



WOMEN'S
HEALTH
INITIATIVE

Perspectives from the NIH: WHI – A Special Interdisciplinary Project

Elias A. Zerhouni, MD

Director, National Institutes of Health



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Vivian Pinn, MD

Director, Office of Research on
Women's Health



THE WHI LEGACY TO FUTURE TO GENERATIONS OF WOMEN

**Vivian W. Pinn, M.D.
Associate Director for Research on Women's Health
Director, The Office of Research on Women's Health
NIH**

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The Office of Research on Women's Health has been and continues to be very proud of the monumental interdisciplinary and collaborative effort of women and men of the NIH community and the extramural community in this landmark study of post menopausal women's health, the Women's Health Initiative.

That this study is recognized around the world is a tribute to not only the ambitiousness of the magnitude of this study that has been realized through the years of effort of the researchers across our nation, and most importantly, the women who participated, but also a tribute to the tremendous effort that went into the planning, implementation, funding, recruitment and retention of women as participants, and carrying out such a tremendous effort.

The expansive volume of scientific information that has been garnered and is yet to be defined brings an excitement to women's health with full appreciation of life span issues that is unprecedented.

When this conference was first proposed, there were those who doubted there would be much interest, but the attention to this gathering of such diverse segments of our scientific, health care, advocacy, media and

grass roots community just attests to the importance of this study for all of us.

The Office of Research on Women's Health is pleased to serve as a sponsor of the conference because of the real and lasting significance of all aspects of this study. As you will hear, this study was put forward and became a reality because of the vision and determination of Dr. Bernadine Healy as the First woman director of the NIH.

With the Office of Research on Women's Health in its very early stages of designing and implementing programs for research that would embrace the lifespan of women, recognizing that there are particular health concerns for women after their reproductive years was one of our central points of focus in the research agenda for women's health. In addition, there were so many questions that women had about menopause, how to approach it, how to preserve their health after menopause, and how to understand for which physicians and scientists did not possess science-based answers.

So, ORWH saw and still appreciates the remarkable gold mine of information that would be, and has become, possible through the many components of this study.

This is what research on women's health, in the scientific context, was to be about... scientific discovery that would either confirm long standing but unproven approaches to the health of women, or demonstrate, through well thought out and scientifically designed clinical trials and observational studies, that standards of medical and educational approaches to menopause need to be further examined in the context of long term studies of women.

In addition, the Office of Research on Women's Health was established in response to concerns that women be included in clinical research studies. At the time that the WHI was conceived and implemented, there were many who had serious doubts that we would ever be able to convince 'older' women, in the magnitude of numbers needed, to volunteer for such studies, much less stay in the study components for the years planned to carry out the design of the study.

Here we are in the year 2006 with so many successful lessons learned and demonstrated about how to effectively recruit and retain women, especially mature women, as participants in research studies. The ORWH is especially impressed and pleased with not only the demonstration that large numbers of women are proud to be a part of a history making study, understanding the contributions they are making, certainly providing a positive and emphatic lesson about women's interest in research about their health.

But, ORWH is also pleased with the contributions to filling in the many gaps in knowledge about the menopause transition and the health of post menopausal women as a major segment of the ongoing NIH research agenda on women's health.

And finally, ORWH also has, as part of its mandate, a directive to increase opportunities for women to enter and advance in biomedical research careers. Over the time of this study, from the original concerns that not enough women PI's were among the original center heads, to now, seeing the concerted efforts of women and men across the spectrum of scientific and medical expertise has evidenced the roles of women, as well as men, as leaders in so many aspects of women's health research.

While the WHI has answered many questions, and stimulated such intense and passionate discussion about many other remaining scientific dilemmas, there is no question that the WHI represents in an exemplary fashion the collaborative interdisciplinary and comprehensive study of women's health and for these reasons, the ORWH is so pleased to see this day arrive in the progress of this study and to be a part of this effort.

Perspectives from the NIH: WHI – A Special Interdisciplinary Project

Elizabeth G. Nabel, MD

Director, National Heart, Lung, and Blood
Institute

Director, Women's Health Initiative



Historical Overview of WHI

Bernadine Healy, MD

Health Editor and Medical Columnist,

US News and World Report

Medical Contributor,

MSNBC

Former Director,

National Institutes of Health



WHI: Key Questions and Study Design

William Harlan, MD

**Associate Director for Disease Prevention,
National Institutes of Health (1991-2001)**

**Director for Development,
Women's Health Initiative (1991-1995)**

**Consultant, ClinicalTrials.gov,
National Library of Medicine (current)**





WHI Overview

- **To answer major questions on postmenopausal women's health**
 - Cancers, heart disease, osteoporosis-related bone fractures

Vast scientific undertaking

- 161,808 participants followed 7-12 years
 - 1993-2005
 - 1,000 investigators and staff
 - 40 Clinical Centers across the U.S.
- **Cost-effective design**





Women's Health Initiative (WHI)

Clinical Trials (CT)

Diet Modification (DM)

Hormone Therapy (HT)

Calcium + Vitamin D (CaD)

Observational Study (OS)





WHI CT Sample Size, Outcomes, Follow-up

Women, aged 50-79

Total CT = 68,132

Hormone (HT) Trial

Primary Outcome: CHD

Secondary Outcomes:

Hip Fracture, Breast Cancer

HT
27,347

Average
8.4 years



WHI CT Sample Size, Outcomes, Follow-up

Women, aged 50-79

Total CT = 68,132

Diet Modification (DM) Trial

Primary Outcomes:

Breast & Colorectal Cancer

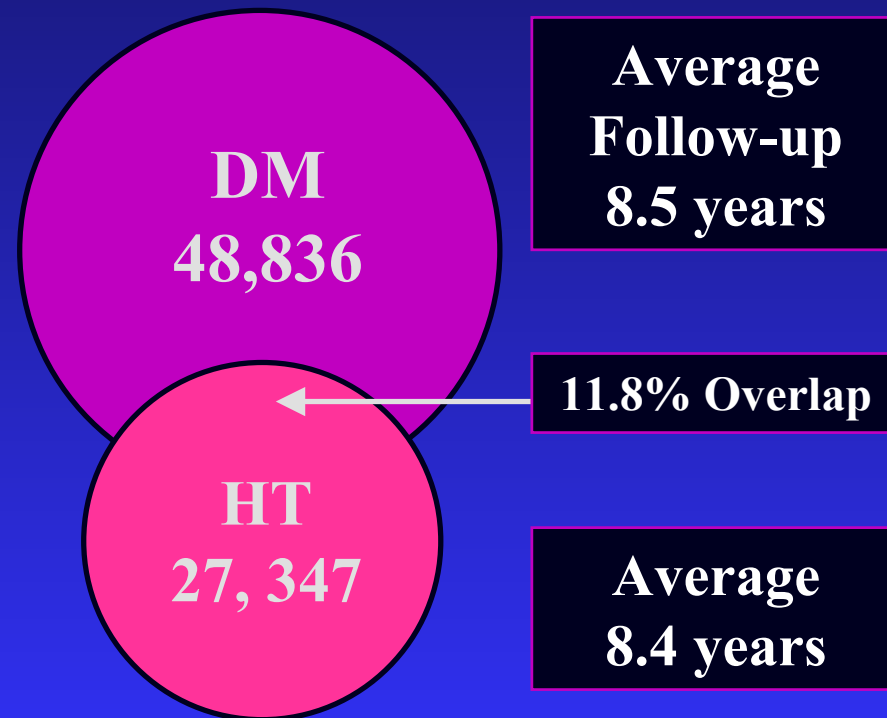
Secondary Outcome: CHD

Hormone (HT) Trial

Primary Outcome: CHD

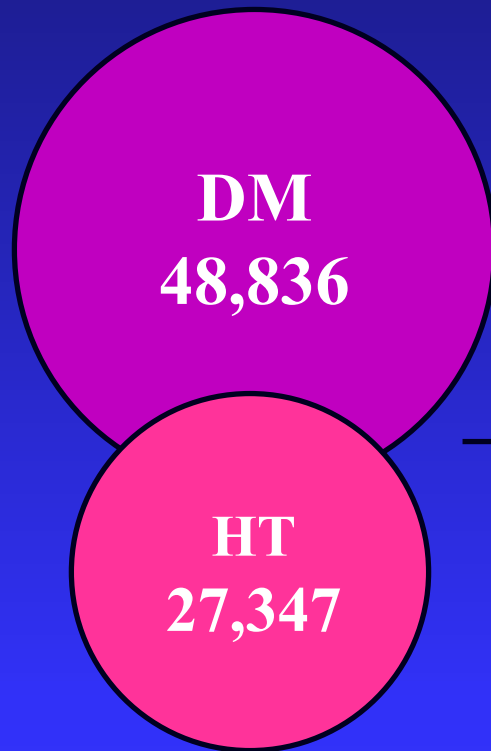
Secondary Outcomes:

Hip Fracture, Breast Cancer



WHI CaD: Outcomes, Relationship to CT

Total CT = 68,132



at 1st (or 2nd)
Annual Visit



Calcium + Vitamin D (CaD)

Primary Outcome: Hip Fracture

Secondary Outcomes:

Other Fractures, Colorectal Cancer



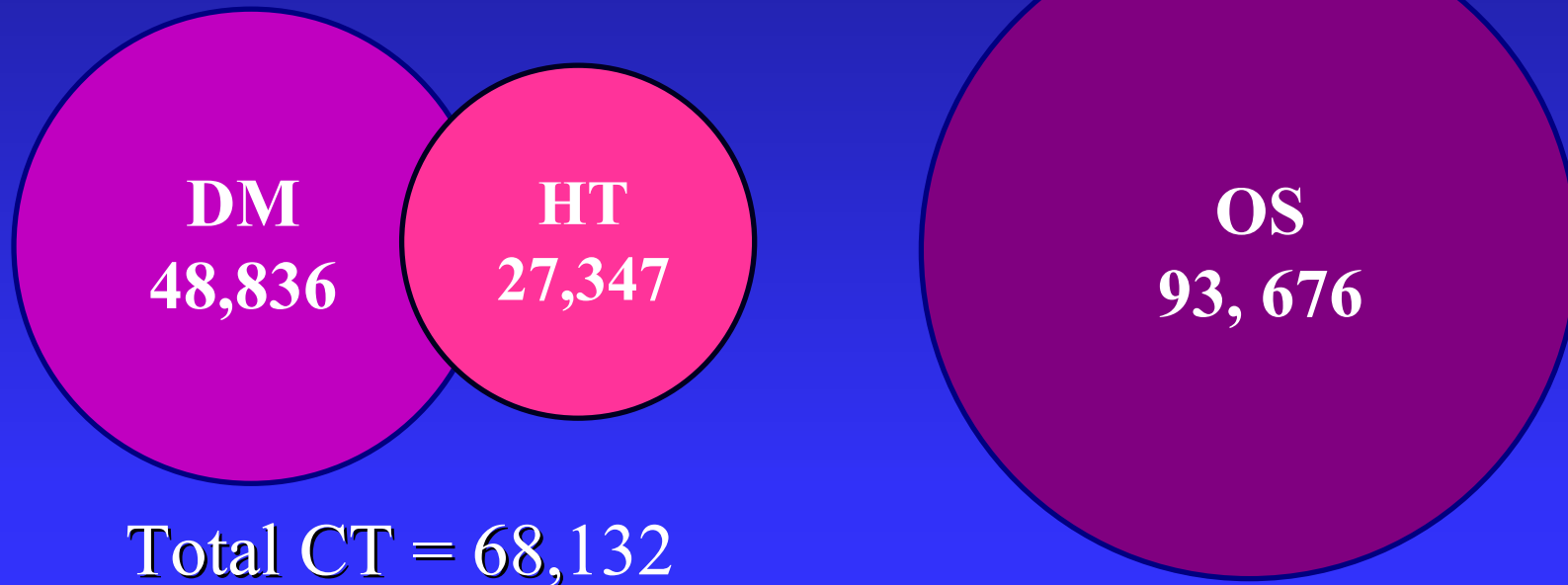


WHI: Relationship of OS to CT

Total WHI Sample 161,808

The Observational Study (OS) serves as a complement to the Clinical Trial.

Women screened for the DM or HT CT could enroll in the OS, if they were ineligible for the CT, or chose not to join either DM or HT.

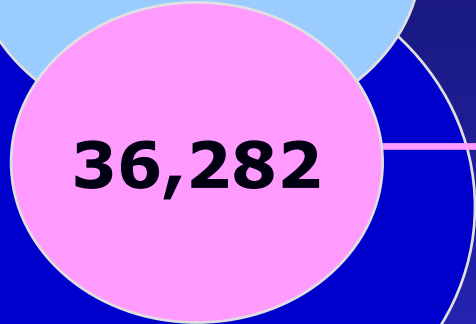


WHI is:

3 Controlled Trials



**Hormone Therapy Trial:
Coronary Heart Disease & Fractures.
Adverse effect for Breast Cancer?**



**Calcium/Vitamin D Trial:
Fractures & Colorectal Cancer**



**Dietary Modification Trial:
Breast & Colorectal Cancers &
Coronary Heart Disease**


1 Observational Study



Observational Study

161,808 women total





Special Appreciation to the WHI “Field of Dreams” Team

160 NIH scientists and staff from 16 Institutes and Centers participated in the planning, evaluation, operational oversight, and fiscal monitoring of the WHI during the course of the study.

WELL DONE !



Acknowledging the WHI Participants “The Legacy of WHI” DVD

Vivian Pinn, MD

Director, Office on Research on
Women’s Health



WHI Recruitment Strategies

Judith Ockene, PhD, MEd
Principal Investigator
Worcester Clinical Center

Professor of Medicine and Chief,
Division of Preventive and Behavioral Medicine
University of Massachusetts Medical School



WHI Enrollment Goals

- ❑ Overall: 160,000+ women who were postmenopausal and willing to participate 8-12 yrs
- ❑ Specific enrollment goals for each study component
- ❑ Specific enrollment goals by age group (10% 50-54; 20% 55-59; 45% 60-69; 25% 70-79)
- ❑ Enroll minority participants in same proportion as general population



WHI Eligibility Criteria

General Criteria for Inclusion in CT and OS:

- Aged 50 to 79
- Postmenopausal
- Planning to reside in the area for at least 3 years
- Able and willing to provide written informed consent

Additional inclusion/exclusion criteria specific to each clinical trial



Recruitment Process

- ❑ Participants recruited at 40 Clinical Centers (CCs) nationwide
- ❑ CCs recruited potential participants using various strategies
- ❑ Eligibility screening: 1-4 CC visits
- ❑ CT Enrollment: Eligible and interested women randomized to intervention/control
- ❑ OS Enrollment: For women ineligible or not interested in CT



WHI Clinical Centers

- Clinical Center
- Minority Clinical Center



Clinical Center Recruitment Strategies

Mass mailing was primary method for initial contact

Each CC mailed an average of 1000-5000 brochures per month for 3-5 years; 12,000 – 60,000/yr

Addresses obtained from various lists:

DMV; Voter's registration; HMO enrollees;
Health Care and Financing Administration;
commercial mailing lists

Most clinics used a professional mailing service to assemble and mail materials



Clinical Center Recruitment Strategies

Supplemental Strategies:

- Community presentations
- Local newsletter articles and ads
- Public service announcements (TV and radio)
- Name-a-friend programs
- Health fairs
- National and local press releases
- Health care provider referrals
- Brochure placement throughout community



National Recruitment Activities



- ❑ Central development of materials (brochures, videos)
- ❑ Toll free national recruitment telephone line (1-800-54-WOMEN)
- ❑ National public awareness campaign
- ❑ Central training and support of staff
- ❑ Study-wide advisory groups





¿Qué herencia
dejará Ud.
a sus hijas
y a futuras
generaciones?

Sea Parte de la Solución

La Mujer y Su Salud

Taking Calcium and Vitamin D Supplements

May reduce your risk for
bone fractures and **Might** reduce
your risk for colon, rectal and
perhaps even breast cancer.



What Legacy
Will You Leave
Your Daughters
& Future
Generations?

Be Part of the Answer

The Women's Health Initiative

**This is one mystery any woman
over 60 can help solve.**



What role do hormones and diet play in a woman's risk of getting heart disease, breast and colon cancer, and osteoporosis? You can help find the answer by volunteering to be a study participant in the Women's Health Initiative. It's one of the



largest studies ever done on women's health. We need your help now — 1997 is the last year for women to join the study. If you're in your 60s or 70s, call today for information. And help take some of the mystery out of women's health once and for all.

be part of the answer



call 1-800-54-WOMEN

Sponsored by The National Institutes of Health

Take your place in women's history. Join today.



Here's your chance to make a big difference in the lives of women for generations to come. Join us in the Women's Health Initiative, one of the largest studies ever done exclusively on women's health issues. Together we'll help find answers about how



hormones and diet affect women's risk of heart disease, cancer and osteoporosis. If you're in your 50s, 60s or 70s, and past menopause, call today for more information. Earn a permanent place in women's history by joining this landmark study now.

be part of the answer



call 1-800-54-WOMEN

Sponsored by The National Institutes of Health

Coordinating and Monitoring Recruitment Efforts

- ❑ Recruitment Coordinator (RC) at each site and RC liaison at CCC
- ❑ Weekly national RC calls and electronic newsletter to share ideas
- ❑ Performance Monitoring Committee to monitor recruitment and provide assistance
- ❑ Use of logo, study colors, and catch-phrase on all recruitment materials



Initial Contact With WHI

During screening, women were asked how they heard about WHI:

66.7%	Mailed letter/brochure
14.0%	Newspaper / magazine article or ad
8.3%	Friend Relative
5.7%	Other
3.3%	TV public service announcement
1.1%	Radio public service announcement
.9%	Meeting



Description of WHI Cohort

Annlouise R. Assaf, PhD

Principal Investigator

Pawtucket/Fall River Clinical Center

Associate Professor of Community Health,
Brown Medical School



WHI Enrollment

Hormone Trials	27,347
Without Uterus	10,739
With Uterus	16,608
Dietary Modification Trial	48,835
Calcium/Vitamin D Trial	36,282
<hr/>	
Clinical Trials Total	68,132
Observational Study	93,676
WHI TOTAL	161,808



Description of WHI Cohort

Exclusion Criteria for CT / OS

Clinical Trial and Observational Study

- Any medical condition with predicted survival <3 yr

- Adherence or retention reasons (e.g., severe depression)

Clinical Trial

- Any invasive cancer in previous 10 yrs

- Breast cancer at any time

- MI, stroke, or TIA in past 6 months

- Chronic hepatitis or cirrhosis

- Severe hypertension

- Severely underweight



Description of WHI Cohort

Additional Exclusion Criteria for HT and DM

Hormone Trials

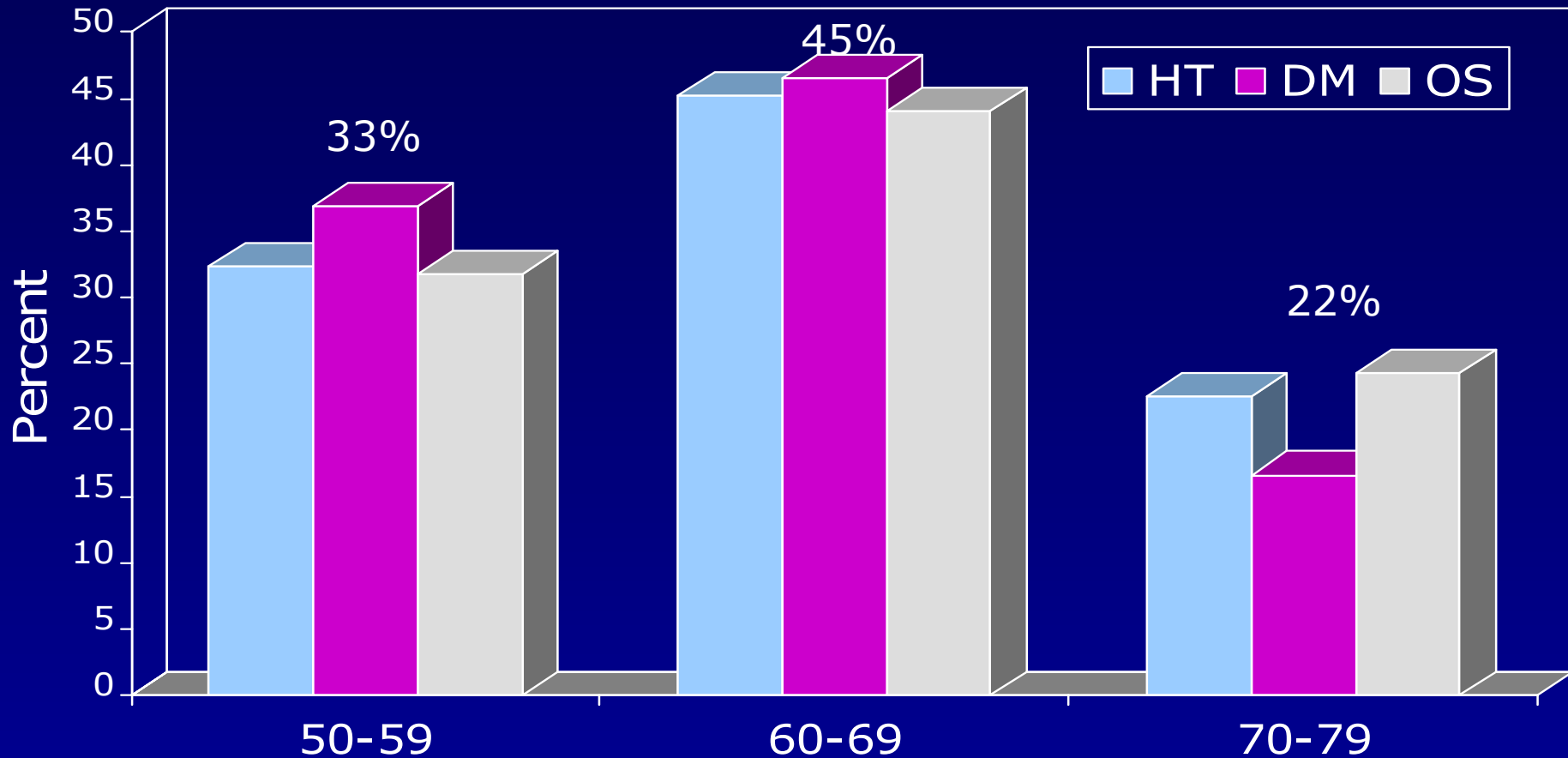
- Endometrial cancer at any time
- Malignant melanoma at any time
- History of PE or DVT
- Other safety reasons
- Inadequate adherence to placebo run-in

Dietary Modification Trials

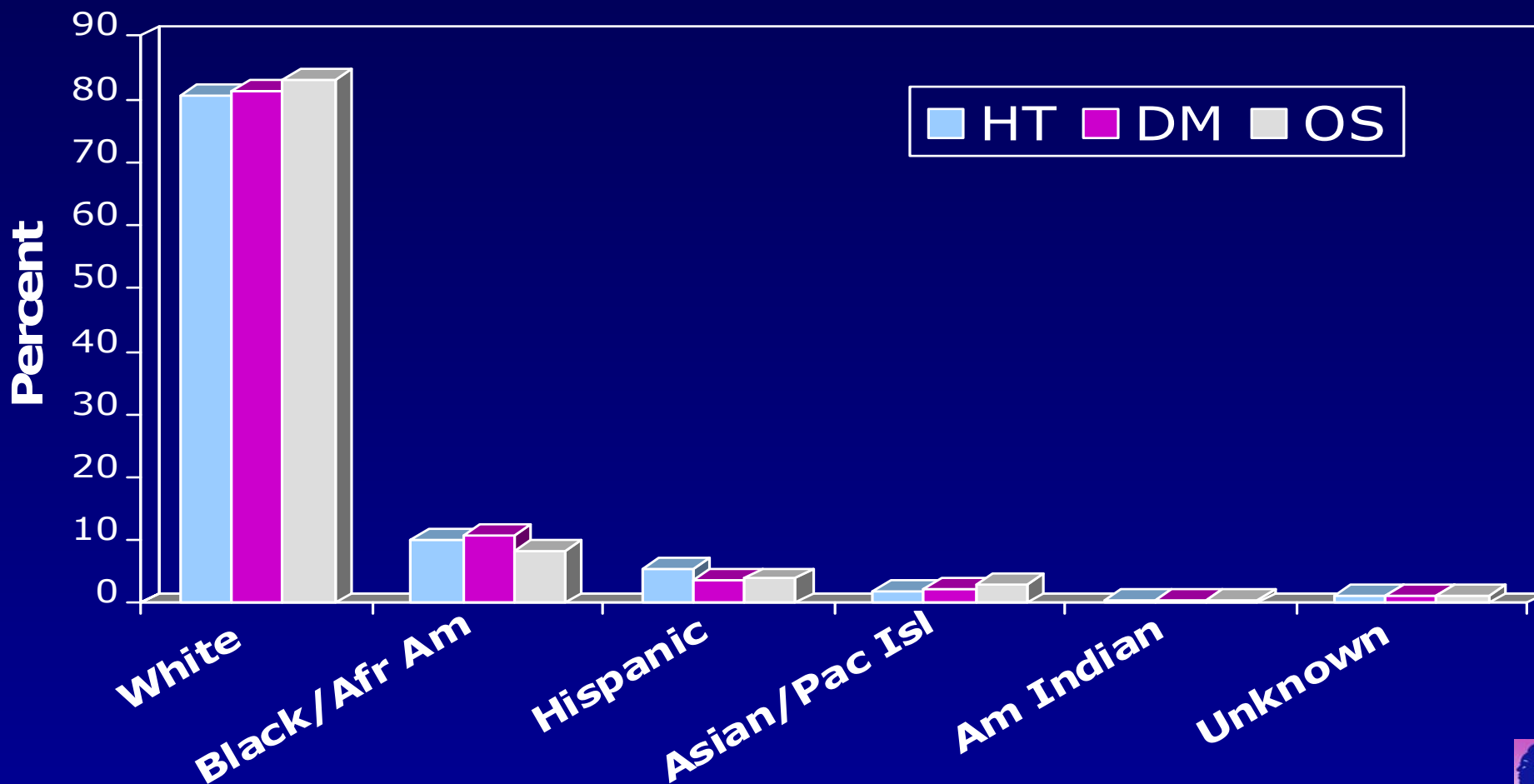
- FFQ percent calories from fat < 32%
- Dietary requirements incompatible with intervention
- On diabetic or low salt diet
- Type I diabetes
- Colorectal cancer at any time
- Unable to keep a food record



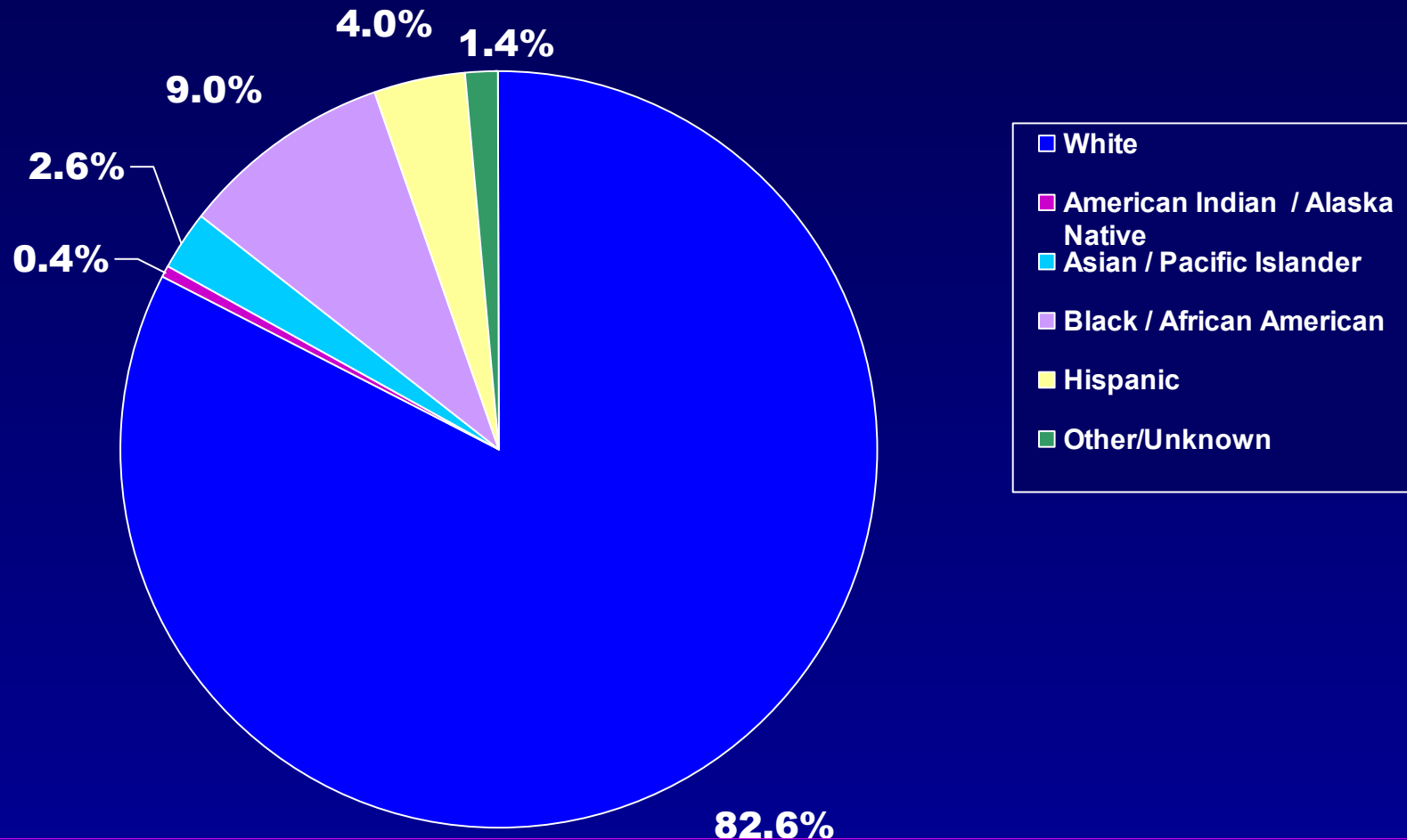
Age Groups at Baseline by WHI Component



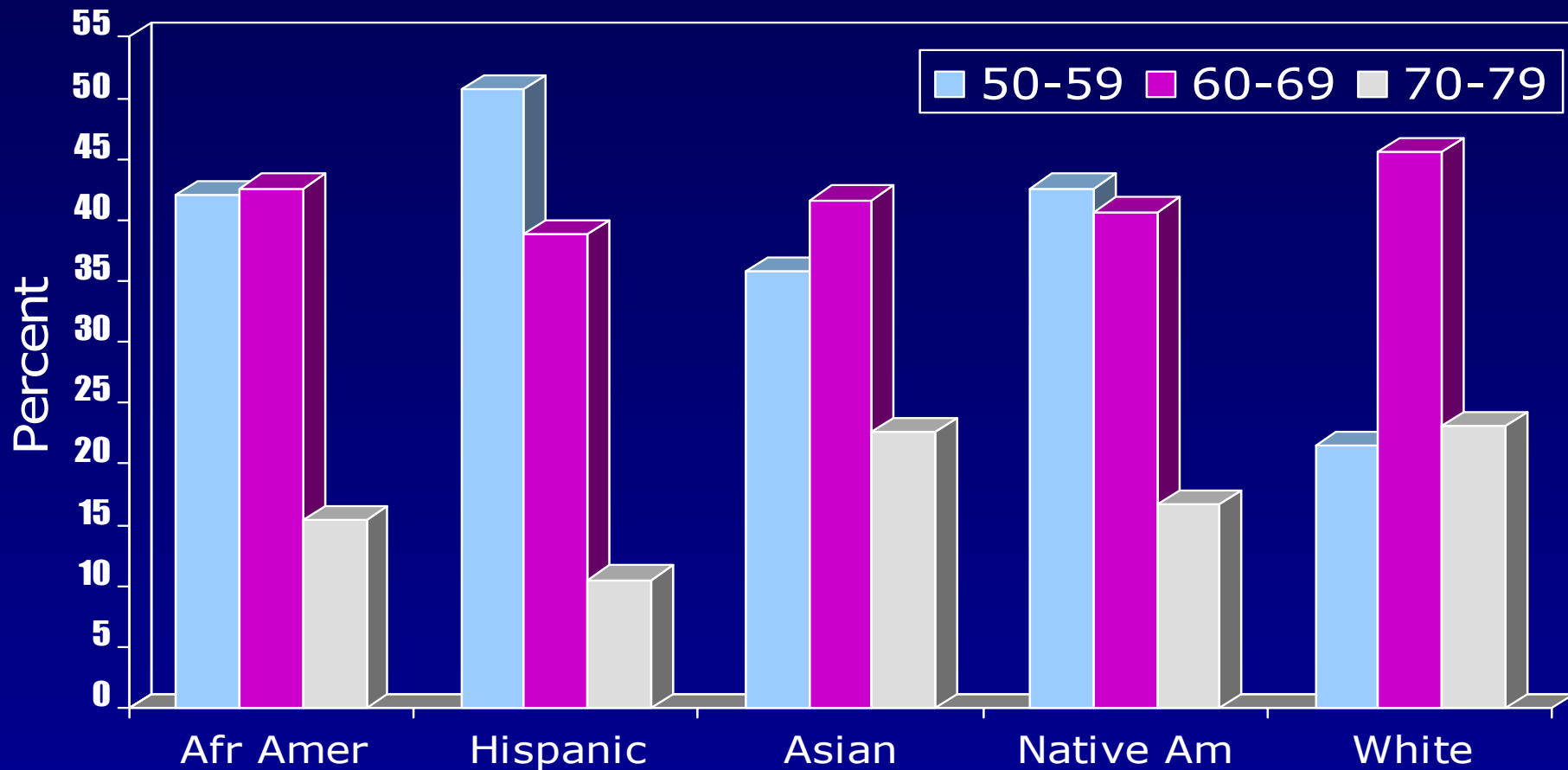
Race/Ethnicity by WHI Component



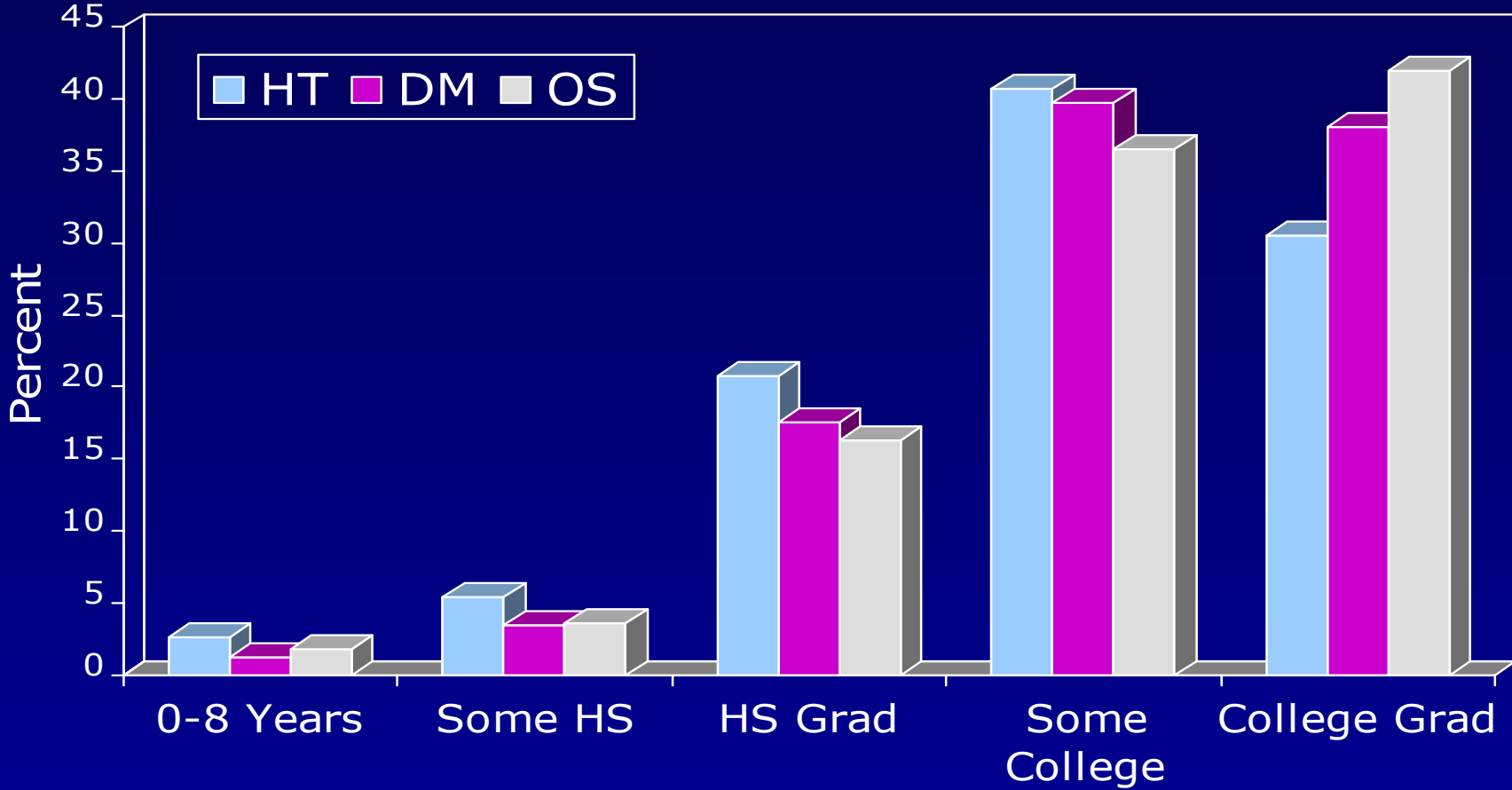
WHI Participants by Race/Ethnicity Census Category (Total enrolled = 161,808)



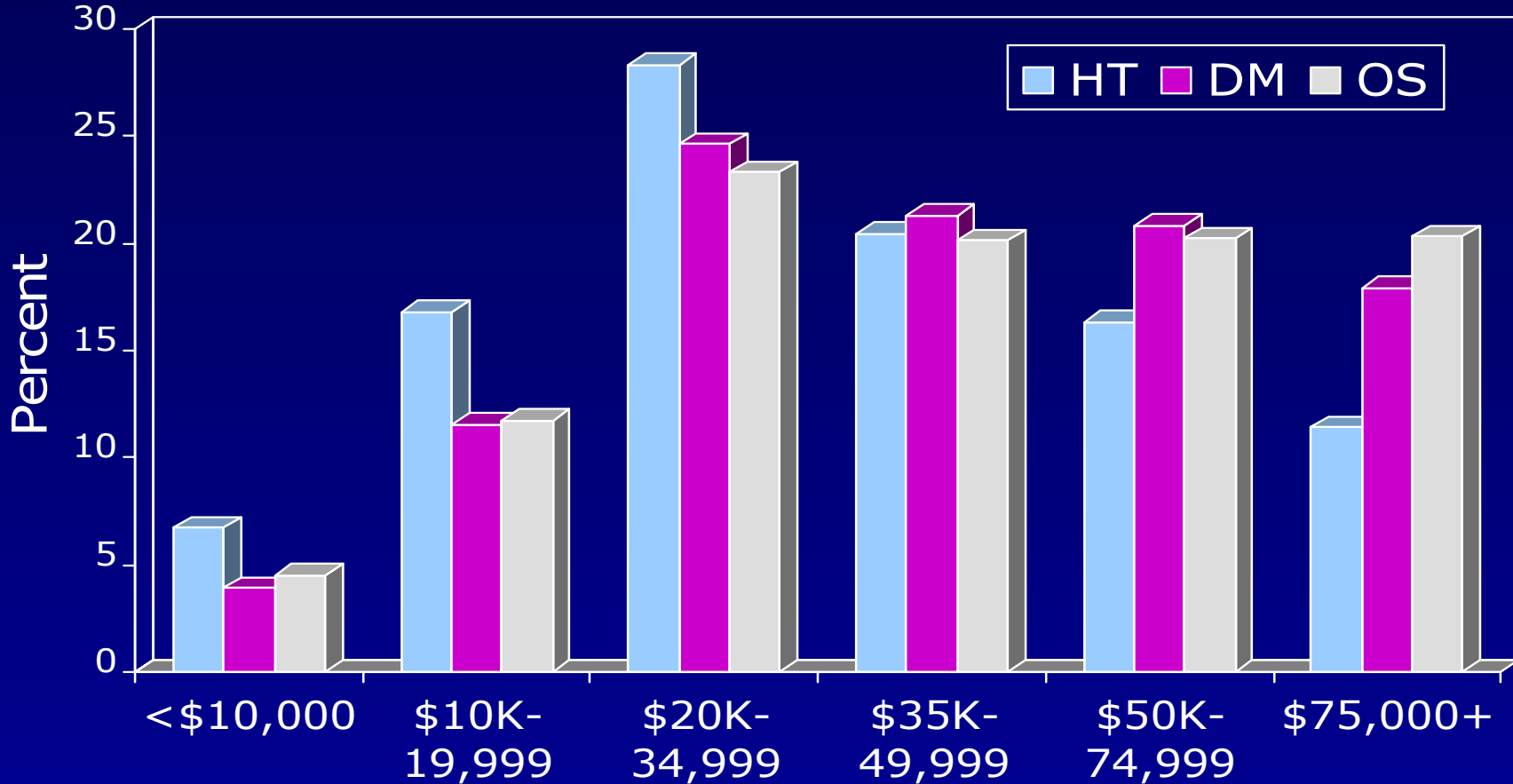
Age Group by Race/Ethnicity (Baseline)



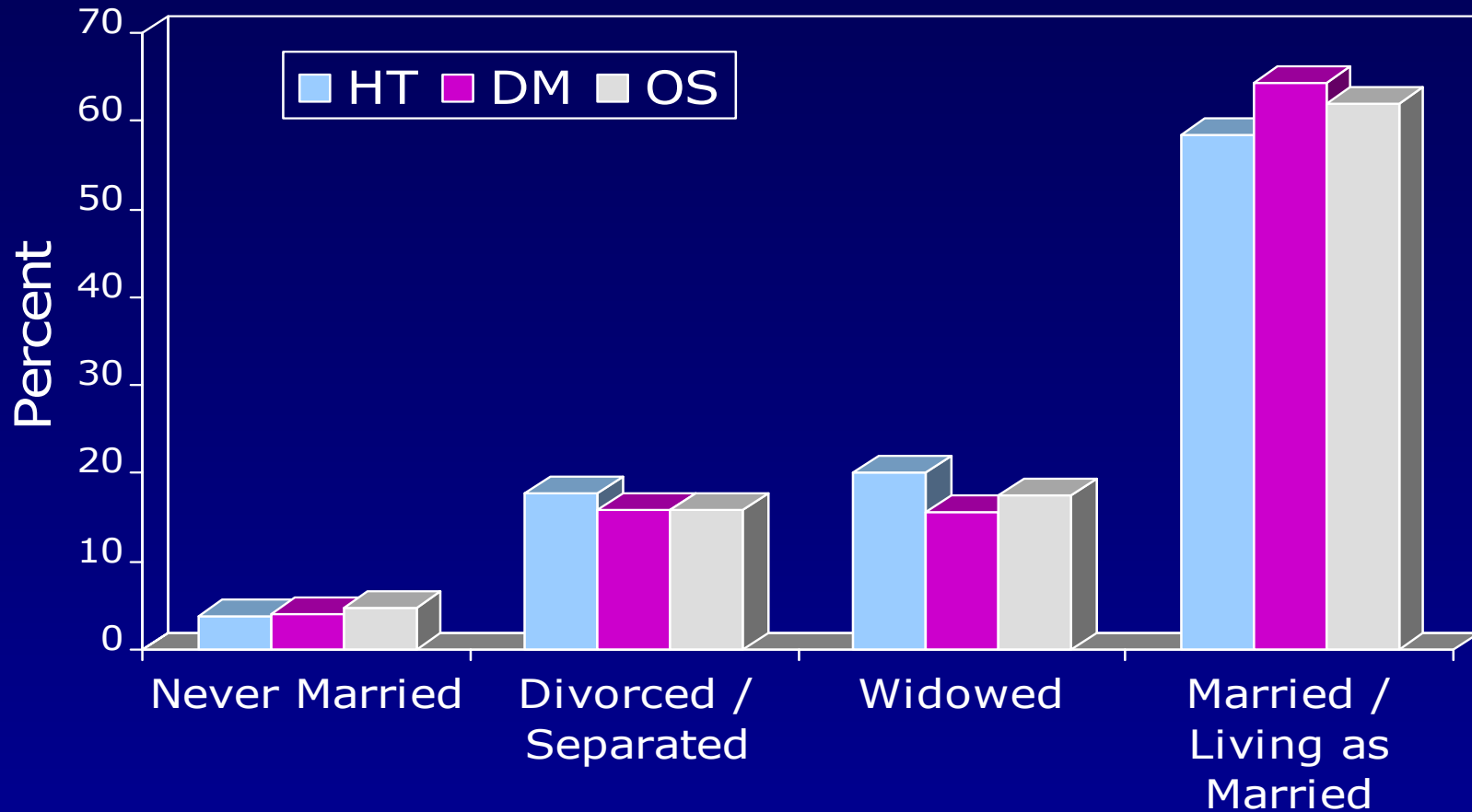
Education at Baseline by WHI Component



Income at Baseline by WHI Component



Marital Status at Baseline by WHI Component



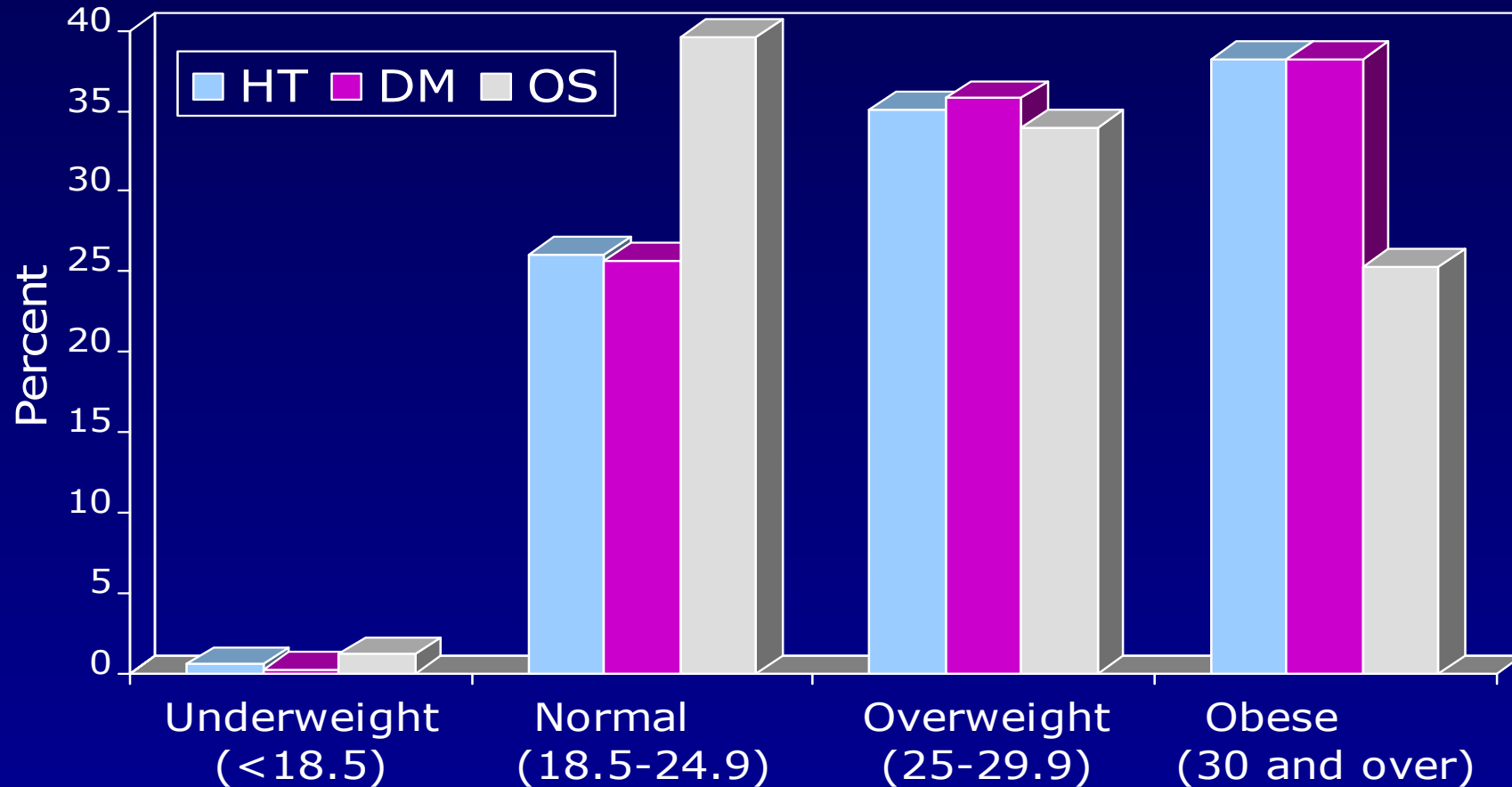
Description of WHI Cohort

J. David Curb, MD, MPH
Principal Investigator
Hawaii Clinical Center

Professor of Geriatric Medicine,
John A. Burns School of Medicine
University of Hawaii at Manoa



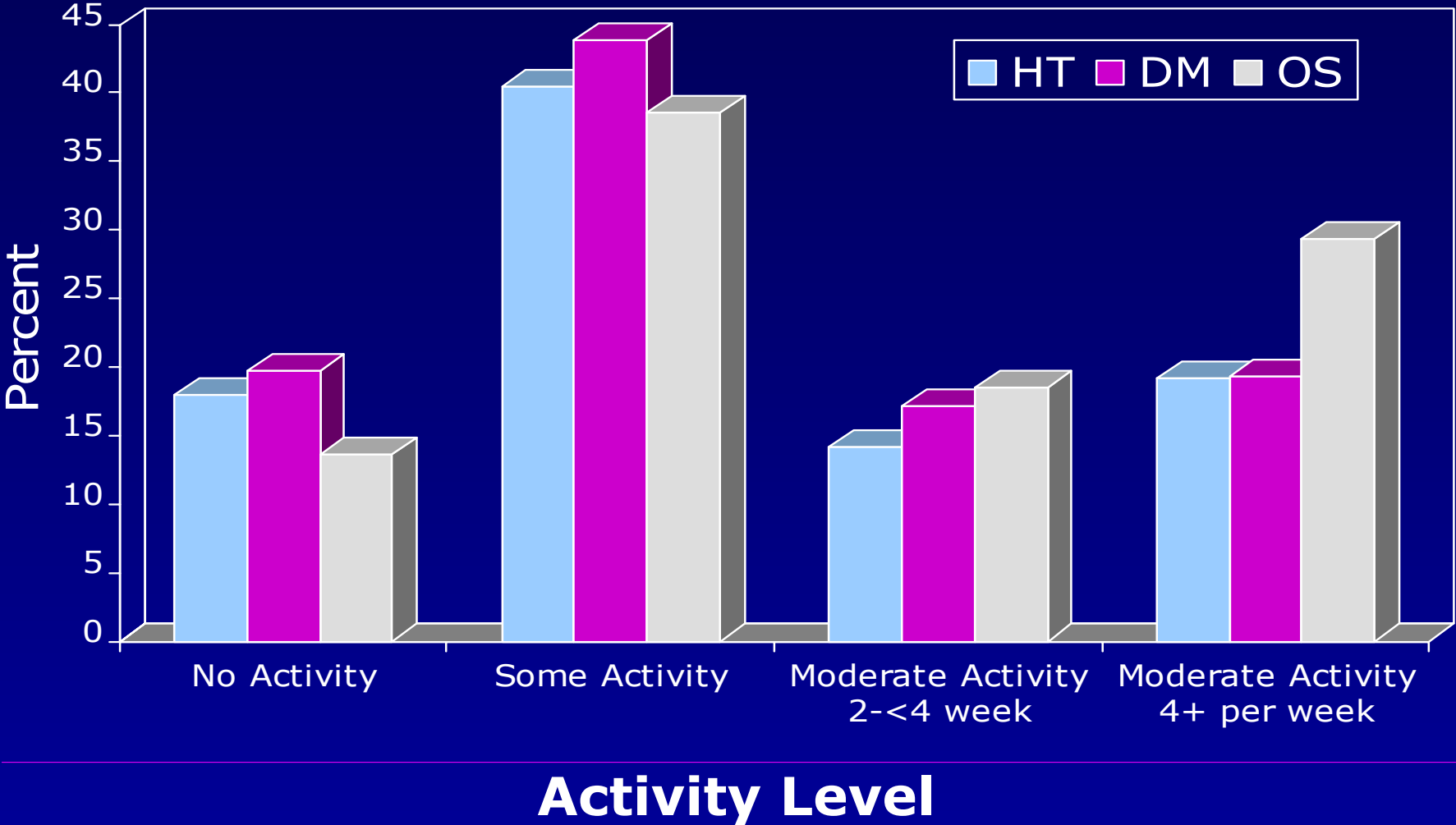
Body Weight at Baseline by WHI Component



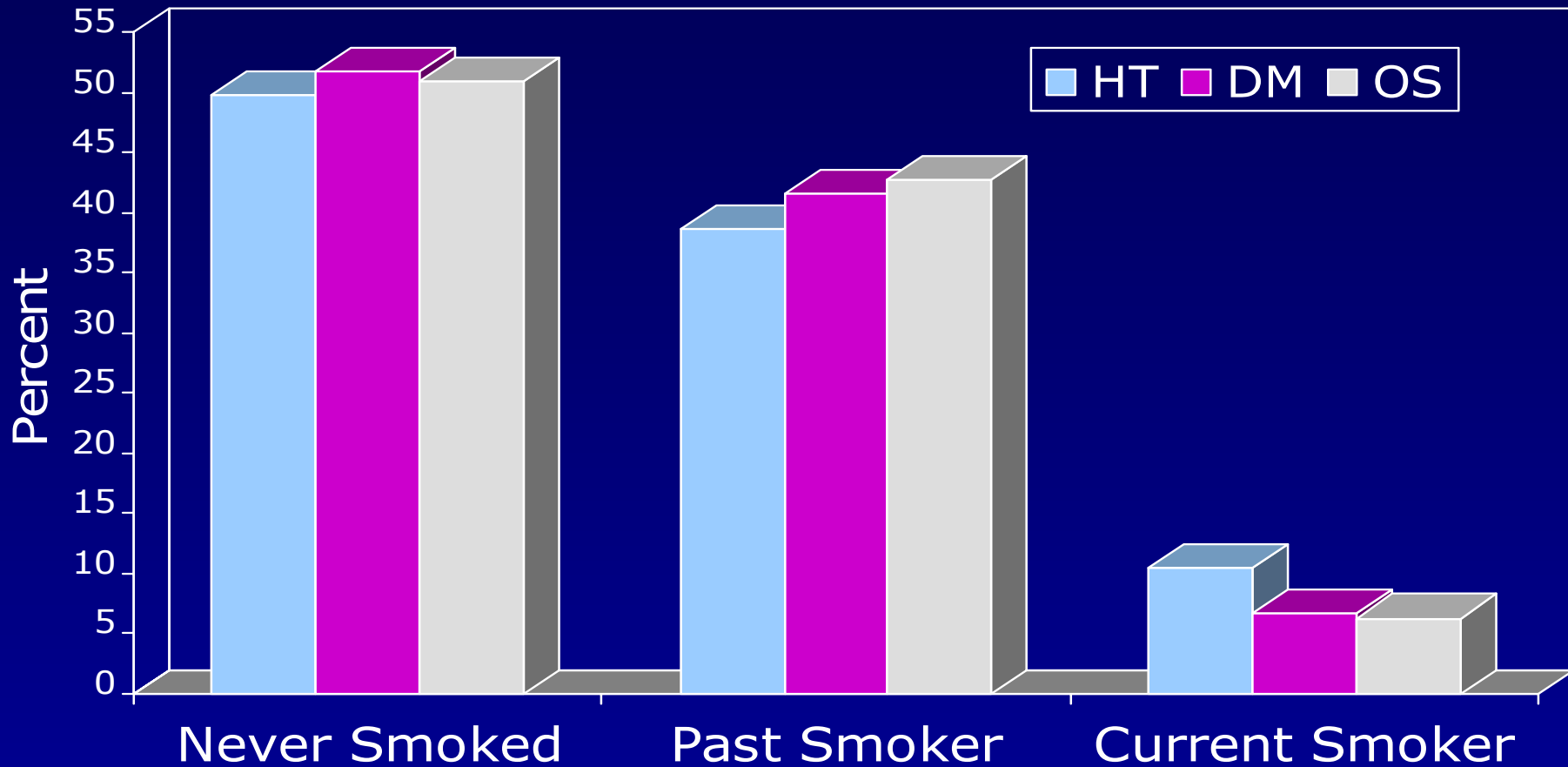
Body weight classification (BMI)



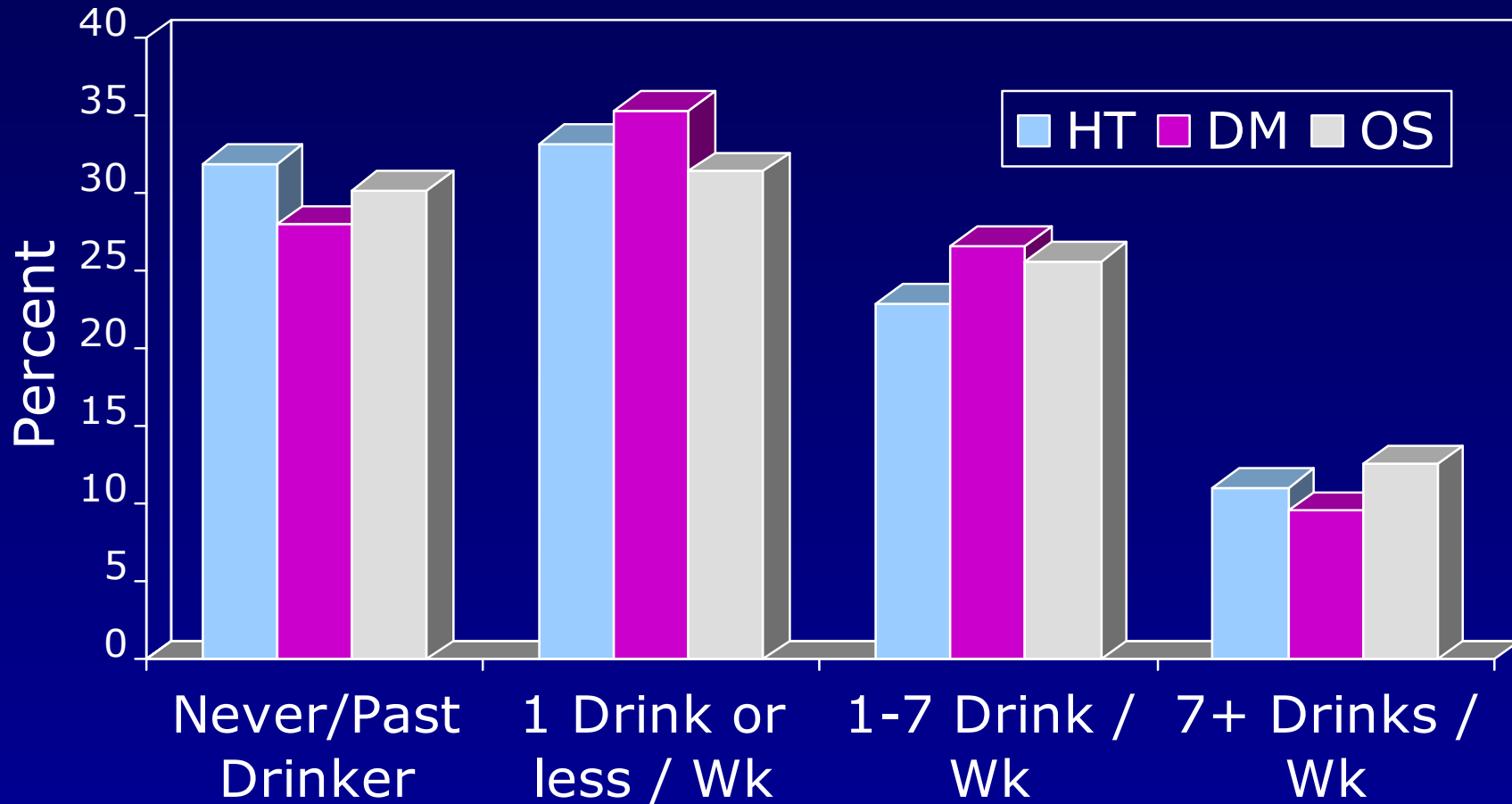
Physical Activity at Baseline by WHI Component



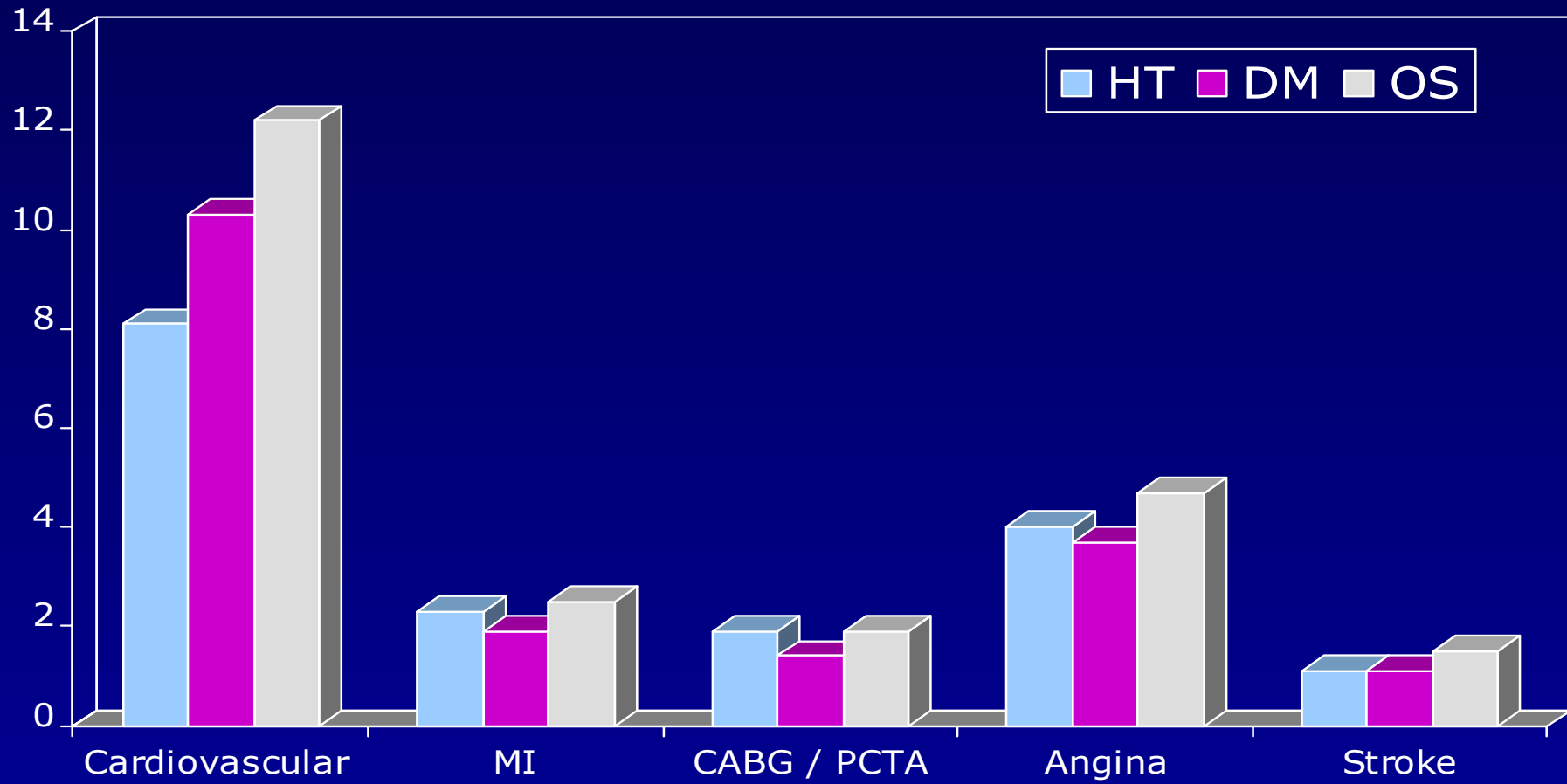
Smoking at Baseline by WHI Component



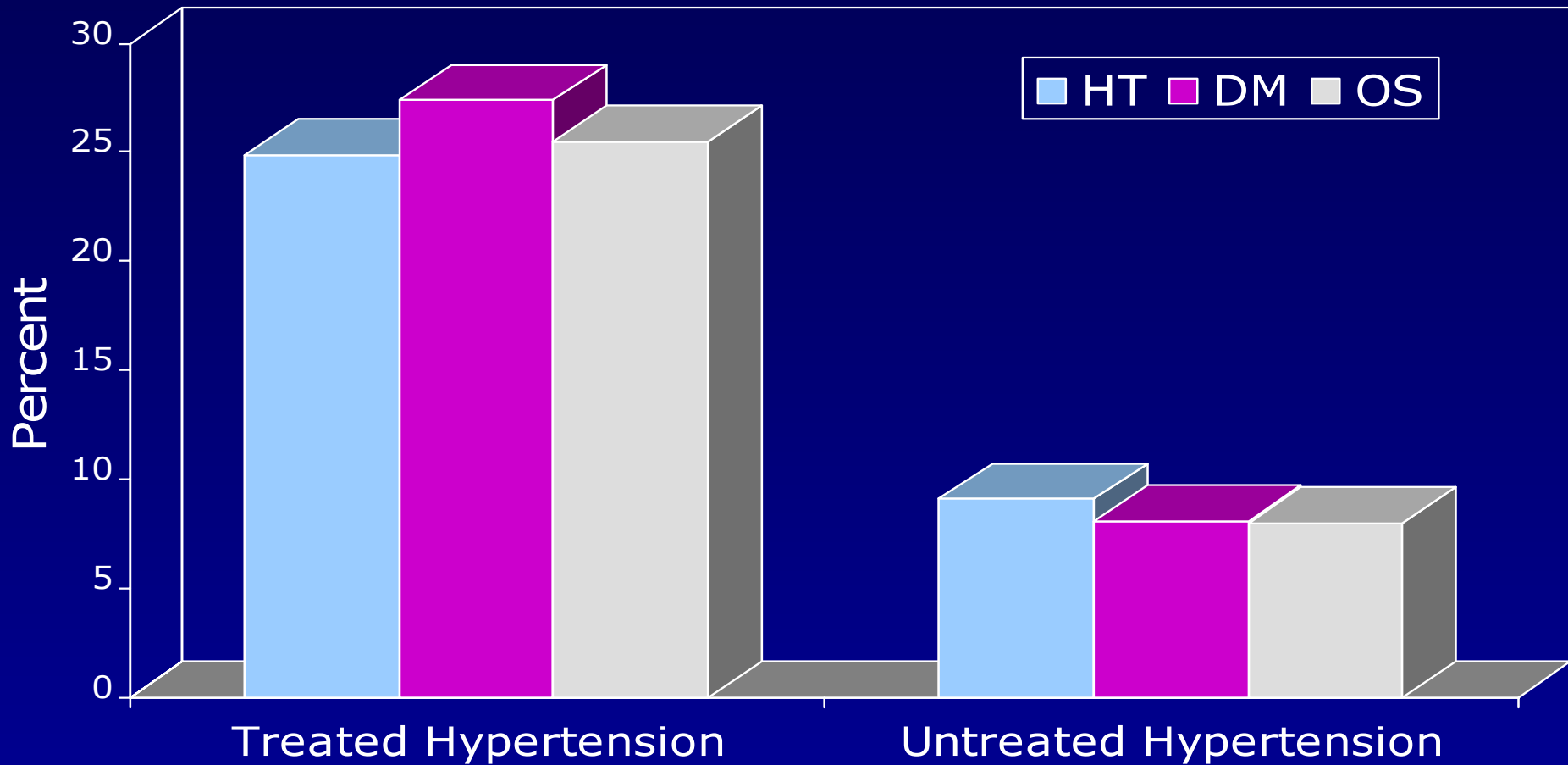
Alcohol Consumption at Baseline by WHI Component



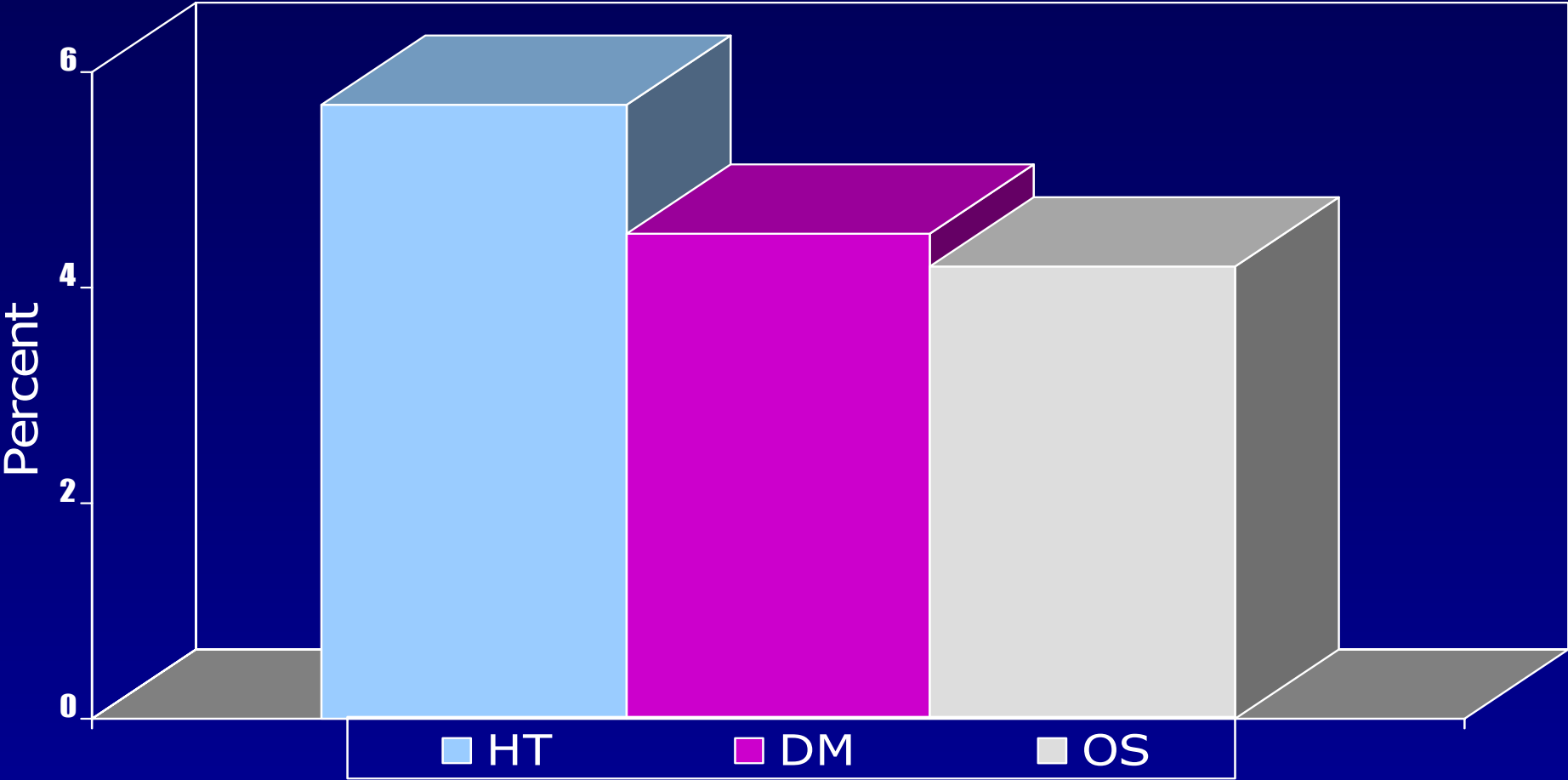
History of Heart Disease at Baseline by WHI Component



Hypertension at Baseline by WHI Component



Diabetes (Treated) at Baseline by WHI Component



Perceived Health Status at Baseline by WHI Component

In general, would you say your health is:

