REPORT ON DISEASES OF THE HEART & STROKE

SUNY DOWNSTATE MEDICAL CENTER

Heart disease and stroke remain the leading causes of death and disability.

Dear residents and friends of Brooklyn:

We all know someone who has died of or been crippled by a heart attack or stroke—often too early in life. This is especially sad since, frequently, such tragedies can be prevented by controlling risk factors and leading a healthy lifestyle. Yet heart disease and stroke remain the leading causes of death and disability in Brooklyn and in the nation.

We know for certain that high blood pressure, high blood cholesterol, diabetes, overweight and obesity, as well as poor eating habits and lack of exercise, put us at greater risk for heart disease and stroke. We also know that controlling these dangerous health conditions reduces our risk. Research has provided us with effective medicines and procedures for treating heart disease and stroke, but prevention is our major goal.

This *Report on Diseases of the Heart and Stroke* highlights the health challenges we face as a community. It also shows where we can take action— together. We must do more to foster healthy communities and healthy lifestyles by working with the owners of grocery stores and bodegas to offer healthy food choices; by making sure that parks and recreational areas are safe places for exercise; and by delivering health messages through the media, as well as businesses, religious groups, and community organizations. We must appreciate each other's cultural viewpoints and learn from each other. Effective partnering makes a difference.

There are no shortcuts when it comes to improving the public's health. I hope this report will stir you to action—in your own life and in the lives of others whom you can influence through your knowledge and concern.

John C. LaRosa, MD
President

Contents

DISEASES OF THE HEART AND STROKE
SELECTED FINDINGS

Brooklyn is a borough of many races and ethnicities. As this report shows, certain neighborhoods have a concentration of residents with risk factors that place them in greater danger of having heart disease and stroke. The Appendix (see page 18) shows the distribution of persons between the ages of 35 to 64 and over 65, and by race/ethnicity, in each Brooklyn neighborhood.

General Findings
- Lifestyle factors such as exercising regularly, not smoking, and eating healthy foods can lead to lower blood pressure and blood cholesterol, and can greatly reduce the risk of diabetes.
- By controlling these factors, you can reduce the risk of getting sick or dying from heart disease and stroke.

Brooklyn's Profile
- Heart disease kills a higher percentage of people in Brooklyn compared to the rest of the city or country.
- Heart disease and stroke, along with diabetes, are 3 of the 5 leading causes of death in Brooklyn.
- Brooklyn has the highest rates of coronary heart disease, congestive heart disease, hypertensive disease, and stroke hospitalizations compared to the state and the rest of the city.

By Race
- Black people are more likely to be hospitalized for congestive heart failure, hypertensive heart disease, and are more likely to die of heart disease and stroke between the ages of 35-64.
- White people are more likely to be hospitalized for coronary heart disease and die of heart disease after the age of 65.

By Brooklyn Neighborhood

Williamsburg/Bushwick

The Brooklyn Neighborhood with the Highest Hospitalizations for:
- Coronary Heart Disease
- Stroke
- Congestive Heart Failure (persons 65 - 84 years)

One of Top 3 Brooklyn Neighborhoods for:
- High Blood Cholesterol
- High Blood Pressure
- Being Overweight or Obese
- Not Exercising Regularly

East New York

One of Top 3 Brooklyn Neighborhoods with Hospitalizations for:
- Coronary Heart Disease
- Stroke
- Congestive Heart Failure (persons 65 - 84 years)

One of Top 3 Brooklyn Neighborhoods for:
- High Blood Pressure
- Diabetes
- Being Overweight or Obese
- Not Exercising Regularly

Bedford Stuyvesant/Crown Heights

One of Top 3 Brooklyn Neighborhoods with Hospitalizations for:
- Hypertensive Disease
- Stroke
- Congestive Heart Failure (persons 65 - 84 years)

One of Top 3 Brooklyn Neighborhoods for:
- High Blood Pressure
- Diabetes
- Being Overweight or Obese

Coney Island/Sheepshead Bay

One of Top 3 Brooklyn Neighborhoods with Hospitalizations for:
- Coronary Heart Disease

One of Top 3 Brooklyn Neighborhoods for:
- High Blood Cholesterol
- Smoking

Michael: Living with a Silent Killer*

The Wrong Way

Recently, Michael turned 50 and seemed on top of the world—his son had just graduated from college (the first in the family's history). His friends and family would comment on how fit he looked, especially for a guy his age. Michael had always looked fit and he was proud of it.

Michael enjoyed his work as a carpenter because it made him feel good and active, but it did not give him the kind of exercise that was best for his heart. He also smoked. Now and then he enjoyed a good game of hoops with his son or friends; however, afterwards he often felt dizzy. Sometimes he would have a bad headache or blurry vision. He just thought it was from stress or being tired.

Michael seldom went to see a doctor because he didn't think he needed to. He looked fit and he thought he was as healthy inside as he looked on the outside.

Last week, Michael had a massive stroke to his brain.

The Right Way

Recently, Michael turned 50 and seemed on top of the world—his son had just graduated from college (the first in the family's history). His friends and family would comment on how fit he looked, especially for a guy his age, despite the fact that he rarely exercised and smoked a lot.

A few years ago, Michael started having bad headaches and blurry vision. He decided to see a doctor. The doctor told him he had high blood pressure and would be at risk for a stroke if he didn't change his lifestyle. He asked Michael to stop smoking, exercise regularly, and eat a healthy diet with less sodium (salt).

Michael knew that it would not be easy, but he wanted to be healthy for his own sake and that of his family. So he followed his doctor's advice and got his blood pressure under control. He stopped smoking and eating salty foods. Now he exercises regularly and his wife and children are doing the same thing.

At his last doctor's visit, Michael was told he was doing well.

Aurora: A Woman with Heart*

The Wrong Way

At 60, Aurora leads a full life with her family and church. She has been so busy taking care of others that she rarely has time for herself.

Aurora has always been overweight, but in the past 10 years she has developed high cholesterol and diabetes. With her busy schedule, she often forgets to take her medications. Her daughter keeps telling her to watch herself, to not eat so much and stay away from sweets, but Aurora tells her that they make her feel good.

At her last visit to the doctor, Aurora was told that her diabetes was not being controlled and that she was far too overweight. The doctor recommended that she start taking her medicines regularly, try to lose 15 pounds, and walk a little each day. Aurora said that she has tried to lose weight but it does not work. Besides, there is no good place to walk, and it's hard to remember her medicines.

Yesterday, Aurora had a heart attack. She may not survive.

The Right Way

At 60, Aurora leads a busy life with her family and church. She seldom found time to exercise much or watch her weight, until one day she attended a health fair. She learned that she was overweight and had high cholesterol and diabetes. More importantly, she was told that she was at high risk for heart disease.

Aurora was told that she needed to lose weight, lower her cholesterol, and control her diabetes. It was difficult news to hear, but Aurora decided that she wanted to be around to share her life with her family.

So Aurora followed the doctor's advice to walk a little every day and eat a heart-healthy diet. She took her medicines to lower her cholesterol and control her diabetes. It took a while to lose the weight but slowly she got better at it.

Today, she gets everyone in her family involved in staying healthy because she believes that they are all in this together.

*Michael and Aurora are composite patient stories.

WHAT IS HIGH BLOOD CHOLESTEROL?

High blood cholesterol usually means that your total cholesterol level is above 240. The goal is to get it to 200 or below.

Below 200 - Optimal cholesterol level
200 to 239 - Borderline high cholesterol level
Over 240 - High cholesterol level

Two important parts of cholesterol are:
LDL (or bad cholesterol) causes your arteries to clog.
HDL (or good cholesterol) helps keep your arteries clear.

WHAT ARE THE BEST LDL & HDL LEVELS TO HAVE?

Bad Cholesterol (LDL)
Below 100 - Best
100 to 129 - Good
130 to 159 - Borderline High
160 and Above - High

Good Cholesterol (HDL)
60 or Above - Best
40 to 59 - Good
Below 40 - Low

Ways to Lower Your LDL (Bad Cholesterol) and Improve Your HDL (Good Cholesterol)

Exercise Regularly
Regular exercise helps raise HDL (good) cholesterol. Get at least 30 minutes of aerobic exercise, such as brisk walking, about 4 times a week.

Lose Weight
Being overweight or obese raises your LDL (bad) cholesterol levels.

Cut out Saturated and Trans Fatty Acids
Saturated and Trans Fatty Acids (TFAs) lower HDL (good) cholesterol and increase LDL (bad) cholesterol. Stay away from fast foods, donuts, and other packaged goods like chips—these contain TFAs.

Use Olive, Canola and Peanut Oil
Olive, canola, and peanut oil raise your HDL (good) cholesterol level and lower LDL (bad) cholesterol.

Eat More Fiber
The fiber in whole grains, oats, fruits, vegetables, and beans raises your HDL (good) cholesterol while it lowers your LDL (bad) cholesterol level.

Stop Smoking
Smoking raises your LDL (bad) cholesterol and lowers your HDL (good) cholesterol levels.

WHAT IS HIGH BLOOD PRESSURE?

High blood pressure happens when the pressure or force of blood through the arteries is too strong.

High blood pressure is a "silent killer" that often has no symptoms and is not noticed by most people for many years.

Two important parts of blood pressure are:
SYSTOLIC
The pressure in the arteries when the heart pumps.

DIASTOLIC
The pressure in the arteries when the heart relaxes between beats.

BLOOD PRESSURE LEVELS EXPLAINED

	Optimal or Good Blood Pressure	Moderate (Pre-Hypertension)	Hypertension or High Blood Pressure
Systolic (top number)	Below 120	120 to 139	140 or higher
Diastolic (bottom number)	Below 80	80 to 89	90 or higher

Ways to Lower or Control Your High Blood Pressure

Exercise Regularly
Exercise helps keeps your heart and blood vessels strong and healthy. It also helps you lose weight.

Lose Weight
Being overweight or obese raises your blood pressure and increases your risk for other health problems.

Lower Your Sodium Intake
Stay away from salty snacks and other salty foods. Sodium (salt) is hidden in cheese, ketchup, sausages, canned vegetables and soups, and many packaged foods. Use herbs and spices instead of salt to flavor your food.

Eat Less Processed Meat and Fast Foods
Processed meats contain high levels of salt.

Eat Fresh Fruit/Vegetables & Less Canned Foods
Fresh vegetables and fruit have less salt and more potassium. Canned vegetables are high in salt and low in potassium.

Reduce Your Stress
Stress is believed to affect high blood pressure. Try to reduce stressful activities and relax whenever possible.

What Are Diseases of the Heart?

"Diseases of the heart" is a general description for diseases that cause damage to the heart muscle and the blood vessels (arteries and veins) that supply it with blood and nutrition.

Some of the diseases of the heart covered in this report are:

- **Coronary Heart Disease** — A disease of the heart caused by narrowed heart arteries resulting in less blood and oxygen reaching the heart muscle. If one or more arteries become blocked, the result is a heart attack—a major cause of death in Brooklyn, New York City and State, and the nation. Coronary heart disease is also called coronary artery disease or ischemic heart disease.

- **Congestive Heart Failure or Heart Failure** — A condition in which the heart is weakened and cannot pump blood easily to supply the body's organs. When the blood does not flow well, it builds up (congests) in the blood vessels and heart. The heart may keep pumping, but it gets weaker over time and may stop.

- **Hypertensive Heart Disease** — A disease that comes from uncontrolled high blood pressure (hypertension). It is the leading cause of death from hypertension.

- **Heart Attack** — Also called acute myocardial infarction, a heart attack happens when a part of the heart muscle dies because the blood flow to that area is blocked. A heart attack can be deadly.

A full description of the conditions included in the term *diseases of the heart* can be found in Technical Notes, page 20.

What Is a Stroke?

Stroke, or a brain attack, results from a disease of the arteries in the brain called cerebrovascular disease. A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts. When that part of the brain cannot get the blood and oxygen it needs, it starts to die. Once this area dies, it cannot return back to normal function/use. High blood pressure is the leading risk factor for stroke.

> Stroke and heart disease can strike anyone, anytime! More young people are becoming overweight and obese and are getting diabetes, which increases the chance that they will have heart problems sooner in life.

DEATHS DUE TO DISEASES OF THE HEART AND STROKE

Heart disease is the number one cause of death nationwide, and stroke is among the leading five causes. As shown below, Brooklyn (at 43.3 percent) leads the rest of New York City (39.1 percent) and the country (28 percent) in the percentage of people who die of heart disease.

While heart disease and stroke can affect people of all ages, they are a major problem for people over 65 years old. In 2003, 85 percent of all New Yorkers who died of heart disease and 74 percent of those who died from stroke were over 65.

Ten Leading Causes of Death, 2003

	Brooklyn %		New York City except Brooklyn %		United States %
Diseases of the Heart	43.3	Diseases of the Heart	39.1	Diseases of the Heart	28.0
Cancers	21.1	Cancers	24.3	Cancers	22.7
Influenza & Pneumonia	4.5	Influenza & Pneumonia	4.5	Stroke	6.5
Diabetes	3.4	Stroke	3.2	Chronic Lower Respiratory Disease	5.2
Stroke	3.0	Diabetes	3.1	Accidents	4.3
HIV / AIDS	2.9	Chronic Lower Respiratory Disease	2.9	Diabetes	3.0
Chronic Lower Respiratory Disease	2.6	HIV / AIDS	2.8	Influenza & Pneumonia	2.7
Accidents	1.8	Accidents	2.1	Alzheimer's Disease	2.6
Kidney Disease & Failure	1.4	Drug Dependence	1.6	Kidney Disease & Failure	1.7
Drug Dependence	1.3	Homicide	1.0	Septicemia	1.4
All Other Causes of Death	14.7	All Other Causes of Death	15.3	All Other Causes of Death	21.9

Leading Causes of Death for Diseases of the Heart, 2003

In 2003, coronary heart disease and heart attacks made up almost 88 percent of deaths due to diseases of the heart. More Brooklynites and New Yorkers die of coronary heart disease than people living in other parts of the United States.

	Brooklyn %		New York City except Brooklyn %		United States %
Coronary Heart Disease	69.1	Coronary Heart Disease	69.0	Coronary Heart Disease	44.6
Heart Attack	18.4	Heart Attack	17.7	Heart Attack	25.0

Source: *Summary of Vital Statistics 2003 The City of New York*, NYCDOHMH; Deaths: Preliminary Data for 2003.

Note: No data on deaths are available from New York State for 2003.

RISK FACTORS FOR DISEASES OF THE HEART AND STROKE

Eight Important Risk Factors

What we do for our bodies today will have an effect on our health in the future. Below are eight major risk factors or behaviors that increase the chance of getting heart disease and stroke.

- **Having high blood cholesterol** – Our bodies need a certain amount of cholesterol, but when the level of total cholesterol or LDL cholesterol (the "bad" cholesterol) in the blood is too high, cholesterol builds up and narrows the blood vessels. Over time, this can prevent enough blood, with its important supply of oxygen and nutrients, from passing through. High blood cholesterol is a major risk factor for coronary heart disease and heart failure.

- **Having high blood pressure** – When the pressure, or force of blood, flowing through the arteries is too strong, it makes the heart work harder and the heart muscle becomes stiff and thick. It also damages the blood vessels, which can allow cholesterol and other materials to build up. High blood pressure is known as the "silent killer" and is a major risk factor for coronary heart disease, stroke, and heart failure.

- **Having diabetes** – Insulin changes sugar from the foods we eat into energy for the body. Diabetes results when the body cannot produce or properly use insulin. This disease is sometimes referred to as sugar diabetes. Diabetes increases the chance of heart attack and death. Usually, people with diabetes have high blood pressure and high blood cholesterol. Sixty-five percent of persons with diabetes die from heart disease and stroke (American Diabetes Association, 2005).

- **Being overweight or obese** – Not getting enough exercise, overeating, and making bad food choices can lead to overweight and obesity. For some individuals, obesity can run in the family (be genetic or inherited). Blood pressure and LDL (bad) cholesterol increase as a person becomes overweight or obese. The risk of diabetes also rises the more one becomes overweight or obese.

- **Being physically inactive** – Regular exercise or brisk physical activity several times a week helps control weight and improve health. Lack of regular exercise can weaken the heart muscles and increase blood cholesterol levels.

- **Smoking** – Not only is smoking harmful to the lungs; it also reduces the good cholesterol (HDL) and increases the bad cholesterol (LDL) in the blood. Cigarettes contain over 600 harmful substances, such as ammonia, nicotine, tar, and hydrogen cyanide that hurt the heart and blood vessels.

- **Heavy drinking** – The heavy use of alcohol can cause high blood pressure and high triglyceride levels (a form of fat carried in the blood). It can lead to weight gain and increase the chance of stroke. Heavy drinking–or binging–just a few times a month almost doubles a person's chance of dying after a heart attack, compared to the risk for moderate drinkers. (AHA Scientific Sessions 2004).

- **Having a family history of heart disease and stroke** – A person with a family history of heart disease and stroke needs to be extra careful about avoiding the above risk factors.

The following pages show graphs by risk factor, hospitalization, and death from diseases of the heart.
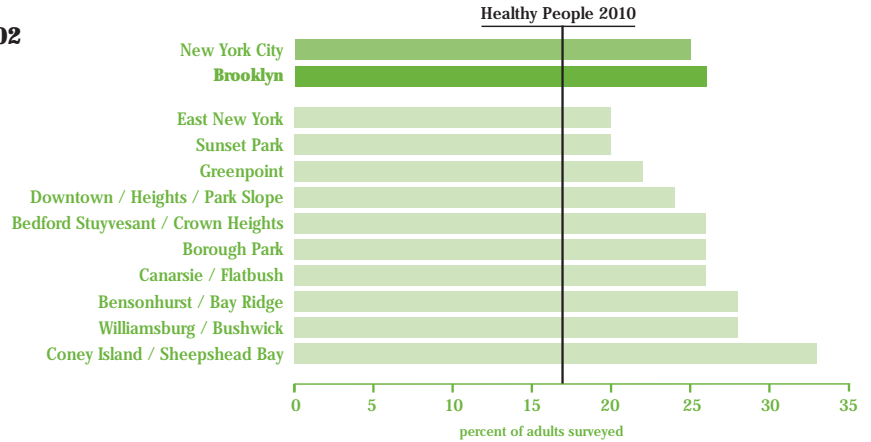
High Blood Cholesterol, High Blood Pressure, and Diabetes

High blood cholesterol, high blood pressure, and diabetes are conditions that pose a major health threat. If not diagnosed early and treated properly, they increase the risk for heart disease, stroke, and even death. If you have any of these conditions, take control of your health and lower your risks.

Adults with High Blood Cholesterol, 2002

The Healthy People 2010 goal is for no more than 17 percent of the population to have high cholesterol, yet over 25 percent of Brooklynites over the age of 20 reported having been told by a doctor that they have high blood cholesterol. As many as 1 in 3 adults living in Coney Island/Sheepshead Bay reported having high blood cholesterol.
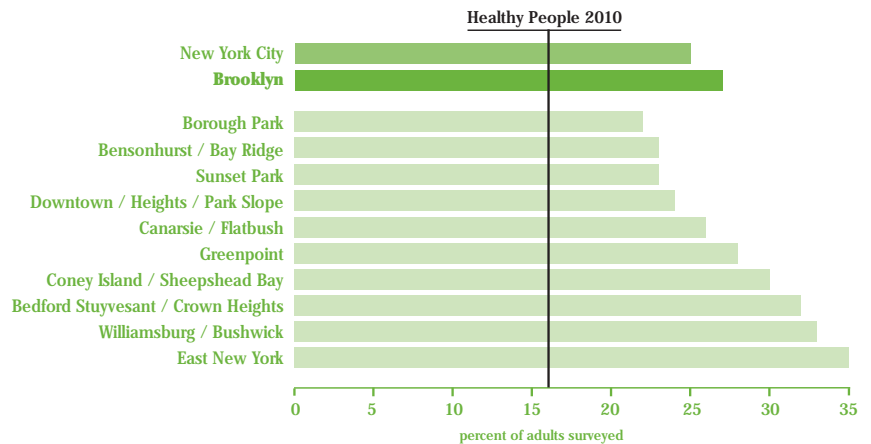
Source: Community Health Survey,
NYCDOHM, 2002

Healthy People 2010

Area	percent
New York City	
Brooklyn	
East New York	
Sunset Park	
Greenpoint	
Downtown / Heights / Park Slope	
Bedford Stuyvesant / Crown Heights	
Borough Park	
Canarsie / Flatbush	
Bensonhurst / Bay Ridge	
Williamsburg / Bushwick	
Coney Island / Sheepshead Bay	

percent of adults surveyed

Adults with High Blood Pressure, 2002

More than 25 percent, or 1 in 4, Brooklyn residents reported having been told by a doctor that they have high blood pressure. In three neighborhoods—Bedford Stuyvesant/Crown Heights, Williamsburg/Bushwick, and East New York—more than 30 percent of the residents had been diagnosed with high blood pressure.

Source: Community Health Survey,
NYCDOHM, 2002

Healthy People 2010

Area	percent
New York City	
Brooklyn	
Borough Park	
Bensonhurst / Bay Ridge	
Sunset Park	
Downtown / Heights / Park Slope	
Canarsie / Flatbush	
Greenpoint	
Coney Island / Sheepshead Bay	
Bedford Stuyvesant / Crown Heights	
Williamsburg / Bushwick	
East New York	

percent of adults surveyed

Adults with Diabetes, 2003

In 2003, almost 10 percent of Brooklynites had been diagnosed with diabetes. Five Brooklyn neighborhoods had over 10 percent of adults reporting they had diabetes. East New York had the highest percentage: nearly 1 in 5 adults with diabetes.

Source: Community Health Survey,
NYCDOHMH, 2003

Area	percent
New York City	
Brooklyn	
*Downtown / Heights / Park Slope	
Canarsie / Flatlands	
Greenpoint	
*Sunset Park	
East Flatbush / Flatbush	
Coney Island / Sheepshead Bay	
Bensonhurst / Bay Ridge	
Williamsburg / Bushwick	
Bedford Stuyvesant / Crown Heights	
Borough Park	
East New York	

percent of adults surveyed

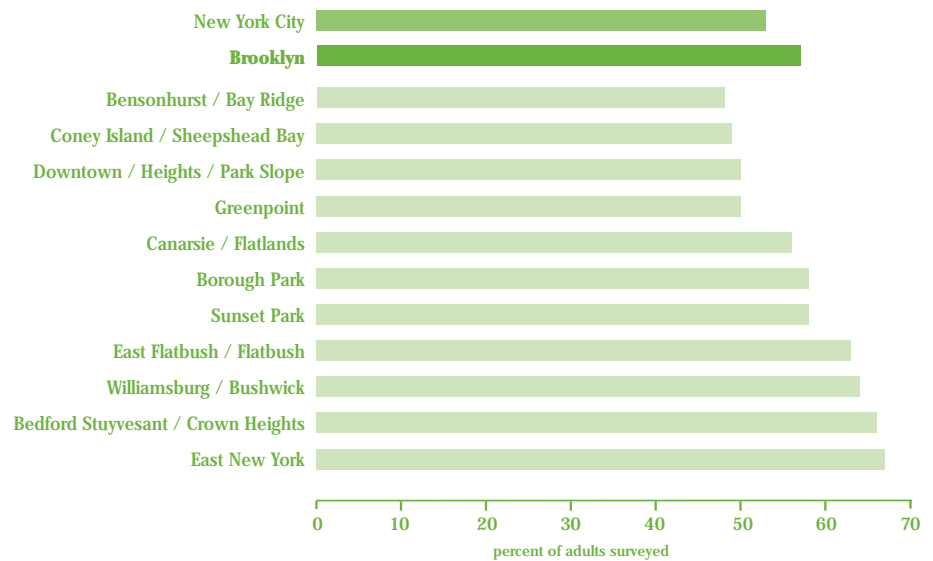* Survey sample estimate unreliable

Overweight, Obesity, and Lack of Exercise

Overweight and obesity set the stage for many related health problems: high cholesterol, high blood pressure, and diabetes, among others. Controlling weight means eating right and getting regular exercise.

Adults Who Were Overweight or Obese, 2003

Nearly 60 percent of Brooklyn adults and over half of those living in 9 out of 11 Brooklyn neighborhoods reported being overweight or obese.
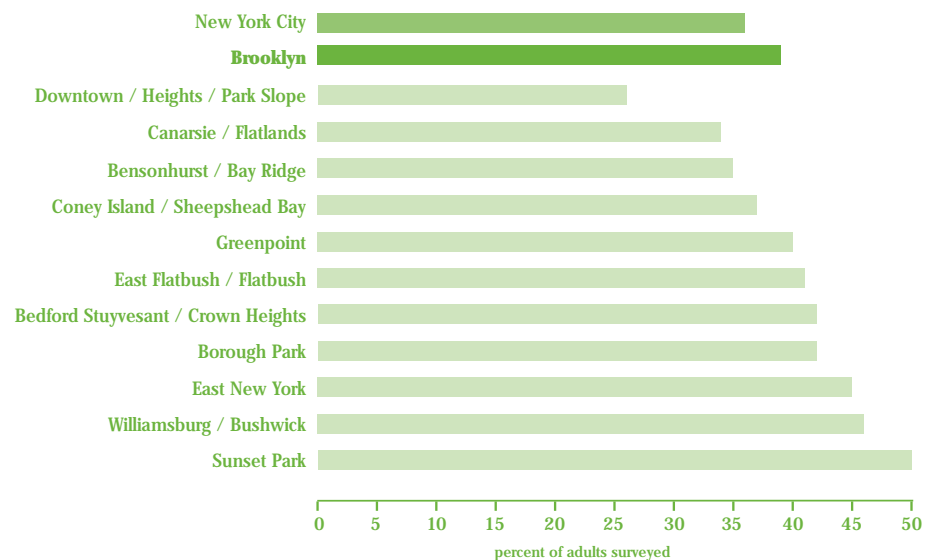
Source: Community Health Survey, NYCDOHMH, 2003

New York City
Brooklyn
Bensonhurst / Bay Ridge
Coney Island / Sheepshead Bay
Downtown / Heights / Park Slope
Greenpoint
Canarsie / Flatlands
Borough Park
Sunset Park
East Flatbush / Flatbush
Williamsburg / Bushwick
Bedford Stuyvesant / Crown Heights
East New York

0   10   20   30   40   50   60   70
percent of adults surveyed

Adults Who Did Not Exercise, 2003

Almost 40 percent of Brooklyn residents reported that they did not have any physical activity or exercise in the past month. In 10 Brooklyn neighborhoods, over 30 percent of adults reported having had no physical activity or exercise in the past month. Sunset Park had the highest percentage (50 percent) of adults reporting no physical activity or exercise in the past month.

Source: Community Health Survey, NYCDOHMH, 2003

New York City
Brooklyn
Downtown / Heights / Park Slope
Canarsie / Flatlands
Bensonhurst / Bay Ridge
Coney Island / Sheepshead Bay
Greenpoint
East Flatbush / Flatbush
Bedford Stuyvesant / Crown Heights
Borough Park
East New York
Williamsburg / Bushwick
Sunset Park

0   5   10   15   20   25   30   35   40   45   50
percent of adults surveyed

Smoking and Binge Drinking

Smoking can increase your blood pressure and bad cholesterol (LDL). Current smokers have a greater risk of having a heart attack or stroke than former smokers or those who never smoked. People who quit smoking before the age of 50 reduce their risk of dying in the next 15 years by 50 percent, compared to those who still smoke (Healthy People 2010, CDC).

Like smoking, drinking too much (especially binge drinking) can increase your blood pressure and bad cholesterol (LDL). The more heavily you drink, the more you risk getting heart disease or stroke, or a deadly heart attack.

Adults Who Smoked, 2002

Fewer Brooklynites reported that they were current smokers than other adult New Yorkers. But more than 1 in 5 adults in six Brooklyn neighborhoods currently smoke. East New York had the highest percentage of current smokers in Brooklyn.

Source: Community Health Survey, NYCDOHMH, 2002

percent of adults surveyed
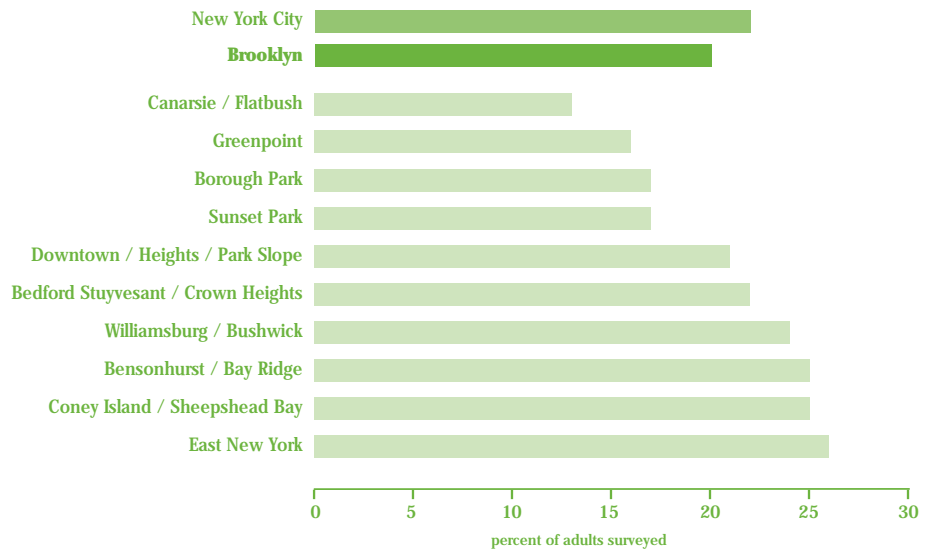
Adults Who Engaged in Binge Drinking, 2003

Compared to other New York City residents, fewer adults in Brooklyn reported that they had done any binge drinking in the past month. However, in 9 of 11 Brooklyn neighborhoods, more than 10 percent of adult residents reported binge drinking one or more times in the past month. Over 15 percent of adults living in Greenpoint, Bensonhurst/Bay Ridge, and Downtown/ Heights/Park Slope reported binge drinking in the past month.

Source: Community Health Survey, NYCDOHMH, 2003

percent of adults surveyed
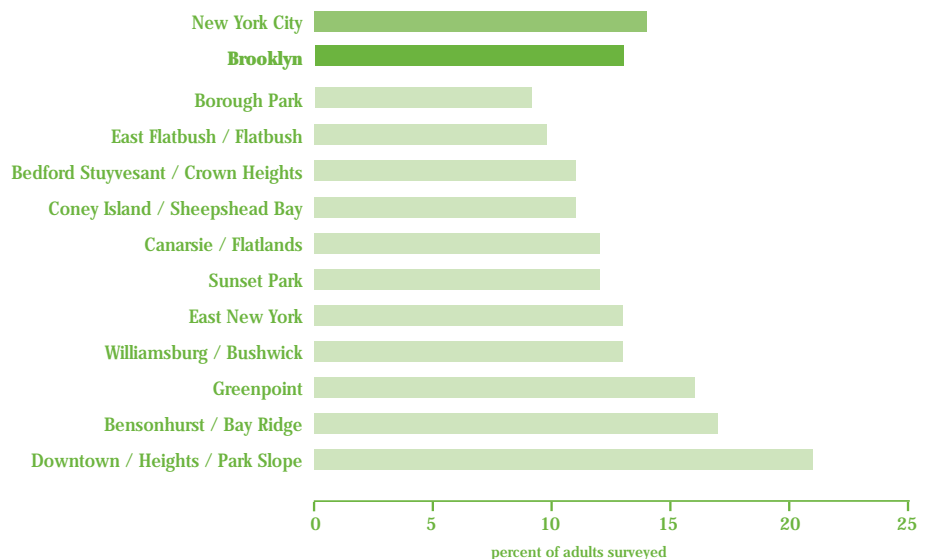
WHICH BROOKLYN NEIGHBORHOODS STAND OUT?

A handful of Brooklyn neighborhoods have greater risk factors for heart disease and stroke than others. (See the Appendix on page 18 for a look at the age/racial/ethnic composition of Brooklyn's neighborhoods, which plays an important role in determining which communities are at greatest risk.) As you will see in the following pages, many of the residents of these neighborhoods are more likely to be hospitalized from heart disease and stroke.

Three Leading Brooklyn Neighborhoods for Each Risk Factor

High Blood Cholesterol	Coney Island/ Sheepshead Bay	Williamsburg/ Bushwick	Bensonhurst/ Bay Ridge
High Blood Pressure	East New York	Williamsburg/ Bushwick	Bedford Stuyvesant/ Crown Heights
Diabetes	East New York	Borough Park	Bedford Stuyvesant/ Crown Heights
Overweight or Obese	East New York	Bedford Stuyvesant/ Crown Heights	Williamsburg/ Bushwick
No Exercise	Sunset Park	Williamsburg/ Bushwick	East New York
Smoking	East New York	Coney Island/ Sheepshead Bay	Bensonhurst/ Bay Ridge
Binge Drinking	Downtown/ Brooklyn Heights/ Park Slope	Bensonhurst/ Bay Ridge	Greenpoint

Coronary heart disease (CHD) is caused by the build-up of plaque along the walls of the arteries that carry blood to the heart. When heart arteries become narrow, less blood and oxygen reach the heart muscle. If the arteries become blocked, the result is a heart attack, a major cause of death not only in Brooklyn but throughout the city, state, and nation.

CHD is the leading cause of hospitalization and also death for people with heart disease.
- In 2003, CHD was the cause of nearly 70 percent of all heart disease-related deaths in Brooklyn.[1]
- Nearly 60 percent of Brooklyn residents hospitalized for CHD came through the emergency room.
- 56 percent were over 65 years old.[2]

[1] *Summary of Vital Statistics 2003, City of New York*, NYCDOHMH
[2] HANYS - SPARCS, 2003

Coronary Heart Disease Hospitalizations by Race/Ethnicity, 2003

White residents of Brooklyn had a much higher hospitalization rate for CHD than the borough's other racial/ethnic groups. With the exception of its Asian residents, the borough had a higher rate of hospitalization for CHD than the rest of the city.

The majority of people treated for coronary heart disease in hospitals are over 65 years old. Because Whites make up the largest percentage of people over 65 in Brooklyn and the rest of city, they also have the highest rate of hospitalization for coronary heart disease.
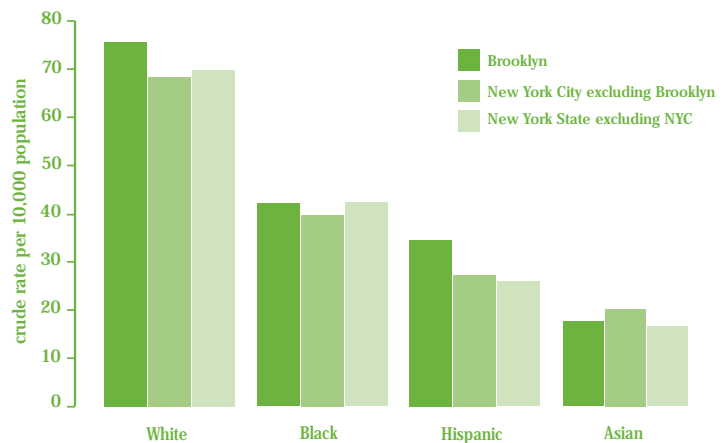
Source: HANYS - SPARCS Data, 2003

Coronary Heart Disease Hospitalizations by Brooklyn Neighborhood, 2003

While Brooklyn had higher rates of hospitalization for CHD than the rest of the city and state, five neighborhoods had higher rates than the borough as a whole. Williamsburg/Bushwick had the highest rate of all.
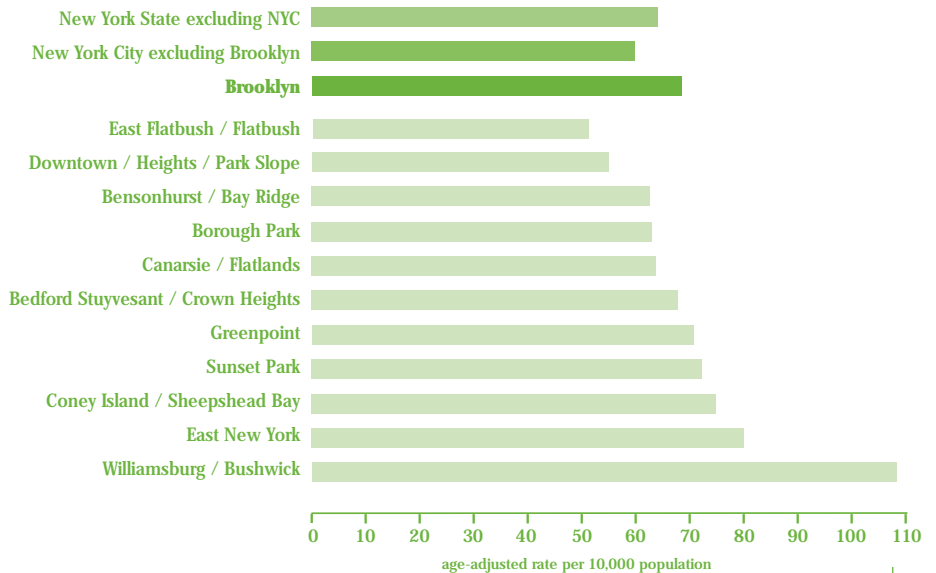
Source: HANYS - SPARCS Data, 2003

age-adjusted rate per 10,000 population

CONGESTIVE HEART FAILURE HOSPITALIZATIONS

In congestive heart failure, also known simply as heart failure, the heart is weakened and cannot pump blood easily to the heart and the body's other organs. When the blood does not flow well, it builds up (congests) in the blood vessels and heart.

- In 2002, over 19 percent of hospitalizations in Brooklyn for heart conditions were for congestive heart failure; and
- Almost three-quarters (72 percent) of these hospitalizations were among Brooklynites over 65 years old. *

Having one or more of these conditions increases the chance of congestive heart failure. Risk factors such as smoking, overweight/obesity, lack of regular exercise, and a history of drug or alcohol abuse also increase the chance of heart failure.

* Source: EpiQuery - SPARCS, NYC DOHMH 2002

Congestive Heart Failure Hospitalizations by Race/Ethnicity, 2002

Across all racial and ethnic groups, Brooklyn had a higher hospitalization rate for congestive heart failure than New York City. The borough's Black residents had the highest heart failure rate, adjusted for age, followed by its Hispanic residents.

Source: EpiQuery - SPARCS, NYC DOHMH, 2002
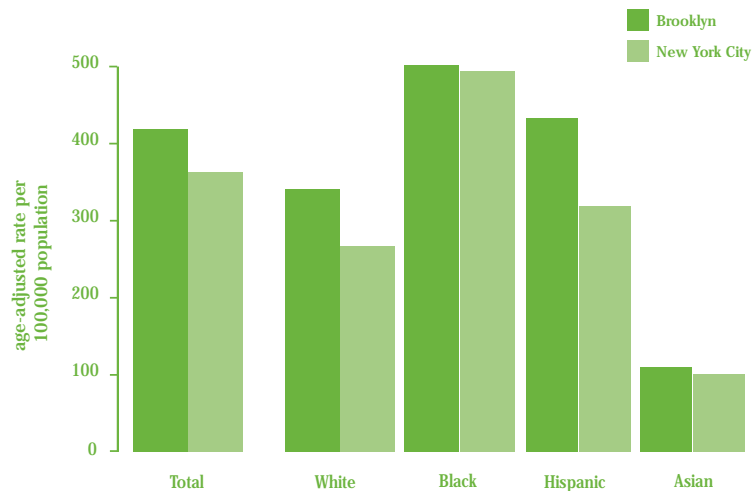
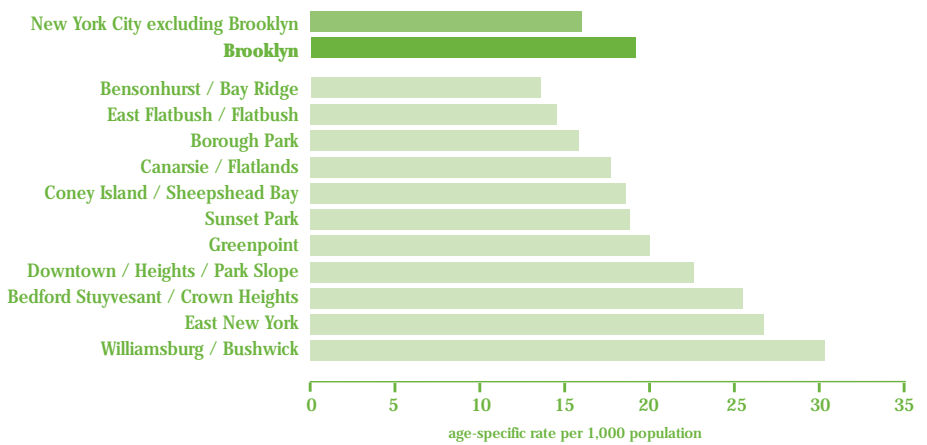## Congestive Heart Failure Hospitalizations by Age Group

Most congestive heart failure hospitalizations occur in people over 65 years old. It is also the leading reason for hospitalization among people in this age group. In 2002, nearly three-fourths of Brooklynites hospitalized for cardiovascular disease had congestive heart failure.*

* Source: EpiQuery – SPARCS, NYC DOHMH 2002

Congestive Heart Failure Hospitalizations for People Age 65-84, 2002

More Brooklynites between the ages of 65 and 84 received hospital care for congestive heart failure than did other New Yorkers in this age group. Several neighborhoods had equal or greater hospitalization rates for heart failure among people age 65 to 84 than the borough as a whole. The three with the highest rates were Williamsburg/Bushwick, East New York, and Bedford Stuyvesant/Crown Heights.

Source: EpiQuery - SPARCS, NYC DOHMH, 2002

New York City excluding Brooklyn
Brooklyn

Bensonhurst / Bay Ridge
East Flatbush / Flatbush
Borough Park
Canarsie / Flatlands
Coney Island / Sheepshead Bay
Sunset Park
Greenpoint
Downtown / Heights / Park Slope
Bedford Stuyvesant / Crown Heights
East New York
Williamsburg / Bushwick

0   5   10   15   20   25   30   35

age-specific rate per 1,000 population

Congestive Heart Failure Hospitalizations for People Age 85 and Over, 2002

Brooklynites older than 85 had a much higher rate of heart failure than other New Yorkers of the same age. Three neighborhoods—Williamsburg/ Bushwick, Greenpoint, and Coney Island/ Sheepshead Bay—had the highest hospitalization rates for the borough. All Brooklyn neighborhoods had congestive heart failure rates higher than the Healthy People 2010 goal.

Source: EpiQuery - SPARCS, NYC DOHMH, 2002

Healthy People 2010

New York City excluding Brooklyn
Brooklyn

Bedford Stuyvesant / Crown Heights
East Flatbush / Flatbush
Downtown / Heights / Park Slope
Canarsie / Flatlands
Borough Park
Sunset Park
East New York
Bensonhurst / Bay Ridge
Williamsburg / Bushwick
Greenpoint
Coney Island / Sheepshead Bay

0   10   20   30   40   50   60   70

age-specific rate per 1,000 population

13
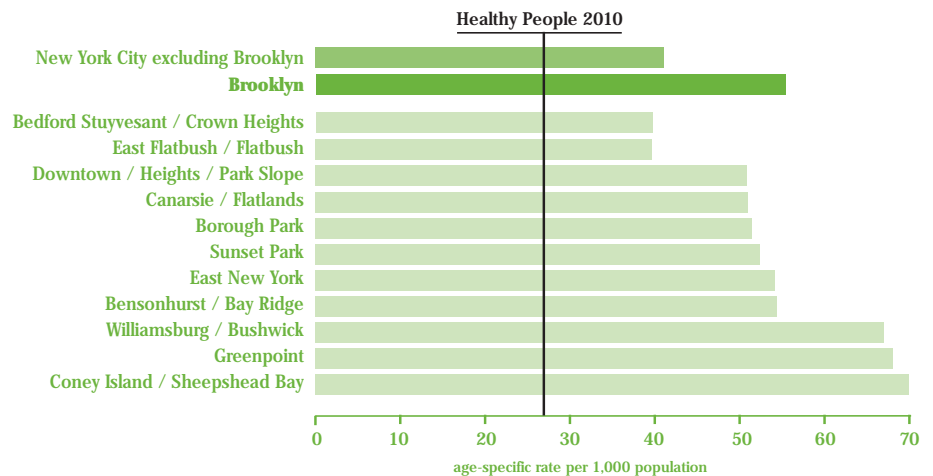
HYPERTENSIVE HEART DISEASE HOSPITALIZATIONS

Hypertensive heart disease occurs when high blood pressure is not controlled over time. Reducing the risk means controlling your high blood pressure with medicines, a healthy diet, and exercise.

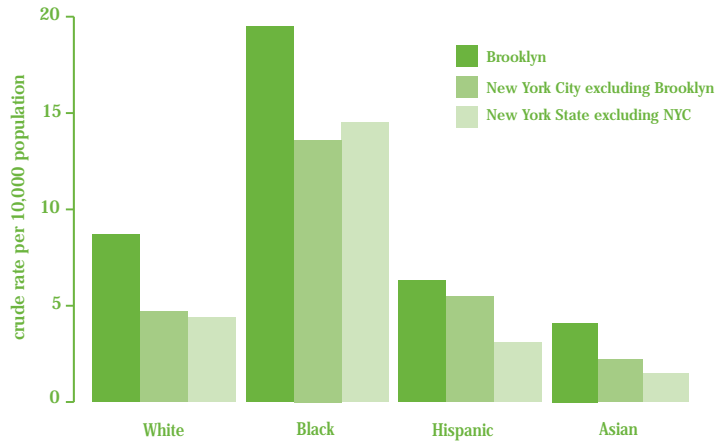In 2003, Brooklynites with hypertensive disease:
- Made up more than 6 percent of all hospitalizations for diseases of the heart and stroke in Brooklyn.
- Nearly half (48 percent) were between the ages of 35 and 64.
- Had more emergency room admissions than people living in the rest of the city and state.

Source: HANYS - SPARCS, 2003

Hypertensive Disease Hospitalizations by Race/Ethnicity, 2003

Among all races and ethnicities, Brooklyn had higher hospitalization rates for hypertensive heart disease than the rest of the city or state. Black New Yorkers, regardless of where they live, had much higher hospitalization rates for hypertensive heart disease than White, Hispanic, and Asian residents.

Source: HANYS - SPARCS Data, 2003

Hypertensive Disease Hospitalizations by Brooklyn Neighborhood, 2003

Brooklyn had a higher hospitalization rate for hypertensive heart disease than the rest of the city and state. Hospitalization rates for hypertensive heart disease were two times higher in Williamsburg/Bushwick and three times higher in Sunset Park than for the borough as a whole.

Source: HANYS - SPARCS Data, 2003
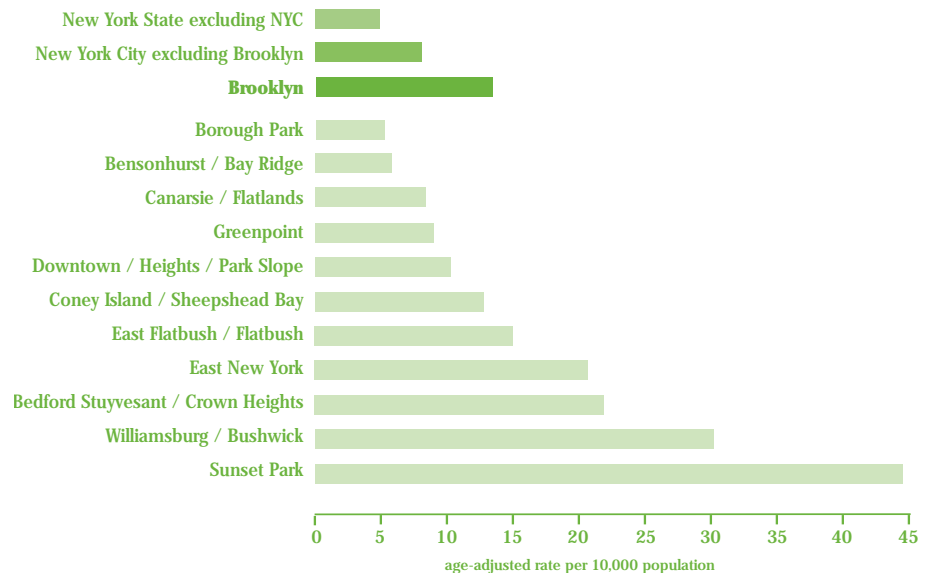
STROKE HOSPITALIZATIONS

A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts. When that happens, part of the brain cannot get the blood and oxygen it needs, so it starts to die. Once this area dies, it cannot return back to normal function or use.

In 2003, Brooklynites with stroke:
- Made up over 14 percent of hospitalizations for heart disease and stroke in Brooklyn.[1]
- 83 percent of these came through the emergency room.[1]
- Represented over 6 percent of all cardiovascular disease deaths in Brooklyn.[2]

[1] HANYS - SPARCS, 2003

[2] *Summary of Vital Statistics 2003 City of New York*, NYCDOHMH.

Stroke Hospitalizations by Race/Ethnicity, 2003

Throughout Brooklyn and the city and state, both White and Black residents had a much higher hospitalization rate for stroke than Hispanic and Asian residents. Black Brooklynites had a slightly lower hospitalization rate for stroke compared to the rest of the state, but not the city. White, Hispanic, and Asian residents of Brooklyn had a higher rate of hospitalization for stroke than those living in the rest of the city or state.

Source: HANYS - SPARCS Data, 2003
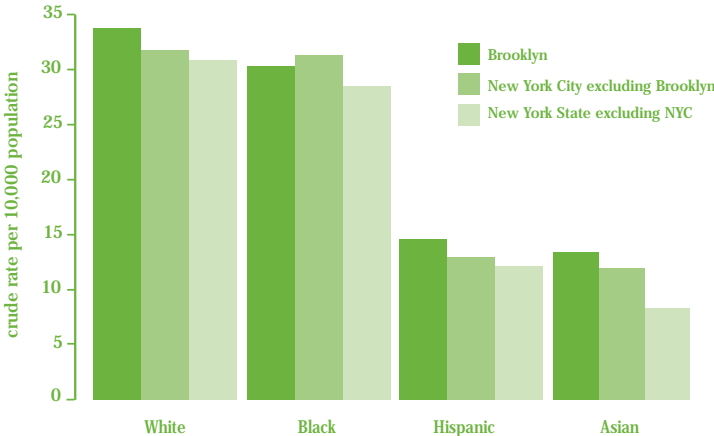
Stroke Hospitalizations by Brooklyn Neighborhood, 2003

Brooklyn had a higher hospitalization rate for stroke than the rest of the city and state. Five neighborhoods in Brooklyn had higher rates of hospitalizations than the borough, with Williamsburg/Bushwick having the highest. These neighborhoods also have a higher percentage of Black and Hispanic residents than other Brooklyn neighborhoods. (See the Appendix for a look at the racial and ethnic composition of Brooklyn's neighborhoods.)

Source: HANYS - SPARCS Data, 2003
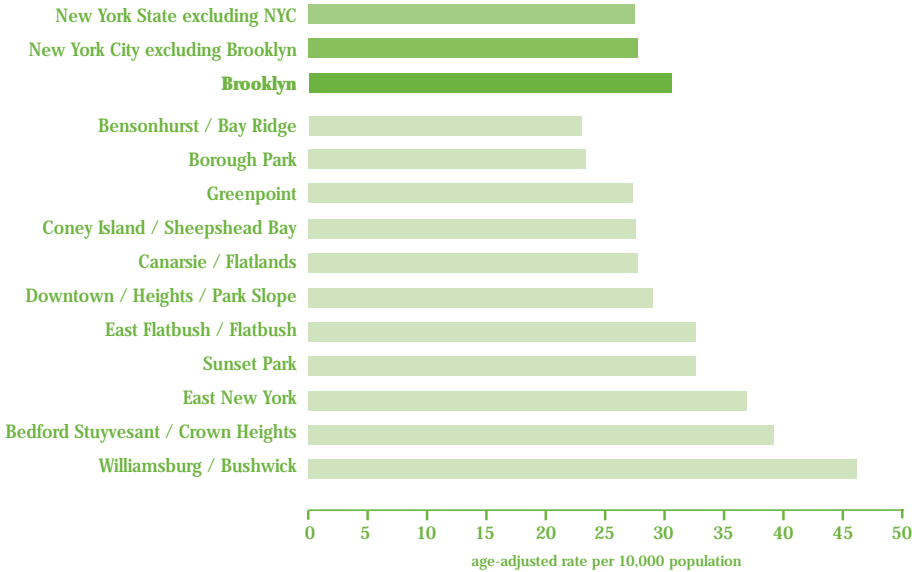
DEATHS FROM DISEASES OF THE HEART

Diseases of the heart are the leading cause of death among Brooklynites and all New Yorkers. In 2003, 85 percent of heart disease deaths occurred in persons over the age of 65.

Heart Disease Deaths for Ages 35 to 64 in New York City, 2003

Among New York City residents between the ages of 35 and 64, Blacks had a higher death rate from heart disease than any other racial/ethnic group.

Twenty-one percent of heart disease deaths in men occurred to those between the ages of 35 and 64 compared to only 9 percent among women in this age group (data not shown).

Source: *Summary of Vital Statistics 2003 The City of New York*, NYC DOHMH
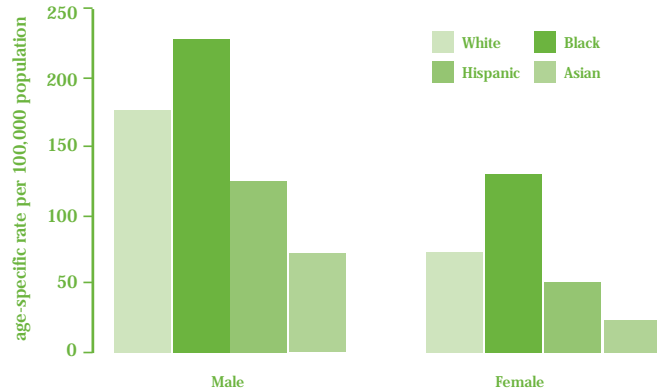
Heart Disease Deaths for New York City Residents Age 65 and Over, 2003

The death rates from heart disease were much higher among persons older than 65. For women, 91 percent of all heart disease deaths occurred in those over 65, compared to 78 percent for men (data not shown).

Source: *Summary of Vital Statistics 2003 The City of New York*, NYC DOHMH
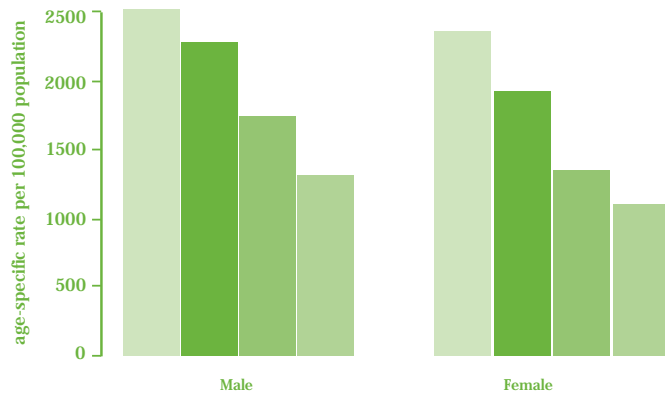
Heart Disease Deaths by Brooklyn Neighborhood, 2003

Brooklyn had a higher heart disease death rate than the rest of the city. Two Brooklyn neighborhoods— Bay Ridge/Bensonhurst and Coney Island/Sheepshead Bay—had the highest death rates in Brooklyn.

In 2003, these two neighborhoods along with Borough Park/Midwood, accounted for over half the number of deaths from heart disease in Brooklyn and over 50 percent of all deaths for those over 65.

Source: *Summary of Vital Statistics 2003 The City of New York*, NYC DOHMH
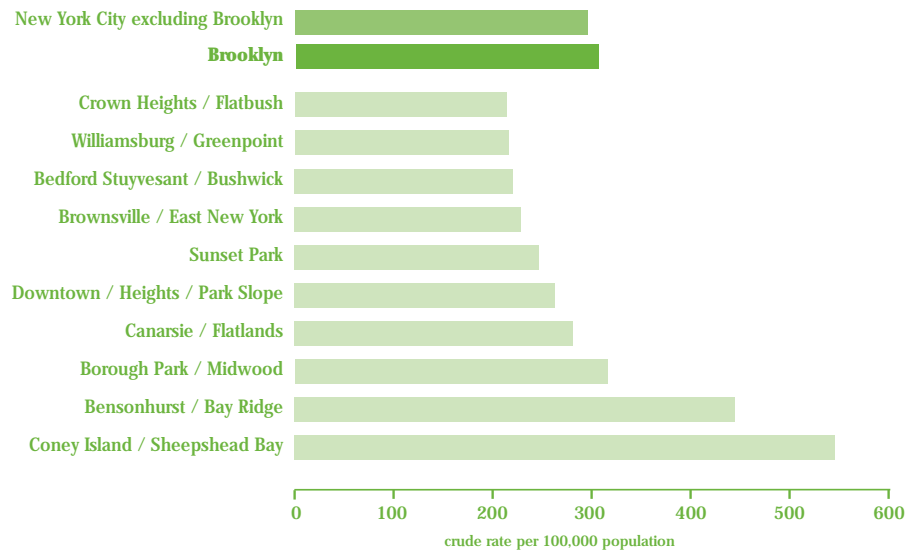
Stroke is one of the five leading causes of death in Brooklyn, New York City and State, and the rest of the nation. In 2003, 24 percent of deaths due to stroke in Brooklyn occurred to residents between the ages of 35 and 64. Almost 75 percent of stroke deaths occurred in persons over the age of 65.

Stroke Deaths among People Ages 35 to 64 in New York City, 2003

Black men and women in New York City had a higher rate of death due to stroke than Whites, Hispanics, and Asian Pacific Islanders, respectively.

Over 33 percent of stroke deaths in men occurred between the ages 35 to 64 compared to only 17 percent for women (data not shown).

**Source:** *Summary of Vital Statistics 2003 The City of New York*, NYC DOHMH
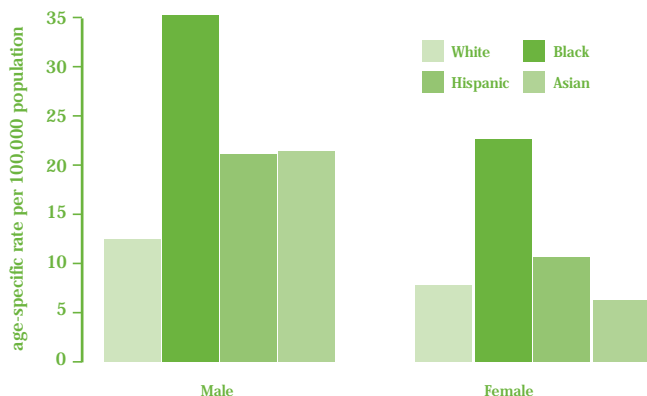
Stroke Deaths among People Over Age 65 in New York City, 2003

Among female residents of New York City older than 65, Blacks and Asian/Pacific Islanders had a higher death rate from stroke. Black male residents in this age group had the highest death rates from stroke.

Over 80 percent of stroke deaths for women occurred among those older than 65, compared to only 63 percent for men (data not shown).

Source: *Summary of Vital Statistics 2003 The City of New York*, NYC DOHMH
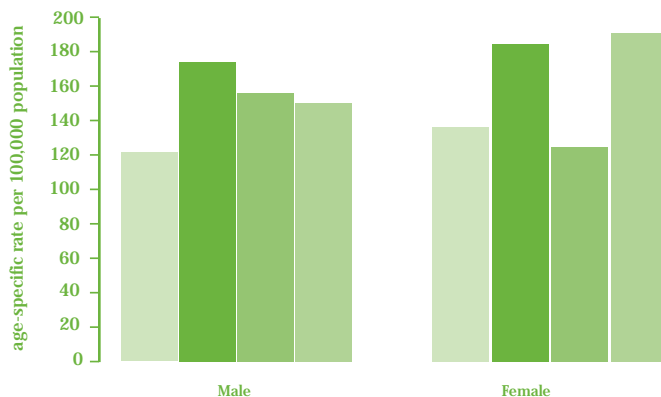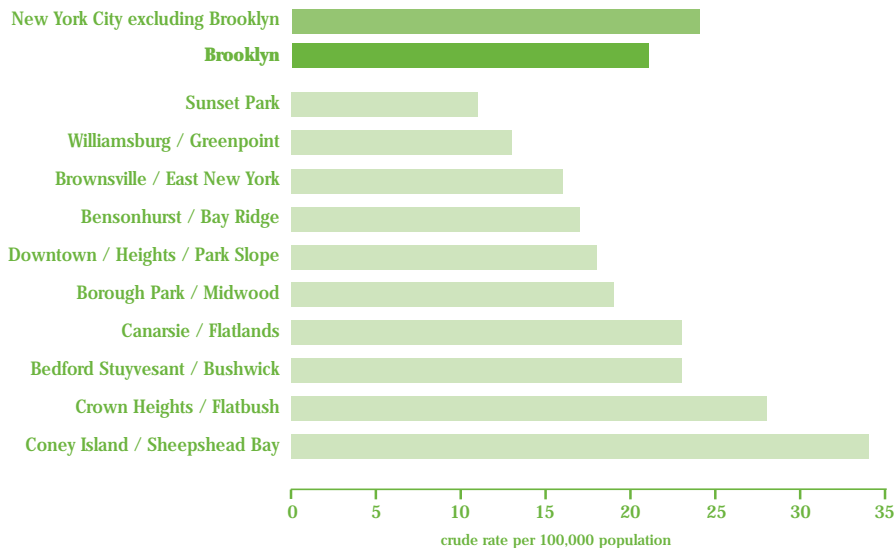
Stroke Deaths by Brooklyn Neighborhood, 2003

Brooklyn had a lower death rate from stroke than the rest of the city. However, two Brooklyn neighborhoods—Crown Heights/Flatbush and Coney Island/Sheepshead Bay—had higher death rates than the city, and four had higher rates than the borough.
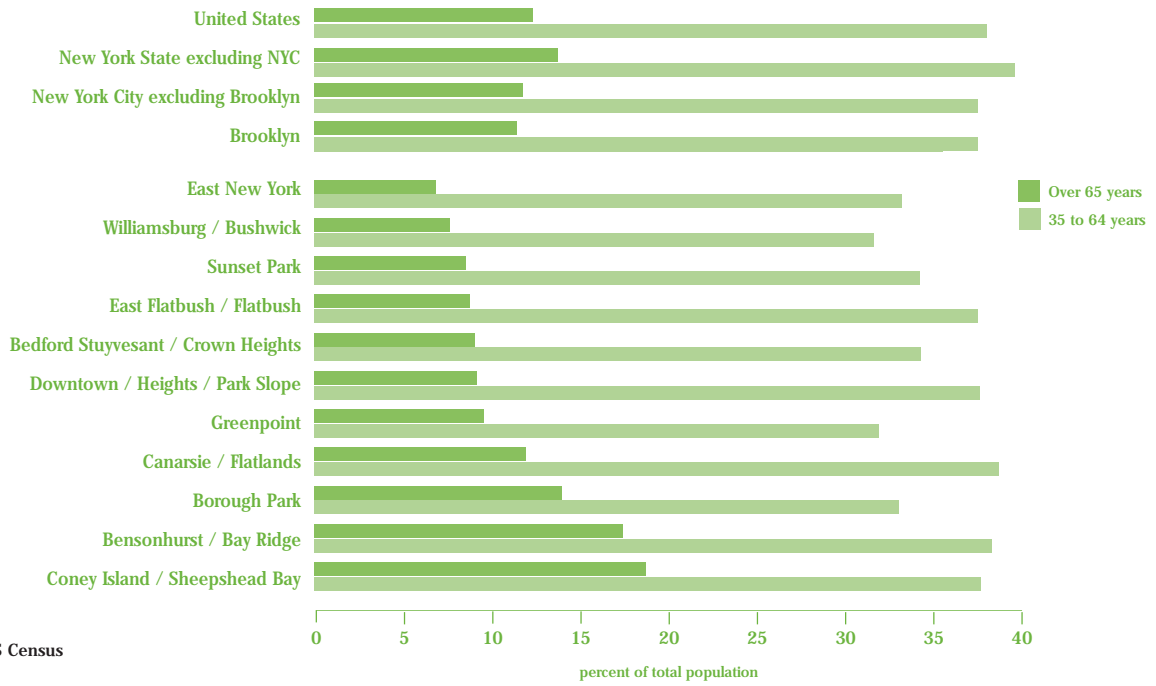
In 2003, Coney Island/Sheepshead Bay was the Brooklyn neighborhood with the largest percentage of people over 65.

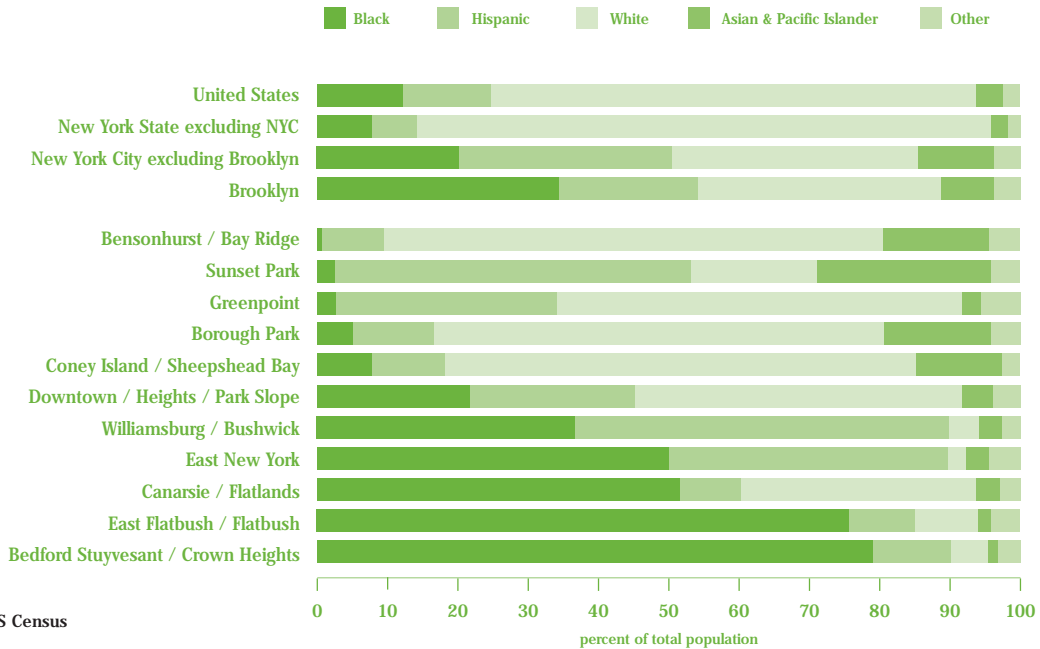**Source:** *Summary of Vital Statistics 2003 The City of New York*, NYC DOHMH

Distribution of Persons Age 35 to 64 and Over 65 Years, 2000

Legend:
- Over 65 years
- 35 to 64 years

Categories (top to bottom):
- United States
- New York State excluding NYC
- New York City excluding Brooklyn
- Brooklyn

- East New York
- Williamsburg / Bushwick
- Sunset Park
- East Flatbush / Flatbush
- Bedford Stuyvesant / Crown Heights
- Downtown / Heights / Park Slope
- Greenpoint
- Canarsie / Flatlands
- Borough Park
- Bensonhurst / Bay Ridge
- Coney Island / Sheepshead Bay

X-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40
percent of total population

Source: 2000 US Census

Distribution of Persons by Race/Ethnicity, 2000

Legend:
- Black
- Hispanic
- White
- Asian & Pacific Islander
- Other

Categories (top to bottom):
- United States
- New York State excluding NYC
- New York City excluding Brooklyn
- Brooklyn

- Bensonhurst / Bay Ridge
- Sunset Park
- Greenpoint
- Borough Park
- Coney Island / Sheepshead Bay
- Downtown / Heights / Park Slope
- Williamsburg / Bushwick
- East New York
- Canarsie / Flatlands
- East Flatbush / Flatbush
- Bedford Stuyvesant / Crown Heights

X-axis: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
percent of total population

Source: 2000 US Census

GLOSSARY

Binge Drinking: Consuming 5 or more drinks (for men) and 4 or more drinks (for women) in a couple.

Cardiovascular Disease: A broad range of illnesses and diseases related to heart and blood vessels of the body.

Cholesterol: A fat-like substance found in blood, muscle, liver, brain, and other tissues in the body.

HDL Cholesterol: This is the "good" cholesterol. It takes the bad cholesterol (LDL) out of the bloodstream.

LDL Cholesterol: This is the "bad" cholesterol. It helps bring/carry the cholesterol through the blood and deposits the fats in the lining of your blood vessels.

Congestive Heart Failure: A condition in which the heart cannot efficiently pump blood throughout the body.

Coronary Heart Disease: A narrowing of the arteries leading to the heart.

Diabetes or Diabetes Mellitus: A condition that results when the pancreas is not able to produce enough insulin or the body cannot use it properly.

Genetic: Something that is inherited (passed on) from parents to child through their genes.

Healthy People 2010: A national health agenda sponsored by the U.S. Department of Health and Human Services that identifies major diseases and health conditions and sets targets to prevent or reduce these threats by the year 2010.

Hypertension: Also known as high blood pressure, this condition results when the pressure or force of blood through the arteries is too strong.

Hypertensive Disease: A disease of the heart or other organs that is caused by high blood pressure.

Insulin: A hormone made by the pancreas to convert (change) glucose (blood sugar) into energy for the body.

Obese or Obesity: A medical term to describe an unhealthy amount of body fat. An adult who has a body mass index (BMI) over 30, measured by the person's weight and height, is obese.

Overweight: A medical term to describe a person whose weight is greater than what is normal for their height. For adults, it is a person who has a body mass index (BMI) from 25.0 to 29.9.

Physical Activity and Exercise: Activity that requires your heart and lungs to work harder and become stronger. For example, walking is a good form of physical activity.

Premature Death: To die earlier than expected, especially if the death could have been prevented.

Risk Factor: A behavior or condition that increases the chance of developing a disease or medical problem.

Rate: A calculated number that is used to express the number of events within a group of individuals in a given period of time. For example, 150 events per 100,000 people per year.

Stroke: A disease caused by the sudden reduction of blood flow to the brain.

Trans Fatty Acid: A type of fat found in partially hydrogenated vegetable oils and shortening, commercial baked foods, and many fried foods. Trans fats raise your bad cholesterol (LDL) and lower good cholesterol (HDL).

Triglyceride: A form of fat that comes from the foods we eat but also can be made and stored in the body; used as an energy source.

Cardiovascular disease mortality data for New York City and Brooklyn come from *Summary of Vital Statistics 2003 of the City of New York*, Office of Vital Statistics, New York City Department of Health and Mental Hygiene. Mortality data for the State of New York for 2003 were not available at the time this report was published; therefore, no comparison could be made. Data on the number of stroke deaths for Asian and Pacific Islanders (API) in 2003 by sex and age group (under 65 years and over 65 years) were small, so caution should be used in making comparisons. (Stroke deaths 2003: API males under age 65 = 34 deaths and over age 65 = 39 deaths; API females under age 65 = 10 deaths and over age 65 = 62 deaths.).

Risk factors for cardiovascular disease in adults past the age of 20 years were obtained from the 2002 Community Health Survey, an online epidemiological data query system from the New York City Department of Health and Mental Hygiene. The Community Health Survey does not query New Yorkers on each health topic every year, so some health risk factors provided in this report are cited by the year surveyed. For this report, data from the Community Health Surveys for 2002 and 2003 were available. The low survey response rates in 2002 for zip codes in the Canarsie, Flatlands, Flatbush, and East Flatbush Brooklyn neighborhoods required the aggregation of these zip codes into one neighborhood labeled Canarsie / Flatbush by the NYC DOHMH.

Hospitalization data are compiled by the Statewide Planning and Research Cooperative System (SPARCS) and provided through the Hospital Association of New York State (HANYS). Congestive heart failure data from SPARCS were obtained using EpiQuery, an online hospital discharge data query system from the New York City Department of Health and Mental Hygiene. All rates and demographic data were obtained from the 2000 U.S. Census. Every effort was made to provide as much local data as possible.

Definitions for cardiovascular disease mortality are based on the ICD 10 codes used by the Office of Vital Statistics, New York City Department of Health and Mental Hygiene. All hospitalization data are based on ICD 9 codes because SPARCS has not adapted the ICD 10 version into its coding system at the time of this publication. For clarity purposes, diseases of the heart include the following conditions: acute rheumatic fever, rheumatic heart disease, hypertensive heart disease, hypertensive heart and renal disease, coronary heart disease, pulmonary heart diseases, and other forms of heart disease. This category, like cancers, is made up of a broad range of diseases that affect different parts of the human circulatory system. Diseases of the heart make up nearly 90 percent of all cardiovascular disease deaths.

RESOURCES

NYC Department of Health and Mental Hygiene *Health Reports*:

Eat Less Trans Fats
www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews4-02.pdf

Control Your Blood Pressure
www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews3-01.pdf

Control Your Cholesterol
www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews2-12.pdf

Diabetes Is Epidemic
www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews2-11.pdf

Healthy Weight
www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews2-08.pdf

American Heart Association
www.americanheart.org

American Stroke Association
www.americanstroke.org

Centers for Disease Control and Prevention - Cardiovascular Health
www.cdc.gov/cvh

National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov

National Heart Attack Alert Program
www.nhlbi.nih.gov/about/nhaap

Regardless of your age, race, or ethnicity, if you:

- **Are overweight or obese**
- **Have diabetes**
- **Have high blood pressure**
- **Are not physically active**
- **Smoke**
- **Have a family history of heart disease**

You should have your blood pressure and blood cholesterol checked regularly.

Take your medicines, eat heart healthy meals, and exercise regularly.