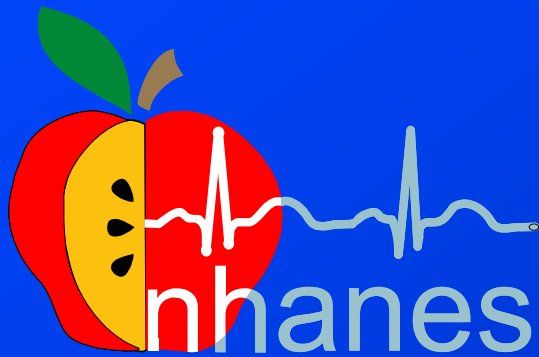


# The National Health and Nutrition Examination Survey



**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**  
**Centers for Disease Control and Prevention**  
**National Center for Health Statistics**

SAFER • HEALTHIER • PEOPLE™



# National Health and Nutrition Examination Surveys

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<i>Survey</i>	<i>Dates</i>	<i>Ages</i>
NHES I	1960-62	18-79 years
NHES II	1963-65	6-11 years
NHES III	1966-70	12-17 years
NHANES I	1971-75	1-74 years
NHANES II	1976-80	6 mo.-74 years
HHANES	1982-84	6 mo.-74 years
NHANES III	1988-94	2 mo. +
NHANES	1999-	All ages

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# Goals of NHANES

- **Estimate the prevalence of selected health conditions and risk factors**
- **Describe awareness, treatment and control of selected diseases**
- **Monitor trends over time**

# Goals of NHANES

- **Study the relationship of diet and health**
- **Explore emerging public health issues**
- **Establish and maintain a repository of stored biologic specimens for future research**

# Planning NHANES

- **Multi-agency process**
- **Content solicitation posted on web site**
- **Proposals evaluated by a set of criteria**
- **NHANES Forum**
- **CDC/NCHS Leadership**
- **Institutional Review Board**
- **Office of Management and Budget**

# Collaborators

- **CDC (7 Centers)**
- **NIH (12 Institutes)**
- **USDA (2 Research Services)**
- **EPA**
- **FDA**
- **HUD**

# **NHANES 1999-2004**

# Topics

- **Bone density, osteoporosis**
- **Cardiovascular disease**
- **Diabetes**
- **Dietary intake, nutritional status**
- **Environmental exposures**
- **Fitness, strength, activity**
- **Hearing and balance**
- **Infectious diseases, immunization**
- **Kidney disease**



# Topics

- **Mental health**
- **Obesity, body composition**
- **Oral health**
- **Reproductive health**
- **Respiratory disease**
- **Risk behaviors**
- **Skin diseases**
- **Vision**

# Data Collection

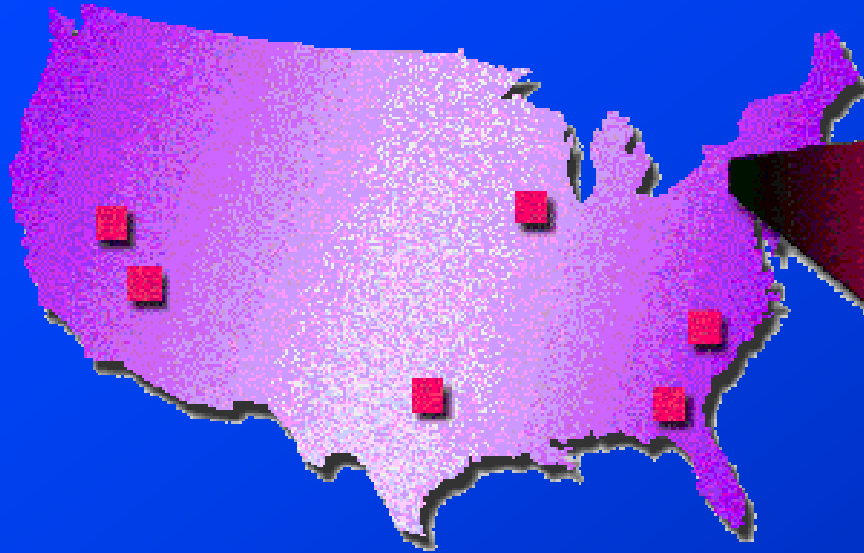
# Sample

- **Civilian, non-institutionalized household population**
- **Residents of all states and the District of Columbia**
- **All ages**
- **A nationally representative sample of about 5,000 individuals a year**

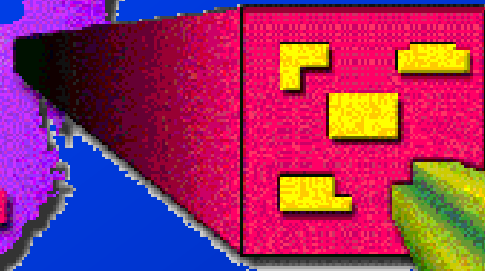
# Oversample

- **African Americans**
- **Mexican Americans**
- **Adolescents aged 12-19**
- **Older persons aged 60+**
- **Low income whites**
- **Pregnant women**

**Stage 1**  
Counties



**Stage 2**  
Segments



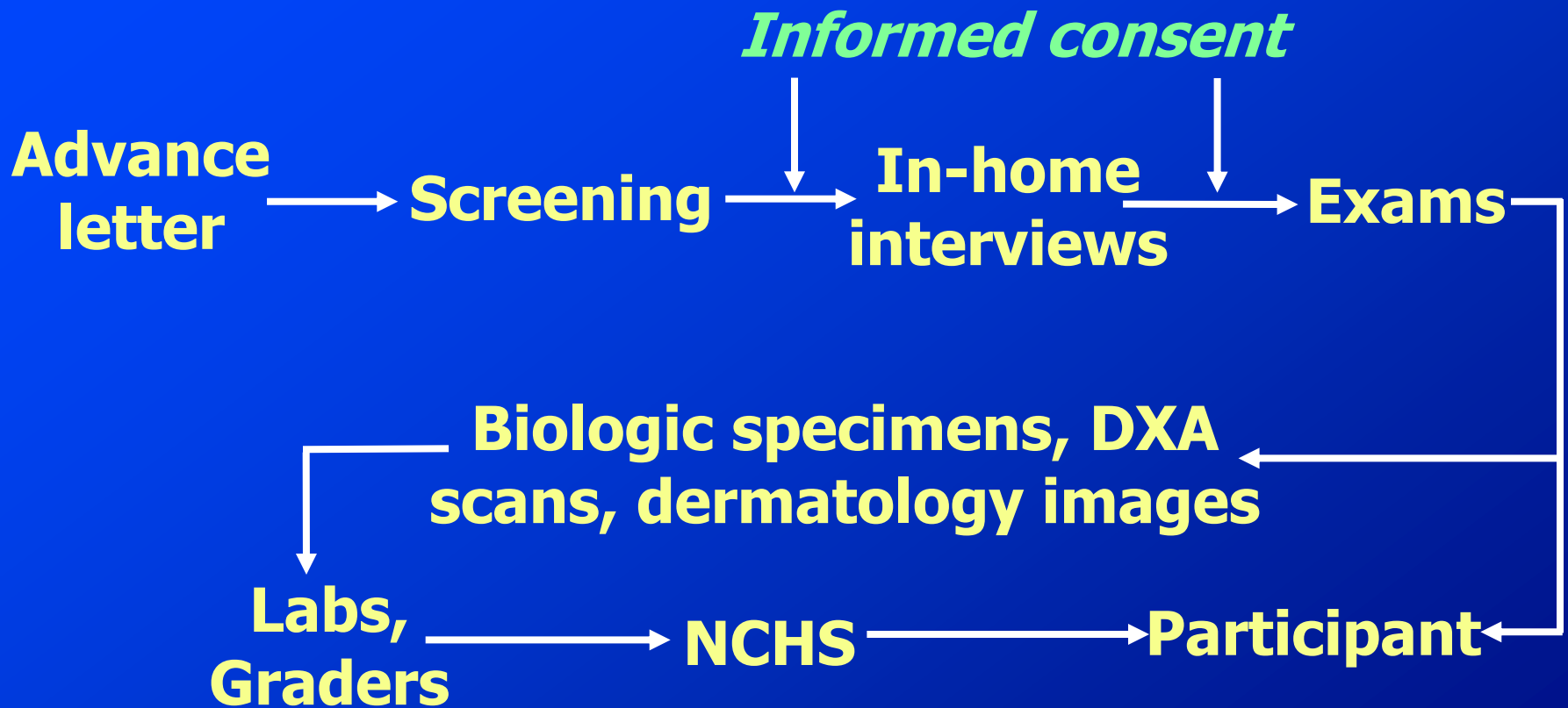
**Stage 3**  
Households



**Stage 4**  
SPs



# NHANES information flow



# National Health and Nutrition Examination Survey

## Examination Consent Brochure

From the Centers for Disease Control and Prevention/National Center for Health Statistics



nchs



LET'S  
IMPROVE  
OUR  
HEALTH



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Center for Health Statistics



# National Health and Nutrition Examination Survey

## Examination Assent Brochure

From the Centers for Disease Control and Prevention/National Center for Health Statistics  
7-11 years of age



nchs



LET'S  
IMPROVE  
OUR  
HEALTH

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Center for Health Statistics

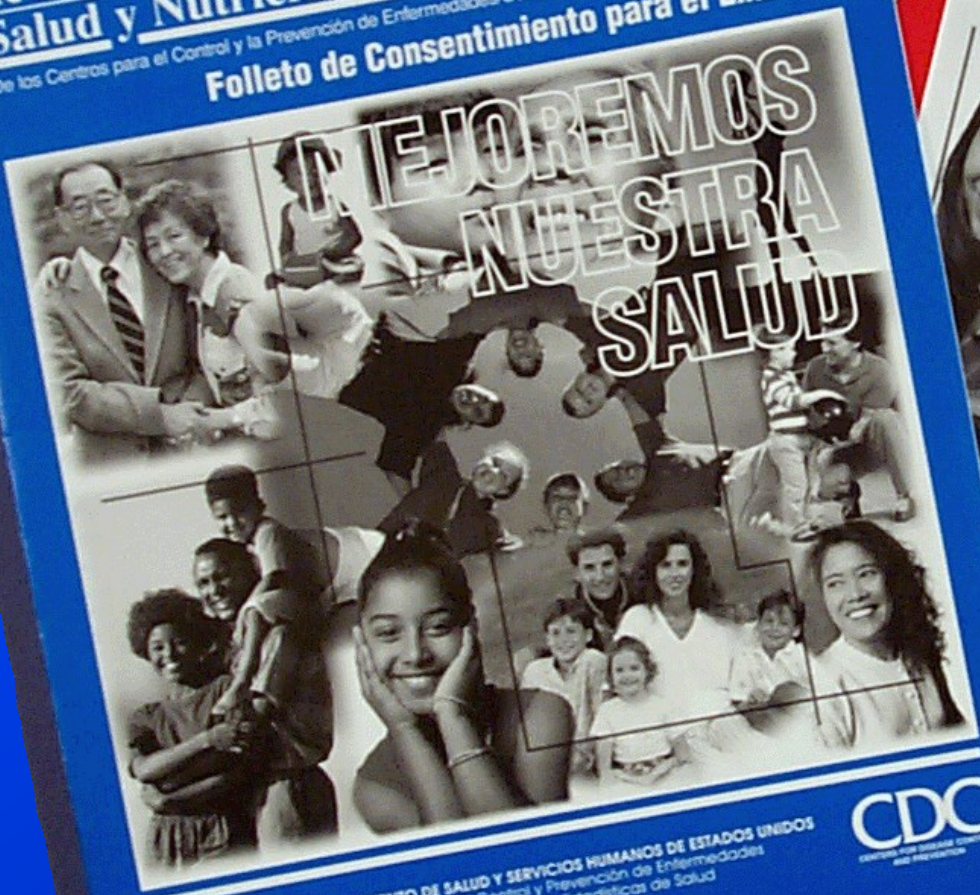


# Encuesta Nacional de Examen de Salud y Nutrición



De los Centros para el Control y la Prevención de Enfermedades/Centro Nacional de Estadísticas de Salud.

## Folleto de Consentimiento para el Examen



DEPARTAMENTO DE SALUD Y SERVICIOS HUMANOS DE ESTADOS UNIDOS  
Centros para el Control y Prevención de Enfermedades  
Centro Nacional de Estadísticas de Salud



# Encuesta Nacional de Examen de Salud y Nutrición



De los Centros para el Control y la Prevención de Enfermedades/Centro Nacional de Estadísticas de Salud.

## Folleto de Consentimiento para el Examen de 7 a 11 años de edad



DEPARTAMENTO DE SALUD Y SERVICIOS HUMANOS DE ESTADOS UNIDOS  
Centros para el Control y Prevención de Enfermedades  
Centro Nacional de Estadísticas de Salud





# NHANES Mobile Examination Centers

- **Standard environment**
- **Standard equipment**
- **Standard specimen collection**
- **Standard staff procedures**
- **Automated data collection**
- **Minimal site-specific error**

# **Quality Assurance/Quality Control**

- **Outreach to assure high response rates**
- **Instruments calibrated**
- **Edit checks**
- **Direct observations**
- **Gold standard examiners**
- **Continual data review**

# Information Technology Architecture

Household interviews



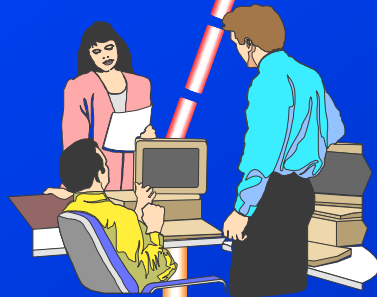
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home office



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T1

Field  
office



**National  
Frame Relay  
Network**

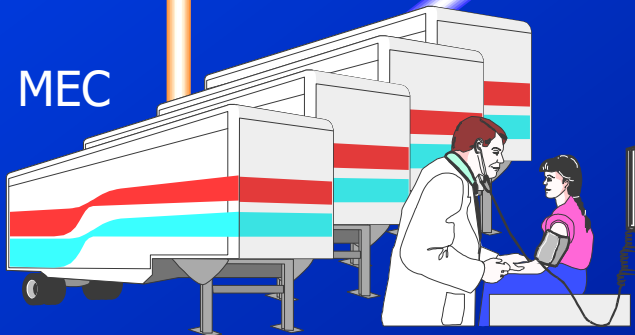


NCHS

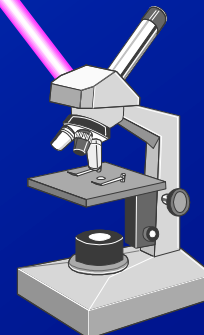
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Labs  
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graders



# Survey data release schedule

- **2-year datasets**
- **Website data release**
- **1999-2000 NHANES available**
- **2001-2002 NHANES release in 2004**

# Study Finds That in U.S., 1 in 3 Are Obese

By SALLY SQUIRES  
Washington Post Staff Writer

Americans are not just fat, they're getting fatter, according to a new government study that finds about one in every three adults is now obese and nearly two-thirds are overweight in the United States.

The number of overweight and obese people continues to climb at a steady rate despite the fact that Americans spend \$34 billion annually on diet products, from sugar-free sodas and weight-loss supplements to diet programs, the study indicated. From 1999 to 2000, the number of overweight adults rose from 56 percent to 65 percent of the population, according to the federal Centers for Disease Control and Prevention. (Overweight is defined as having a body mass index of 25 or higher—for example, a 5-foot-6-inch person who weighs 160 pounds or more.)

While waistlines are expanding across the board, the study shows that some groups are getting fatter faster than others. For example, more than half of black women 40 and older are obese, and more than 80 percent are overweight.

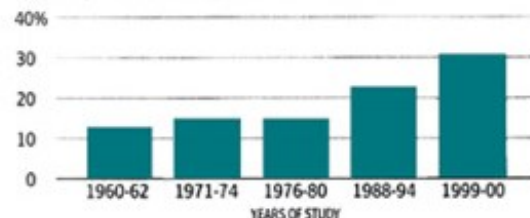
The findings suggest that "we are totally losing the battle to prevent and treat obesity," said George L. Blackburn, chairman of nutrition medicine at Harvard Medical School.

Also troubling is the rise in extreme obesity, according to the study, which is one of three papers on obesity published today in the *Journal of the American Medical Association*. Obesity is defined as having a BMI of 30 or greater, while extreme obesity is defined as having a BMI of 40 or greater. The number of adults with extreme

## Obesity Continues to Rise

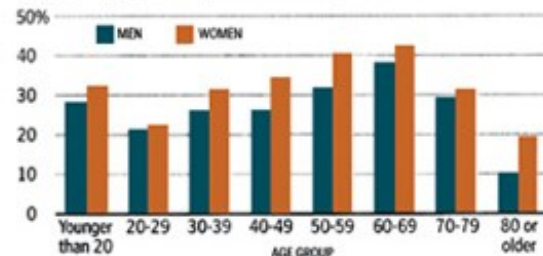
*The percentage of Americans who are obese continues to climb.*

Percentage of all adults age 20-74 who were obese



*Obesity is highest among people in their sixties. Women are more likely than men to be obese in all age groups.*

By age group, percentage who are obese, 1999-2000



*About the same proportion of men are obese in three racial groups. Black and Mexican American women are more commonly obese than white women.*

By racial group, percentage who are obese, 1999-2000



SOURCE: *Journal of the American Medical Association*

THE WASHINGTON POST

obesity—equal to a 5-foot-10-inch person weighing 280 pounds or more—rose from 3 percent to nearly 5 percent from 1999 to 2000, according to the CDC. That trend worries public health officials, because this group is at greatest risk for severe health problems, including diabetes, high blood pressure, heart disease and kidney failure.

"The greatest concern is about African American women," said William H. Dietz, director of the CDC's Division of Nutrition and Physical Activity and co-author of the JAMA paper on extreme obesity. "More than half are obese, and 15 percent have a BMI greater than 40."

The obesity epidemic is not limited to adults. A companion study of children and adolescents, led by Cynthia L. Ogden of the CDC's National Center for Health Statistics, found that in 1999 to 2000, nearly 16 percent of 12- to 19-year-olds were overweight, an increase of nearly 5 percentage points from 1988 to 1994. Among black and Mexican American adolescents, the rise was even greater, jumping 10 percentage points.

About 7 percent of youngsters 2 to 5 were overweight in 1988 to 1994, according to the CDC. But in 1999 to 2000, that number rose to 10 percent. Among those 6 to 11, the number of overweight children increased from 11 percent in 1988 to 1994 to 15 percent in 1999 to 2000.

"This is a stunning increase and a really scary thing," said Richard L. Atkinson, president of the American Obesity Association and director of the Medstar Research Institute's obesity research. "The public health costs of this are just really frightening if the disease acts

as it has in adults. It certainly portends a grave public health problem..."

What to do, however, is a matter of great debate. In an editorial that accompanies the obesity studies, JAMA's deputy editor, Phil B. Fontanarosa, noted that "during a time when the amount of research activity, knowledge and interest in obesity among the medical community as well as the level of public attention to the issues of weight, diet and exercise have never been greater, the epidemic of obesity continues virtually unabated with no sign of reversal."

To help focus attention on obesity, JAMA announced plans to publish a theme issue devoted to obesity research in spring 2003.

On Tuesday, first lady Laura Bush and former U.S. surgeon general David Satcher were hosts of the Healthy Schools Summit to help promote physical activity and better nutrition in schools. A bill designed to address obesity with more research was introduced last summer by Sen. Bill Frist (R-Tenn.). Rep. Mary Bono (R-Calif.) recently introduced similar legislation in the House.

Experts said that these latest findings simply underscore the extent of the obesity epidemic. "Even if we were able to do everything perfectly to halt the trend today, it probably won't change the prevalence much for a decade," said Van S. Hubbard, director of the National Institutes of Health's Division of Nutrition Research Coordination.

Yet without better means of prevention and treatment, obesity experts predict a grim future. "We must have the surgeon general and the CDC intensify their efforts for early identification and early prevention of overweight and obesity,"

said Harvard's Blackburn, "or we are going to have the first generation of children who are not going to live as long as their parents."

# What About the Future?



# Future Directions

## National HANES

- **Disclosure risk**
- **Content**
- **Special populations**
- **Sample design**

## Community Health and Nutrition Examination Surveys