blacks: HR=1.67, 95% CI 1.28–2.18; Whites: HR=1.82, 95%CI 1.7–1.95), with a stronger impact in women than men. Obesity was significantly associated with increased risk in Black men (HR=1.66, 95% CI 1.05–2.63), White men (HR=1.42; 95% CI 1.25–1.60) and White women (HR=1.37; 95% CI 1.22–1.54); results were null in Black women. The PAR due to smoking, family history, diabetes, cholecystectomy, and overweight/obesity was 24.3% in Whites and 21.8% in Blacks. Conclusions: CPS-II includes the largest number of pancreatic cancer cases available for analysis to date. Smoking and overweight/obesity were strongly associated with pancreatic cancer in Whites and Blacks. The role of overweight/obesity is substantial, and variation in the impact of BMI and smoking underscores the need for studies on the race-sex level. The inability to attribute excess disease in Blacks to accepted risk factors, even when combined with suspected risks, points to yet undetermined factors that play a role in the disease process.

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Association between BMI, change in BMI over a lifetime, and upper aerodigestive tract (UADT) cancers in the ARCAGE study Park SL, Lee YC, Marron M, Agudo A, Ahrens W, Barzan L, Bencko V, Benhamou S, Black R, Bouchardy C, Canova C, Castellsague X, Conway DI, Healy CM, Holcátová I, Kjaerheim K, Lagiou P, Lowry RJ, Macfarlane TV, Macfarlane GJ, McCartan BE, Merletti F, Pohlabeln H, Richiardi L, Simonato L, Sneddon L, Talamini R, Trichopoulos D, Znaor A, Brennan P, Hashibe M Previous studies have reported a positive association between low body mass index (BMI <18kg/m2) and upper aerodigestive tract (UADT) cancer risk; and an inverse association with high BMI (≥25kg/m2). Examining change in BMI over a lifetime may clarify these previous observations. We used data from 2046 cases and 2173 controls from10 European countries (ARCAGE study) to investigate the relationship between BMI and adult change in BMI on UADT cancer risk. Odds ratios (OR) and 95% confidence intervals (CIs) were estimated for associations between BMI at 3 time intervals and BMI change on UADT cancer, adjusting for center, age, sex, education, fruit and vegetable intake, smoking, and alcohol consumption. We observed positive associations between BMI<18kg/m2 and UADT cancer, inverse associations between BMI≥ 25kg/m2 for BMI at interview-and 2 years prior and no association with BMI at 30 years of age. BMI decrease (BMI loss<5%) vs. BMI stability (-5% ≤BMI change<5%) between age 30 to 2 years prior to study entry showed no overall association with UADT cancer (OR=1.12 95%CI=0.84, 1.49). A BMI increase of >5% was inversely associated with UADT cancers (OR=0.72; 95%CI=0.59, 0.88). Suggestive associations between oral-oropharyngeal cancer and BMI change possibly indicate preclinical disease status. When stratified by smoking, and by drinking, association with BMI change was restricted to drinkers and smokers. In conclusion, BMI gain is inversely associated with UADT cancers and among current smokers and alcohol drinkers, weight change may serve as a proxy for cancer development and/or presence of UADT cancers.	Case-control study of smoking and non-melanoma skin cancer Iannacone M, Giuliano A, Fenske N, Cherpelis B, Sondak V, Jonathan K, Rollison D Objective: Findings for an association between smoking and non-melanoma skin cancer (NMSC) have been inconsistent across previous studies, due in part to differences in participant selection and exposure assessment. The objective of the study was to further investigate smoking as a risk factor for NMSC in a well-characterized clinic-based population. Methods: We conducted a case-control study of 348 histologically confirmed NMSC cases (212 BCC and 136 SCC) recruited from the dermatology clinic at the University of South Florida (USF). Controls were patients undergoing skin cancer screening exams who screened negative for NMSC and had no history of skin cancer (n=336). Information on smoking and skin cancer risk factors was obtained from self-administered questionnaires. Associations between smoking and NMSC were estimated by odds ratios (OR) and 95% confidence intervals (CI) calculated using logistic regression, adjusting for age, race, ethnicity, education, history of sunburns, occupational sun exposure, eye, hair, and skin color, alcohol use, and protective sun behaviors. Results: Overall, ever smoking was associated with an increased risk of NMSC (OR=1.5, 95% CI=1.0-2.2), including BCC (OR=1.3, 95% CI=0.9-2.0) and SCC (OR=2.2, 95% CI=1.2-3.8). As compared to never smoking, current smoking was more strongly associated with NMSC (OR=6.1, 95% CI=2.6-14.3) than former smoking (OR=2.0, 95% CI=1.3-3.2), particularly for SCC (current smoking: OR=11.4, 95% CI=3.8-34.5; former smoking: OR=2.5, 95% CI=1.3-4.7). Dose-response relationships were observed for both BCC and SCC, with trends for SCC being statistically significant. Specifically, smoking ≥20 years was associated with both BCC (OR=1.9, 95% CI=1.1-3.2; p for trend=0.06) and SCC (OR=2.7, 95% CI=1.4-2.3; p for trend=0.004), as was smoking ≥20 cigarettes per day (BCC: OR=1.6, 95% CI=0.9-2.7, p for trend = 0.08; SCC: OR=2.4, 95% CI=1.2-4.8, p for trend = 0.01) and ≥20 pack-years of smoking (BCC: OR=1.7, 95% CI=1.0-3.1, p for trend = 0.07; SCC: OR=2.5, 95% CI=1.2-5.1, p for trend = 0.01). Conclusion: Smoking is an independent risk factor for NMSC, particularly SCC.

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Low Serum Levels of 25-Hydroxyvitamin D (25OH D) are Associated with Increased Risk of Clear Cell Renal Cell Carcinoma Alexander S. Parker, PhD, Rebecca B. McNeil, PhD, Timothy J. LeRoy, MD INTRODUCTION AND OBJECTIVE: Vitamin D deficiency has been linked with an increased risk of several human cancers; however, this hypothesis has not been adequately explored for clear cell renal cell carcinoma (ccRCC) specifically. This is noteworthy given that preclinical studies suggest that ccRCC cell lines are inhibited by the active form of vitamin D. METHODS: We analyzed 25(OH) D serum levels from 104 ccRCC cases and 71 non-cancer controls. Cases were prospectively collected as part of our Renal Mass Registry. As part of this registry, we collect detailed risk factor data (self-report questionnaire) as well as a pre-treatment, fasting blood sample. Tumor samples are reviewed by a pathologist to confirm histologic subtype and pathologic features. Controls were recruited through the Family Medicine Clinic as part of our Non-Cancer Control Registry. Each control completed the same risk factor questionnaire as the cases and provided a fasting blood sample. Controls were frequency matched to cases on age, gender and state of residence. We employed polychotomous logistic regression analyses to estimate the association of low serum 25(OH) D (< 34 ng/mL) and ccRCC status, both overall and for aggressive ccRCC specifically. RESULTS: Overall, cases had approximately 2.2 times the odds of being vitamin D deficient as controls, regardless of aggressiveness level (95% confidence interval 1.1 to 4.4). The proportional odds assumption was not violated (p = 0.27), indicating that the odds of deficiency are consistent regardless of the reference category. Adjustment for BMI, smoking history and season of serum collection did not alter our results. CONCLUSION: Our data suggest that low levels of serum 25(OH) D are associated with an increased risk of ccRCC development. Of note, our results are consistent with the findings of a previous Japanese investigation from 2000. Given the possible implications for prevention, future investigations that analyze a larger sample size and examine additional aspects of the vitamin D signaling pathway are warranted.	Loss of Expression of the Vitamin D Receptor in Renal Cell Carcinoma Alexander S. Parker, PhD, Timothy J. LeRoy1, MD, Rebecca B. McNeil, PhD Introduction and Objective: Loss of expression of the vitamin D receptor (VDR) has been implicated in the development of several human cancers; however, its role in renal cell carcinoma (RCC) remains unclear. We examined VDR expression in paired tumor and normal kidney samples from patients with clear cell RCC (ccRCC) and evaluated associations with standard pathologic features of aggressiveness. Methods: We obtained paraffin-embedded specimens from 102 consecutive patients treated with surgery at our institution for ccRCC between 2004 and 2007. Tumor and normal kidney samples were available for 88 patients; 14 had only tumor tissue available. We performed immunohistochemistry using a monoclonal antibody for VDR and quantified expression using digital image analysis (Aperio Technologies; Vista, CA). We examined the ratio of VDR expression between paired ccRCC and normal kidney. Then we evaluated the association of VDR expression with features of ccRCC aggressiveness including the SSIGN score, a multivariable scoring algorithm that predicts death from ccRCC (a higher score predicts poor outcome). Results: Sixty-four out of 88 patients (73%) had lower VDR expression in tumor versus normal kidney tissue. The median ratio of VDR expression in paired tumor versus normal tissue was 0.25 (min=0.009, max=7.5). We noted no association of VDR expression with tumor stage or grade; however, tumors with presence of necrosis had lower VDR expression than those with no presence of necrosis (3.9 vs. 6.7; p=0.03). There was some evidence that VDR expression decreased across increasing categories of SSIGN score ('Low' = 6.3, 'Moderate'= 4.7, 'High'= 3.9); however, this trend did not achieve statistical significance (p=0.4). These findings did not change when we considered the ratio of VDR in tumor versus normal kidney rather than just tumor values alone. Conclusions: While independent validation is needed, our data suggest that loss of expression of VDR is a common event in ccRCC and that lower expression levels correlate with some features of tumor aggressiveness.

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ASPO 2009

Attendee Questionnaire for Feedback

We are eager to get your feedback regarding this program so we may continue to make the Annual ASPO Meeting suit your professional needs. Please take a moment to fill out this questionnaire and leave it at the registration table, or mail it to the ASPO National Office, 330 WARF Building, 610 Walnut Street, Madison, WI 53726.

What were the most interesting parts of the meeting?

What were the weak points?

What subjects would you like to have covered in future meetings?

What should be covered in greater detail?

Do you have any suggestions for format changes?

Were you able to see and hear adequately?		YES	NO
Should ASPO have more/fewer presented papers?	MORE	FEWER	AS IS
Should ASPO continue providing concurrent sessions?		YES	NO

General suggestions (format, speakers, food, etc…)

Thank you for your time!
James Marshall, President