

Stroke Among
Chinese American
in New York City

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How are we doing?

Are we more at risk for stroke ?

What do we do for a living ?

Are we poorer ?

The Office of Minority Health

1-800-444-6472

<http://www.omhrc.gov/templates/browse.aspx?lvl=2&lvlID=53>

Stroke and Asians and Pacific Islanders

Overall, Asians/Pacific Islander adults are less likely than white adults to die from a stroke. In general, Asian/Pacific Islander adults have lower rates of being overweight or obese, lower rates of hypertension, and they are less likely to be current cigarette smokers.

At a glance – Diagnosed Cases of Stroke:

**Age-adjusted percentages of stroke among
persons 18 years of age and over, 2006**

Asian	Non-Hispanic White	Asian/ Non-Hispanic White Ratio
1.8	2.4	0.8

Source: CDC 2007. Summary Health Statistics for U.S. Adults: 2006. Table 2.

http://www.cdc.gov/nchs/data/series/sr_10/sr10_235.pdf

The American Community—
Asians: 2004

American Community Survey Reports

Issued February 2007

ACS-05



USCENSUSBUREAU

Helping You Make Informed Decisions

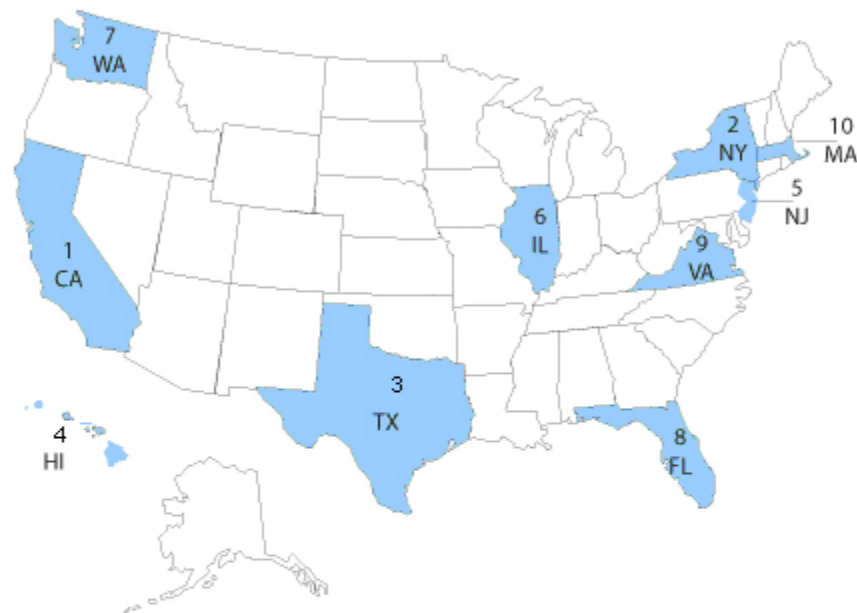
U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU

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Asian American/Pacific Islander Profile



(Map of the US with the top 10 states displaying the largest Asian American population according to the Census Bureau)

CA - NY - HI - TX - NJ - IL - WA - FL - VA - MA

Overview (Demographics): This racial group is defined as people having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent. According to the 2006 Census Bureau population estimate, there are 14.9 million Asian Americans living in the United States. Asian Americans account for 5 percent of the nation's population. This number represents an increase of 63 percent from the 1990 census, thus making Asian-Americans the fastest growing of all major racial/ethnic groups. The following states have the largest Asian-American populations: California, New York, Hawaii, Texas and New Jersey.

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Household Population by Race and Hispanic Origin: 2004

(Data based on sample limited to the household population and exclude the population living in institutions, college dormitories, and other group quarters. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see http://factfinder.census.gov/home/en/datanotes/exp_acs2004.html)

Race and Hispanic origin	Population	Percent of total population	Margin of error ¹ (±)
Total	285,691,501	100.0	(X)
White alone, not Hispanic	192,362,875	67.3	0.01
Asian alone	12,097,281	4.2	0.02
Not Hispanic	11,955,401	4.2	0.02
Hispanic	141,880	0.1	0.01
Asian alone or in combination	13,466,479	4.7	0.02
Not Hispanic	13,138,804	4.6	0.02
Hispanic	327,675	0.1	–
Asian in combination	1,369,198	0.5	0.01
Not Hispanic	1,183,403	0.4	0.01
Hispanic	185,795	0.1	–
Asian <i>and</i> White	881,813	0.3	0.01

(X) Not applicable.

– Represents or rounds to zero.

¹ This number, when added to and subtracted from the estimate, produces the 90-percent confidence interval around the estimate.

Source: U.S. Census Bureau, 2004 American Community Survey, Selected Population Profiles, S0201.

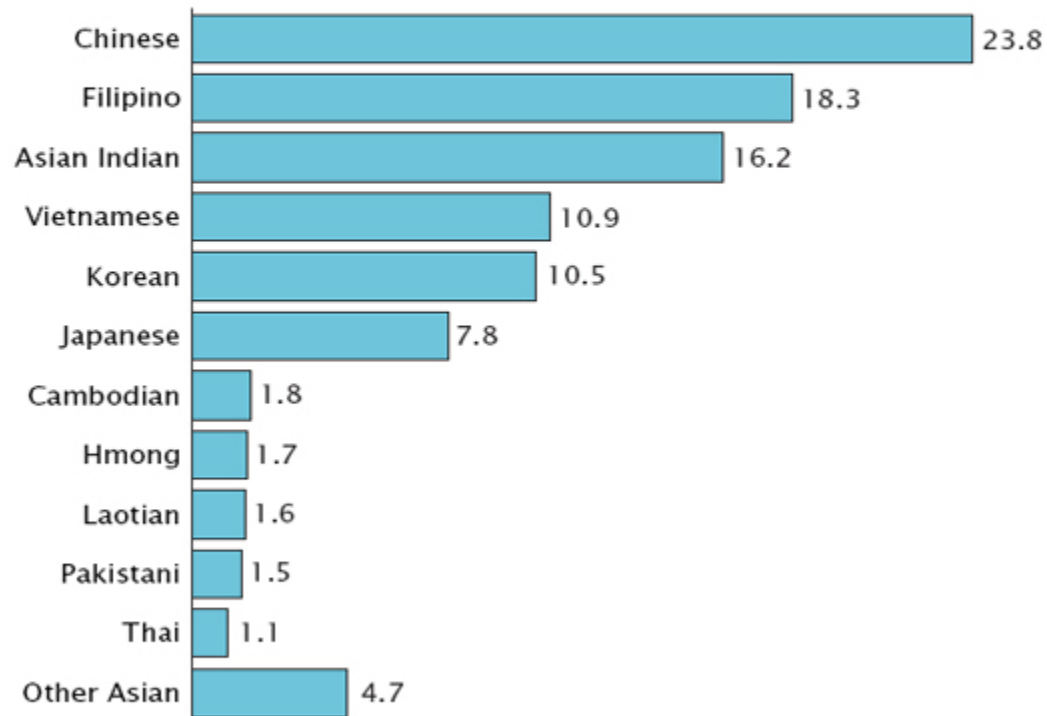
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Asian Population by Detailed Group: 2000

(Percent distribution. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf4.pdf)



Source: U.S. Census Bureau, Census 2000 special tabulation.

10 M

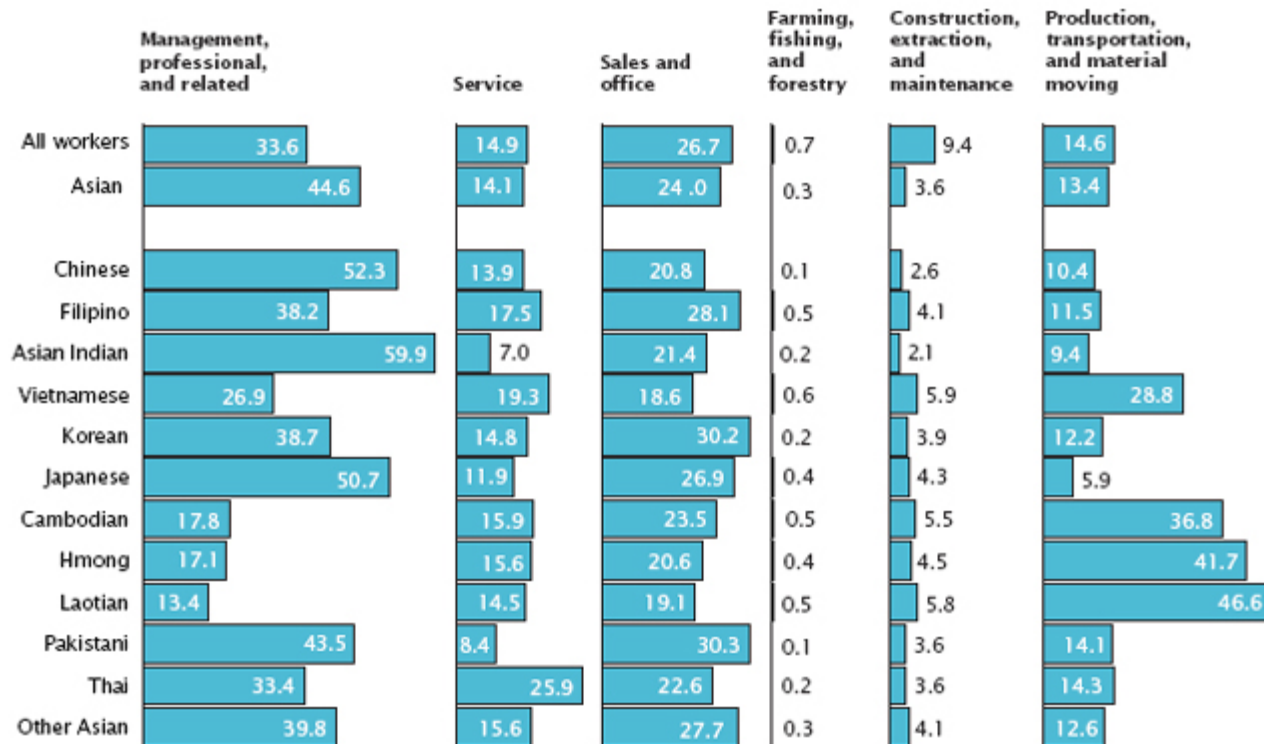
The Office of Minority Health

1-800-444-6472

<http://www.omhrc.gov/templates/browse.aspx?lvl=2&lvlID=53>

Occupation: 2000

(Percent distribution of employed civilian population 16 and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf4.pdf)



Source: U.S. Census Bureau, Census 2000 special tabulation.

The Office of Minority Health

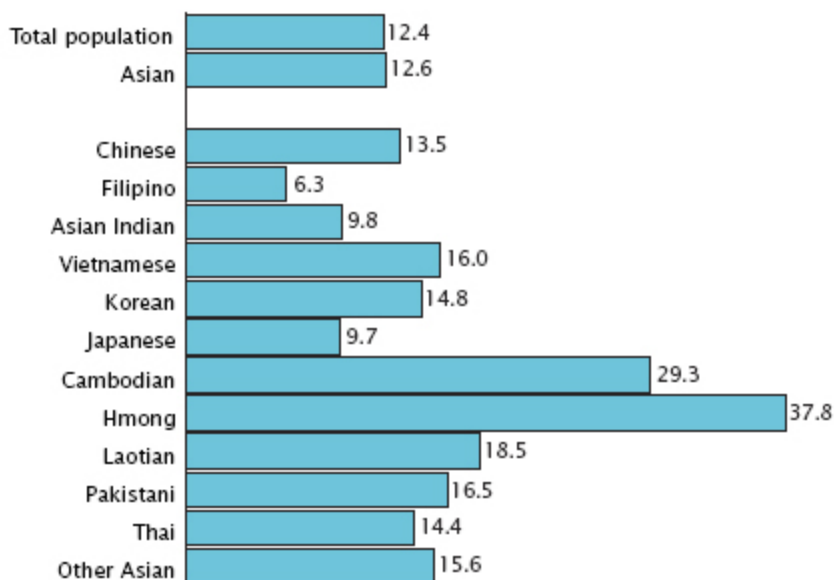
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<http://www.omhrc.gov/templates/browse.aspx?lvl=2&lvlID=53>

Figure 14.

Poverty Rate: 1999

(Percent in poverty. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf4.pdf)



Note: Poverty status was determined for everyone except those in institutions, military group quarters, or college dormitories, and unrelated individuals under 15 years old.

Source: U.S. Census Bureau, Census 2000 special tabulation.

The poverty rates of specific Asian groups varied.

- Poverty rates for the Asian population and the total population were similar, even though median earnings for Asians were higher.⁹
- Hmong had the highest individual poverty rates, followed by Cambodians.
- The lowest individual poverty rates were for Filipinos, Japanese, and Asian Indians.

⁹ In 1999, the poverty threshold for a family of four was \$17,029. Poverty statistics exclude unrelated individuals under 15. For more information, see Alemayehu Bishaw and John Iceland, 2003, *Poverty: 1999*, U.S. Census Bureau, Census 2000 Brief, C2KBR-19. This report is available on the U.S. Census Bureau's Internet site at www.census.gov/prod/2003pubs/c2kbr-19.pdf.

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Overweight

NHANES data is not available.

National Health Interview Survey, NHIS

Age-adjusted percentage of persons 18 years of age and over who are overweight but not obese, 2006. (Persons are considered overweight if they have a Body Mass Index (BMI) of 25 or greater.)

Asians	Native Hawaiian/Pacific Islanders	Non-Hispanic White	Asians / Non-Hispanic White Ratio	Native Hawaiian/Pacific Islanders / Non-Hispanic White Ratio
27.6	37.6	34.5	0.8	1.1

Source: CDC 2007. Summary Health Statistics for U.S. Adults: 2006. Table 31.

What is the Statistics
in Chinatown ,NYC?



Census Profile: Asian American Population in Manhattan

Asian American Federation of New York Census Information Center

NYC Chinatown

60% not high school graduate

(City 28%)

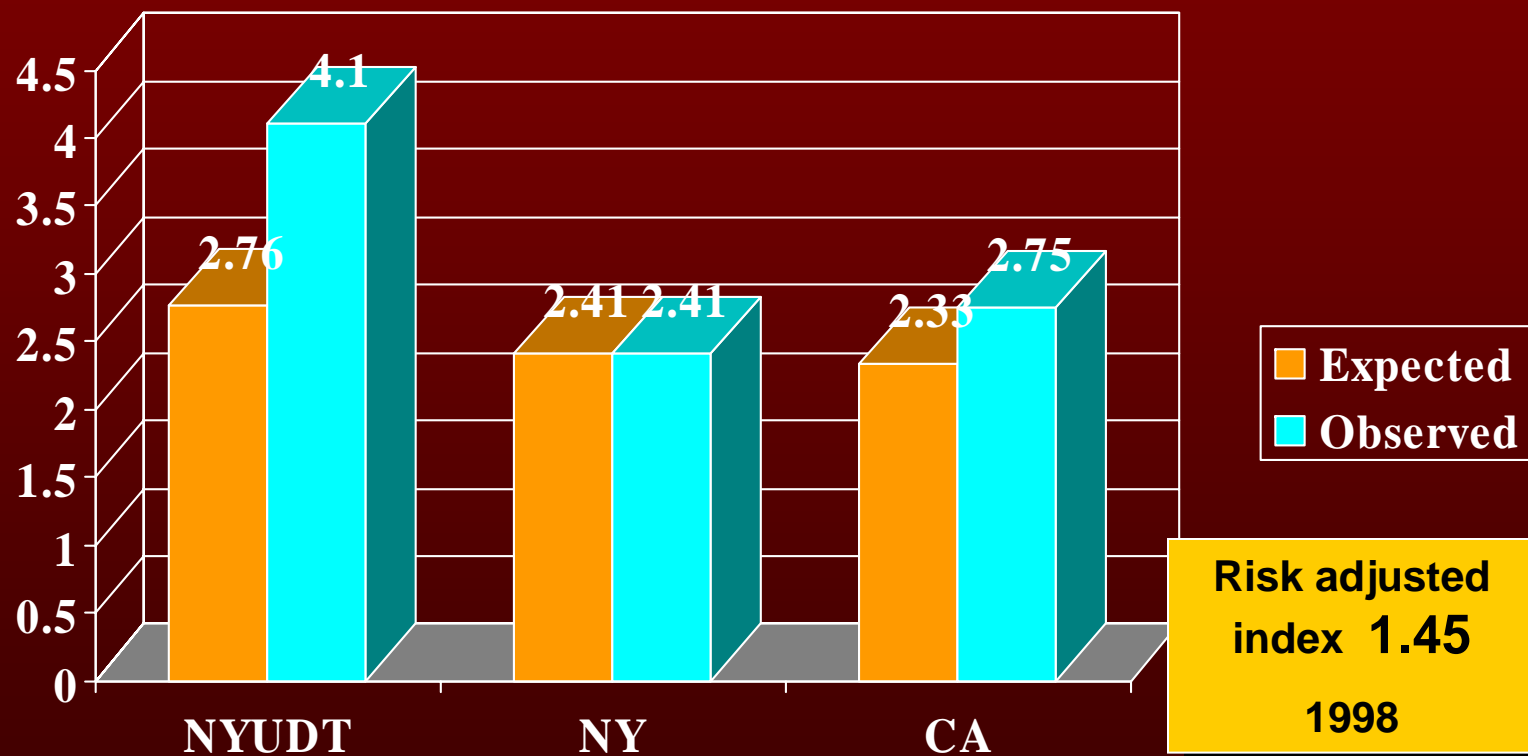
31% below poverty level

(City 21%)

Below poverty level in USA 12.4%; Chinese 13.5%

CEREBROVASCULAR DISEASE

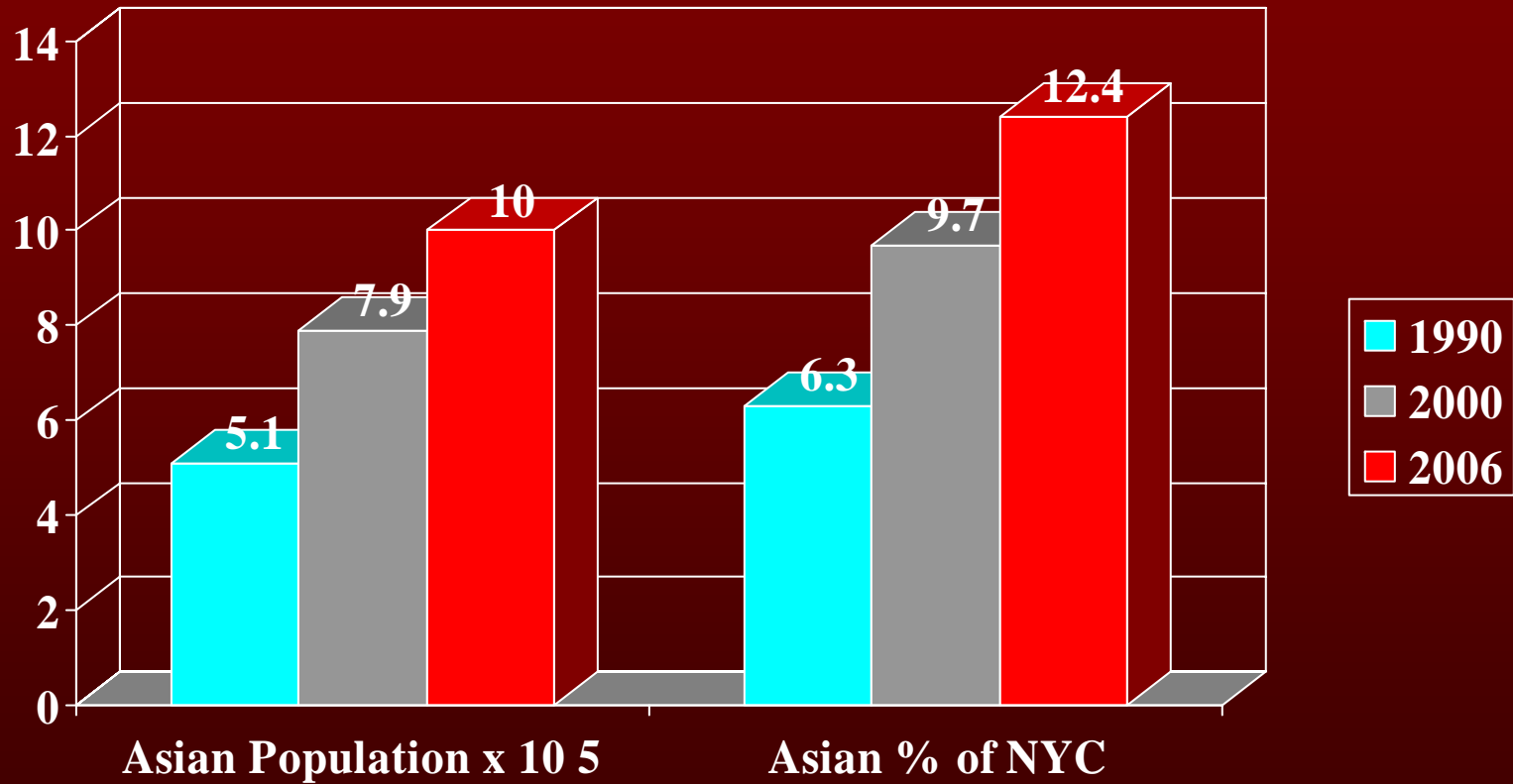
non-elderly adult < 65



Chinese Stroke Patients 1994-5 vs. Northern Manhattan Stroke Study

	<i>NYDH</i>	<i>NMSS</i>	<i>P value</i>
<i>Age</i>	73	80	<0.001
<i>Untreated HTP</i>	23 %	6 %	<0.001
<i>LVH</i>	33 %	9 %	<0.01
<i>High initial DBP</i>	32 %	17 %	<0.5
<i>Smoke</i>	11 %	17 %	
<i>Pack/day</i>	1.3	0.17	<0.001

Asian Population in NYC 1990-2006

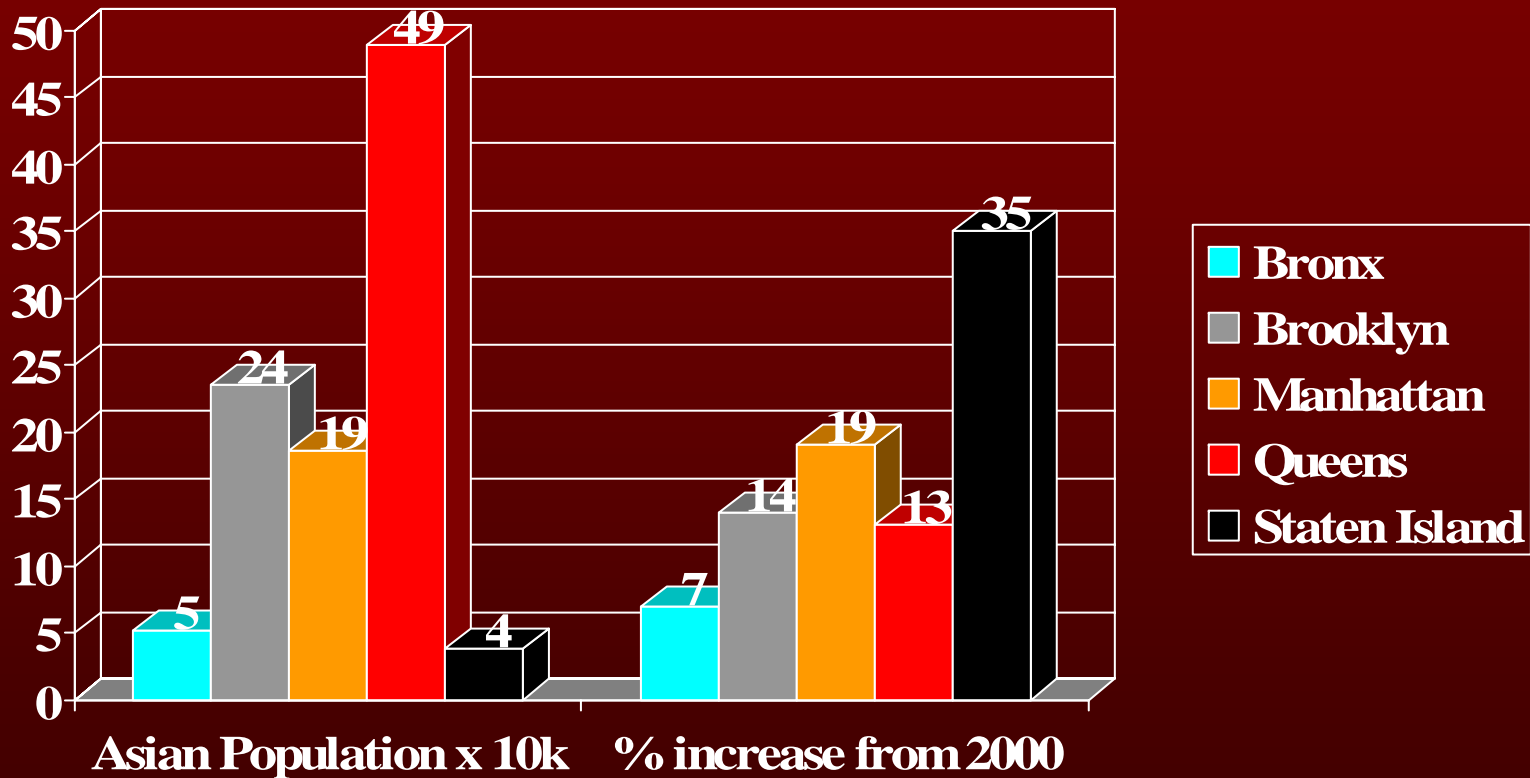


1980 3.3
1990 6.7
1993 7.2

45% of the 2006 Asian Population is Chinese

Asian Population in NYC

2006



Total :999,030

Chinatown, Manhattan , NYC

Major Chinatown Census Statistics at a Glance

Population	
2000 Total Population	84,840
2000 Asian Population	55,864
Asian Population as a Percentage of the Total Population	66%
Immigration	
2000 Total Foreign-Born Population	50,141
Foreign-Born Percentage of General Population	59%
2000 Asian Foreign-Born Population	44,583
Educational Attainment (Adults 25 and Older)	
Number of Adults Without a High School Diploma	35,721
Percentage of Adults Without a High School Diploma	60%
Number of Asian Adults Without a High School Diploma	27,189
Percentage of Asian Adults Without a High School Diploma	70%
Limited English Proficiency (Speaks English "Not Well" or "Not at All")	
Age 18-64	34,474
65 and Older	8,233
Household Income	
Number of Households Earning Less Than \$20,000	13,544
Percentage of Households Earning Less Than \$20,000	45%
Number of Households Earning More Than \$100,000	1,950
Percentage of Households Earning More Than \$100,000	6%
Poverty	
Number of Individuals Living in Poverty	25,755
Percentage of Total Population Living in Poverty	31%
Number of Elderly (Over the Age of 65) Living in Poverty	4,573
Percent of Elderly Living in Poverty	40%
Number of Children (Under 18) Living in Poverty	6,025
Percent of Children Living in Poverty	35%

Population Change Rates in Chinatown by Race and Age

Population Group	1990 General	2000 General	% Change	1990 Asian	2000 Asian	% Change
Children	16,753	14,807	-12%	10,258	9,837	-4%
Working-Age Adults	53,782	56,648	5%	32,290	35,932	11%
Elderly	11,530	13,289	15%	6,854	8,881	30%
Total	82,065	84,744	3%	49,402	54,650	11%

Asian Poverty - Chinatown and New York City

Overall Population	
Number of Asians Living in Poverty	17,022
Percentage of Asians Living in Poverty	31%
Percentage of New York City Asians Living in Poverty	20%
Asian Children	
Number of Asian Children Living in Poverty	3,762
Percentage of Asian Children Living in Poverty	39%
Percentage of New York City Asian Children Living in Poverty	24%
Asian Elders	
Number of Asian Elders Living in Poverty	3,421
Percentage of Asian Elders Living in Poverty	39%
Percentage of New York City Asian Elderly Living in Poverty	24%

	% who currently smoke		
	Total	Men	Women
All New Yorkers	17.5	20	15
Race/Ethnicity			
White	20	21	18
Black	18	21	16
Hispanic	17	19	15
Asian	11	16	5
Nativity			
U.S.-born	21	21	22
Foreign-born	12	18	7
Borough			
Bronx	19	20	18
Brooklyn	17	21	13
Manhattan	16	18	14
Queens	16	18	15
Staten Island	27	29	25
Income (% of poverty level)			
<200	20	24	18
200-399	16	17	15
400+	16	18	14
Age Group			
18-24	16	17	14
25-44	20	24	16
45-64	19	21	17
65 and older	10	10	10

Differences In Clinical Characteristics Among Stroke Patients NYDH 1995-8

	Chinese	Whites	p-value
Patient number	454	115	
Age (years)	71.4	71.7	0.97
Male (%)	51	54	0.24
BMI (Kg/M2)	22.8	25.8	0.02
SBP (mmHg)	155	155	0.98
DBP (mmHg)	87	86	0.86
Hypertension (%)	77	64	0.03
LVH on EKG (%)	37	25	0.02
History of IHD (%)	28	46	<0.01
Atrial fibrillation on EKG (%)	17	20	0.59

ESPS2: HTN60.5, IHD 35.1, AF 6.5%,Age 66.7,male 58

Differences In Clinical Characteristics Among Stroke Patients NYDH 1995-8

	Chinese	Whites	p-value
Cholesterol (mg/dl)	204	192	0.01
Triglyceride	131	126	0.05
Glucose (mg/dl)	161	145	<0.01
History of Diabetes (%)	33	21	0.01
Drink alcohol (%)	8	25	<0.01
Current smoker(%)	13	20	<0.01
Hemorrhagic stroke (%)	24	17	0.02
Age adjusted death rate (%)	13.8	14.8	0.1

ESPS 2: Cholesterol > 22.9, DM 15.3, current smoker 24.1, alcohol 5.6%

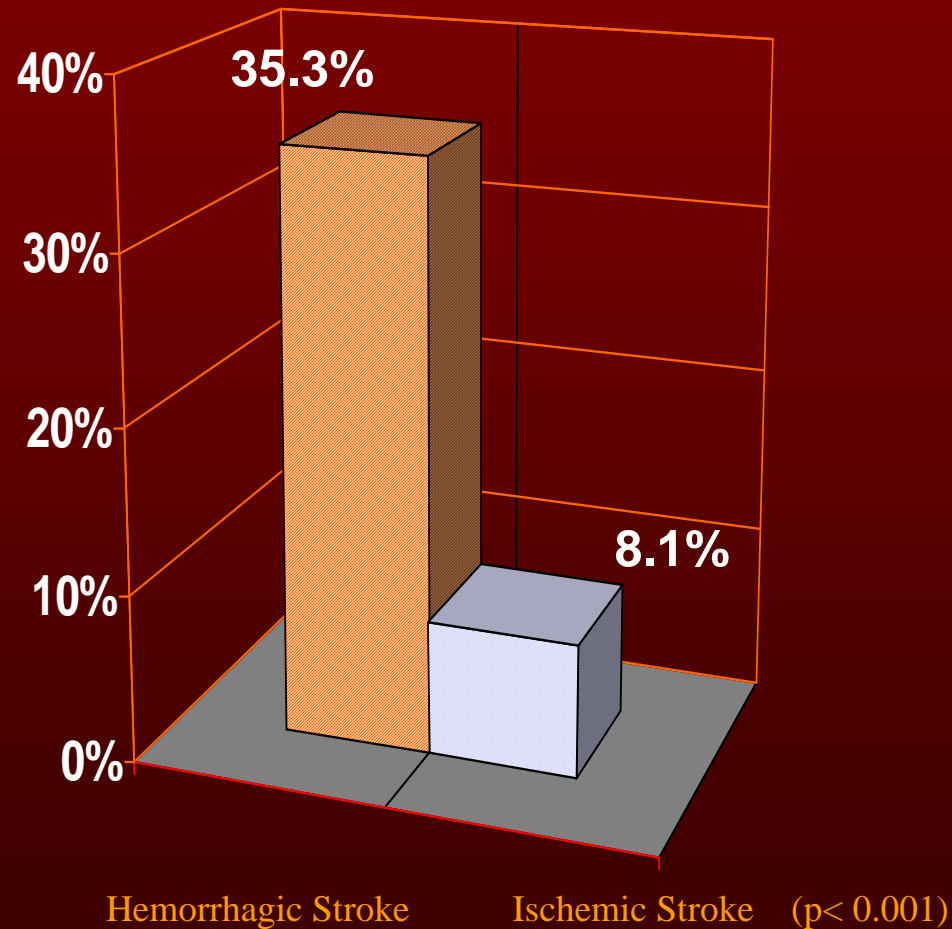
Table 2: Distribution of stroke incidences among Asians in the US and in Asia.

Country	Total stroke incidence	Distribution of stroke subtypes		
		ISC	ICH	SAH
United States	167 ⁷	62.0% ⁷	17.4% ⁷	6.5% ⁷
China	486 (Northern China) ²⁶ 81 (Southern China)	62.4% ²⁸	27% ²⁸	1.8% ²⁸
India	N/A	83% ²⁴	17% ²⁴	
Indonesia	N/A	42.9% ³⁴	18.5% ³⁴	1.4% ³⁴
Japan	640/340 (men/women) ³⁵ 417/329 (men/women) ⁴	51.4% ⁴¹	38.7% ⁴¹	9.3% ⁴¹
Korea	280 ²⁴	48.4% ²³	31.4% ²³	18.0% ²³
Singapore	180 ⁴⁶	66% ²⁴	27% ²⁴	
Taiwan	330 ³	71% ³	22% ³	1% ³

Stroke in Asians and Pacific Islanders

BY MAI N. NGUYEN-HUYNH, MD AND DAVID C. BONOVICH, MD

Comparison of Death Ratios Between Hemorrhagic and Ischemic Stroke



New York Downtown Hospital's Stroke Patients from January 1995 to July 1998

CLINICAL CHARACTERISTICS OF HEMORRHAGIC AND ISCHEMIC STROKE AMONG CHINESE PATIENTS

	Hemorrhagic	Ischemic	P-value
Patient number	110	334	
Age (years)	68.4	72.4	0.006
Male (%)	56	49	0.28
BMI (Kg/M ²)	22.8	22.8	0.953
SBP (mmHg)	163	153	0.01
DBP (mmHg)	91	86	0.032
LVH on EKG (%)	47.3	35.8	0.033
Hypertension (%)	78.2	76.2	0.69
Atrial fibrillation on EKG (%)	13.6	17.7	0.379

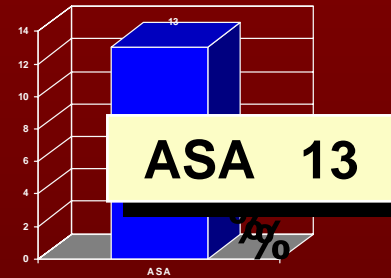
CLINICAL CHARACTERISTICS OF HEMORRHAGIC AND ISCHEMIC STROKE AMONG CHINESE PATIENTS

	Hemorrhagic	Ischemic	P-value
Patient number	110	334	
Cholesterol (mg/dl)	207	204	0.659
Triglyceride	106	137	<0.001
Glucose (mg/dl)	155	182	0.023
History of Diabetes (%)	20.9	36.9	0.001
Platelet	204	226	0.009
White Blood Cell	11666	9296	<0.001
Current smoker(%)	13	13	0.97
Drink alcohol (%)	10	7.6	0.53
Complications after stroke (%)	62.7	28.2	<0.001
Death at discharge (%)	34.5	6.1	<0.001

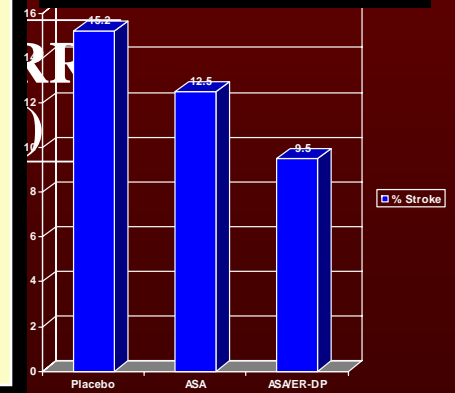
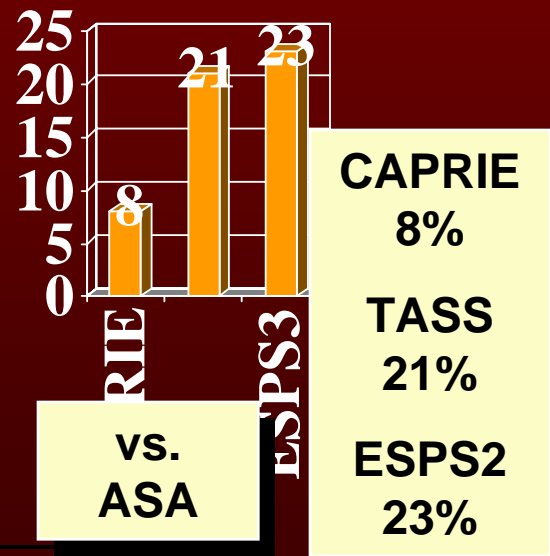
Clinical Characteristics, Stroke patients NYUDTH 95-8. ASA ,San Antonio, Texas. Feb7 2002

RR / Relative Risk Reduction

Risk Factor	RR
Hypertension	3.0 - 5.0
Cardiac disease	2.0 - 4.0
Atrial Fibrillation	5.0 - 18.0
Diabetes Mellitus	1.5 - 3.0
Cigarette Smoking	1.5 - 3.0
Heavy Alcohol	1.0 - 4.0



Stroke 2 Y 15.2
 ASA 12.5
 ASA/ER DP 9.5



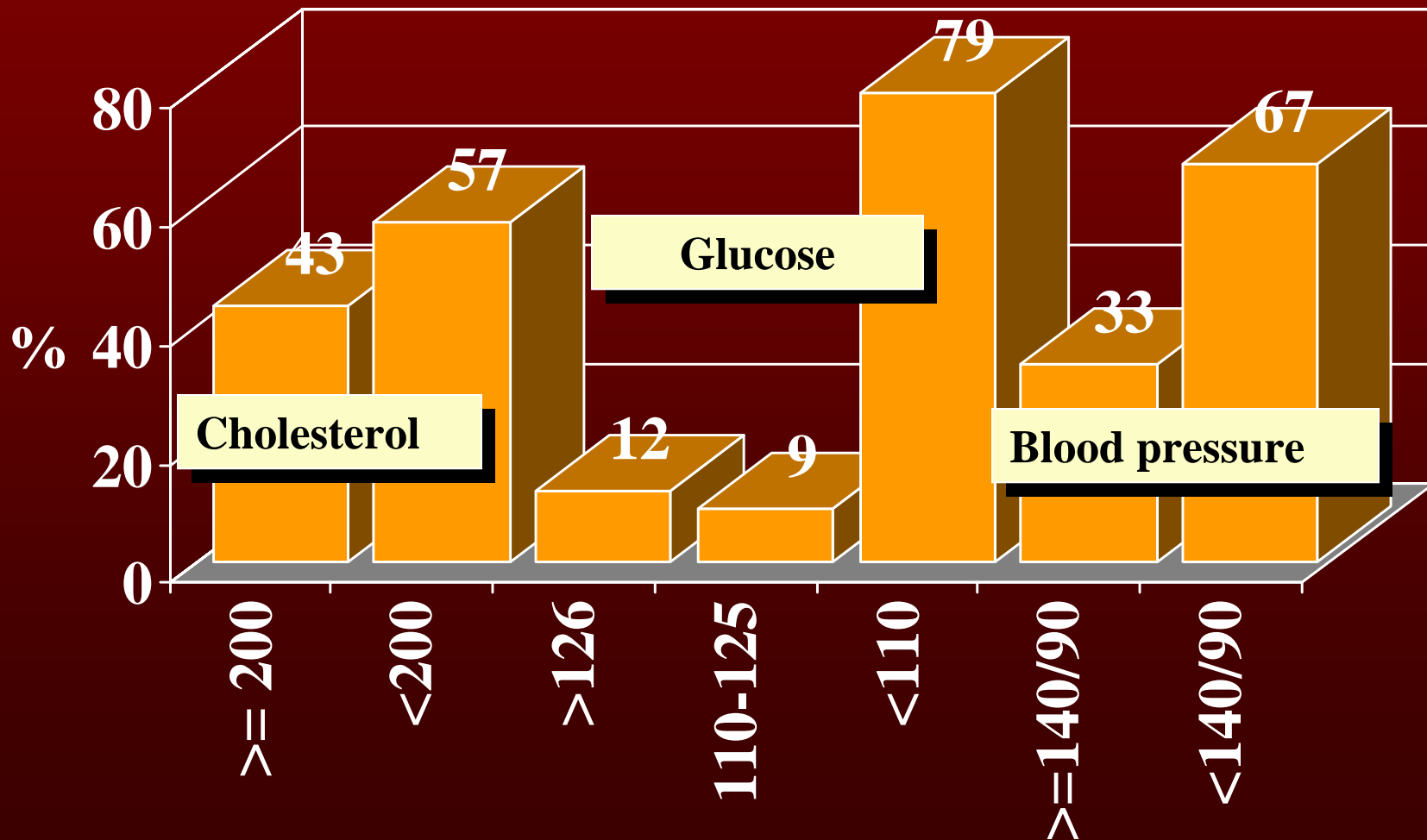
Smoking + antiplatelet: $1.5 \times 15.2\% \times (1-13\%) \times (1-23\%) = 15.2$

Chinatown Health Screening

Jan-June 2001 CCPH

SH Foo. CCPH Community Health Screening in Manhattan Chinatown Jan-June 2001.
Abstract presented at FCMS 11th Conference, 5/25-26 2002, Roosevelt Hotel NYC

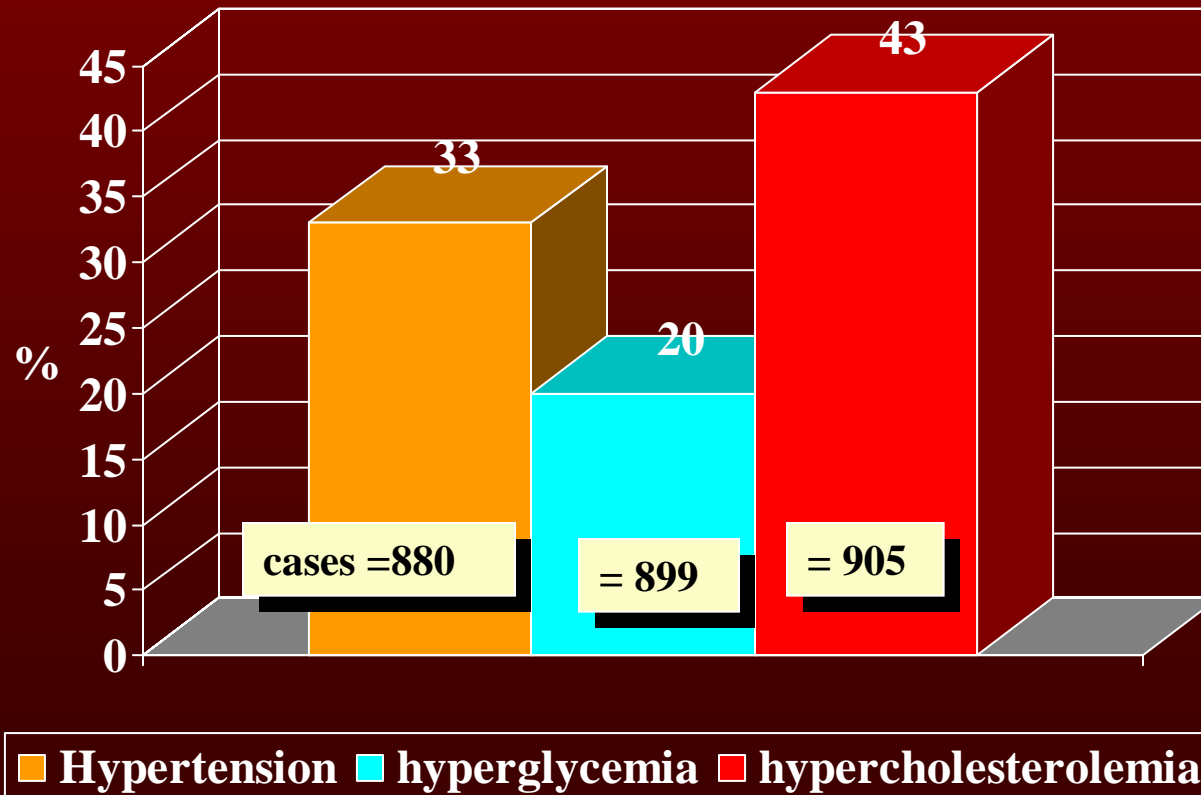
Prevalence of Risk Factors Health Screen Jan-Jun 2001. n=911



Most of them did not believe they have the risk factors

- Only 3.1% (28) thinks they have hypertension
- 1.3% (12) thinks they have diabetes mellitus.
- 0.6% (6) thinks they have hyperlipidemia.

Those who denied the history, 33%(289), 20%(188), 43%(391) had clinical hypertension, hyperglycemia and hypercholesterolemia.

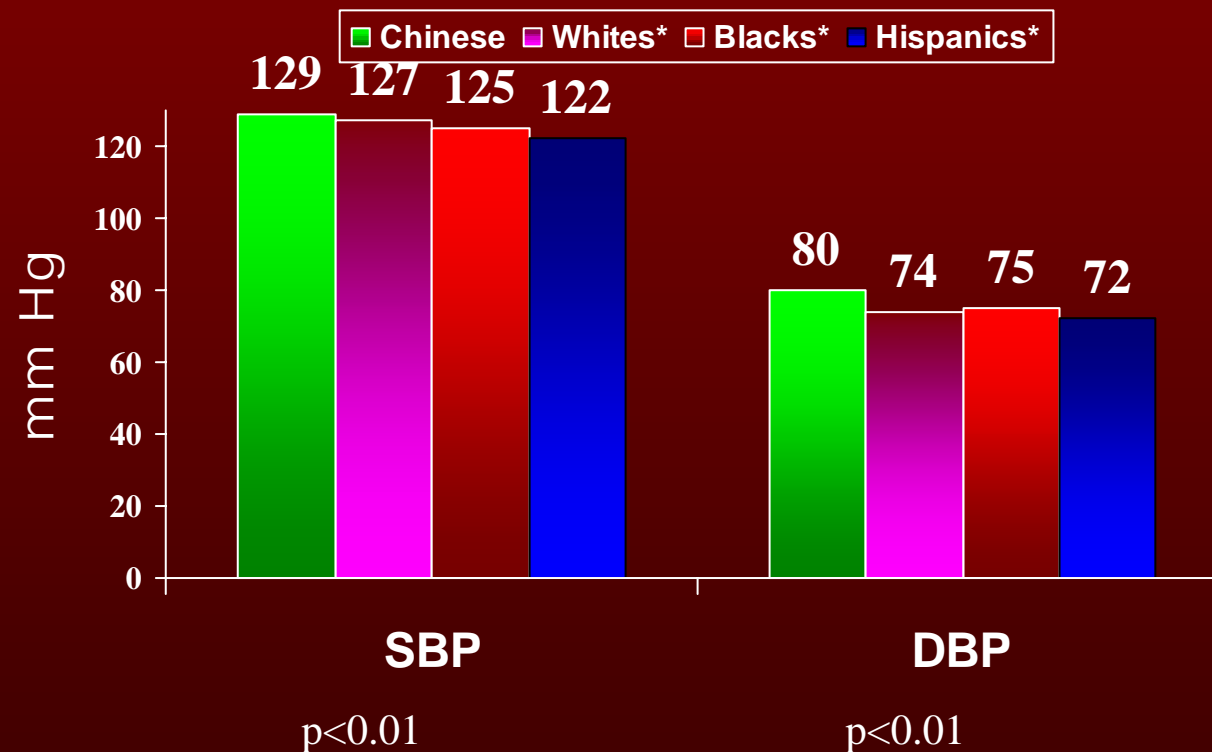


Blood Pressure Control

Manhattan Chinese vs.

NHANES III

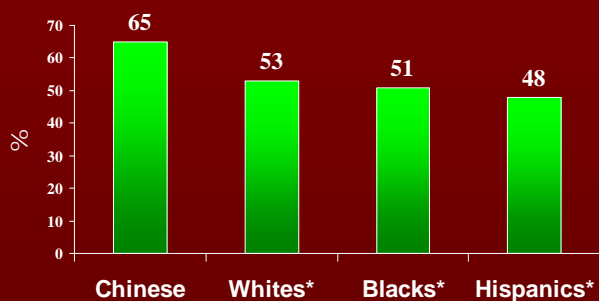
Blood pressure levels by races



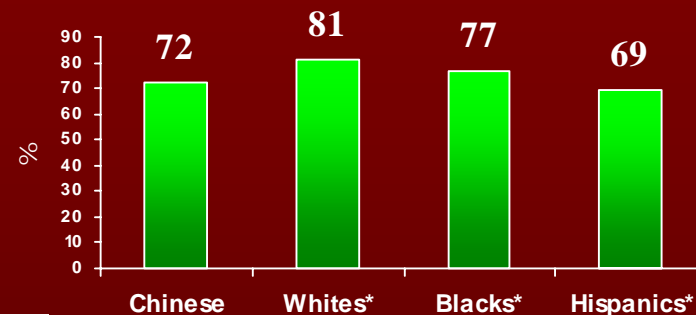
* NHANES III, 1988-1994

Hypertension and Its Treatment in Chinese Residents of NYC. AHA 5-18-2002,Marriott Hotel, NYC

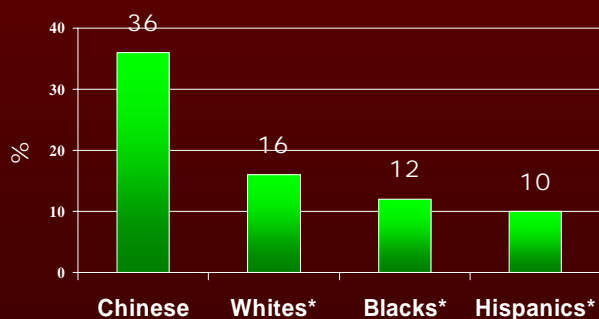
Uncontrolled BP (>140/90) among Hypertensive Patients



Antihypertensive Treatment in patients with hypertension

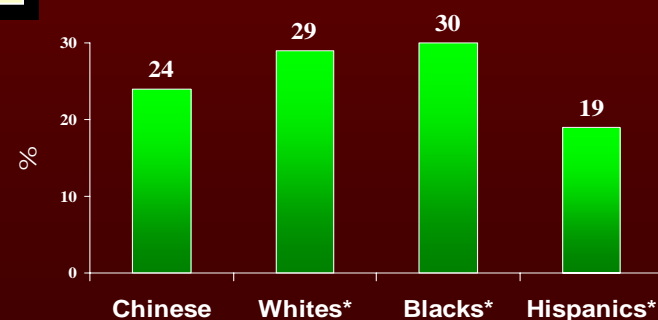


Do not Know They Have Hypertension



65 72
36 24
P <0.01

Told to have Hypertension

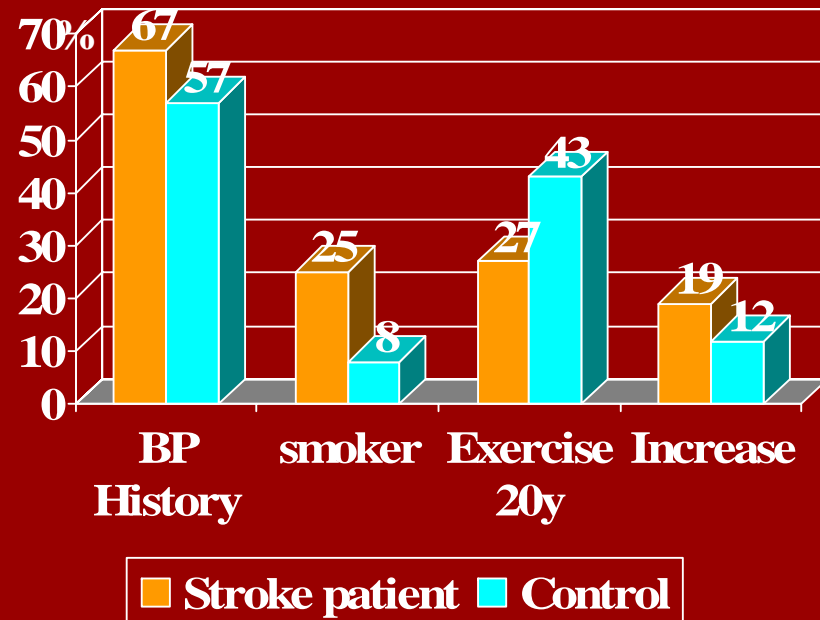
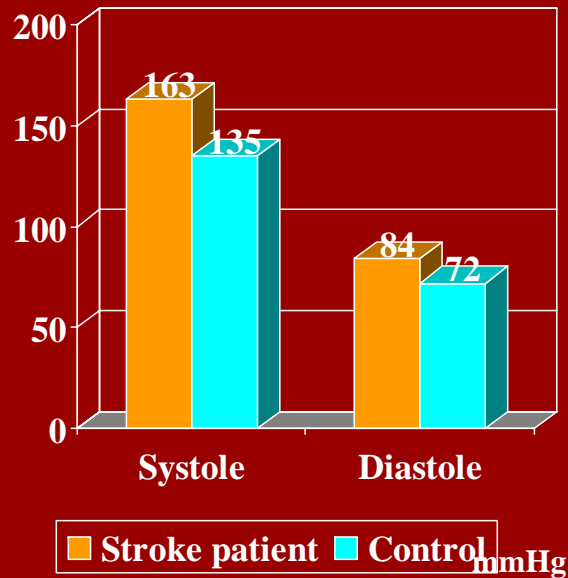


Diet and **Stress Factors**

Stroke Risk Factors Among Chinese Immigrants in NYC

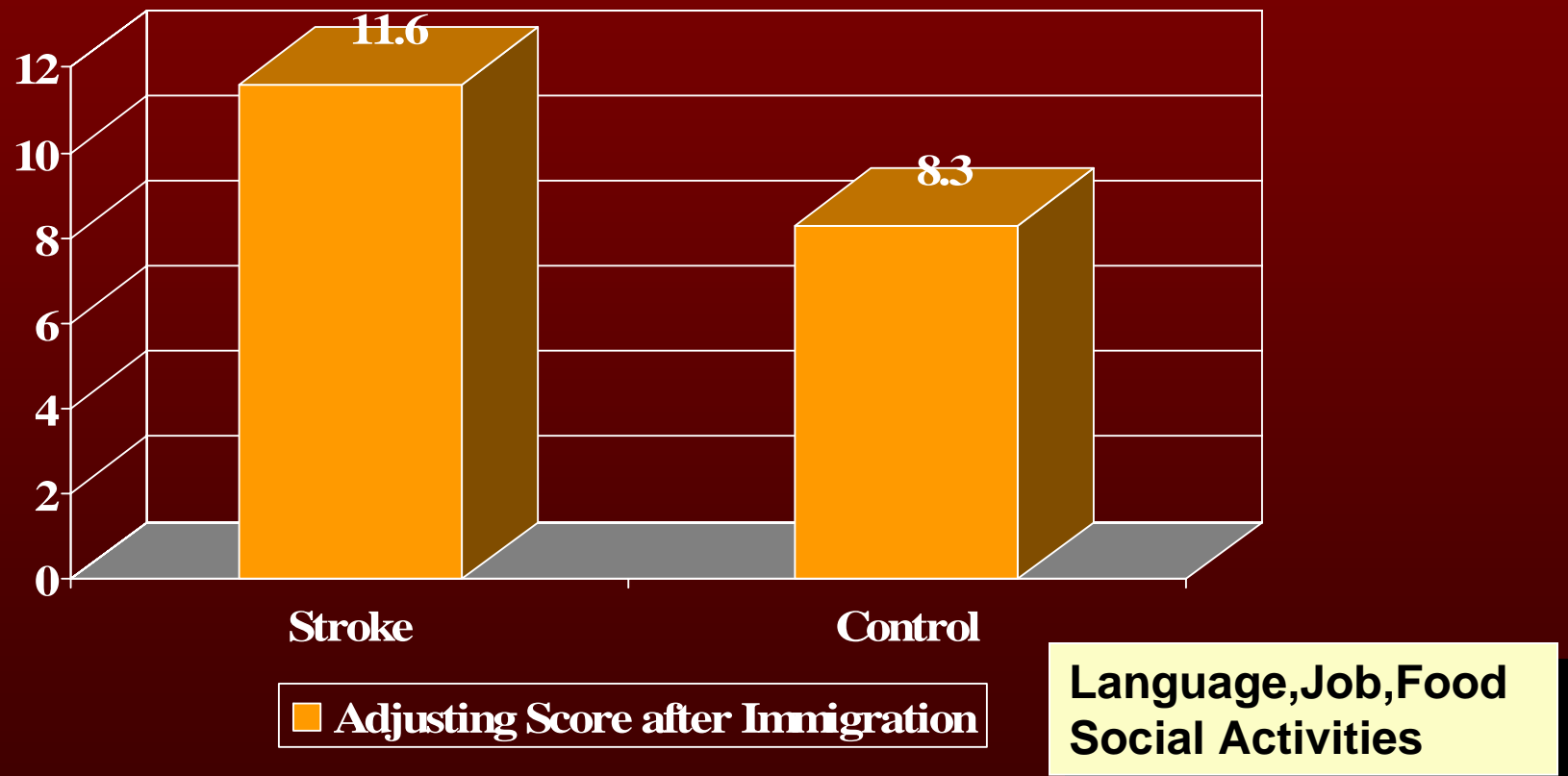
NYDH Case Control Study (Stroke vs. others), 2000-2

Case 84 , Control 74



Stroke Patient vs. Case Control

NYDH Sept 2000-Jan 2002 84/74



Logistic Regression Ratio 0.87(0.74 - 0.99, p=0.05)

Dietary Intake and risk of Stroke Chinese Immigrant

49 food items

(1 - 5)

<1-2/wk vs. >=3-4/wk

Stroke patient:

- **Less Fish, Soybean Products and Fruit Juice**

P = 0.049, 0.034, 0.001

- **Less likely to increase consumption after immigration.**

12 vs. 28% (p = 0.02)

- **More likely to decrease Consumption**

28 vs. 6% (P =0.02)

NYDH Stroke Case control 72/71, 9/2000 - 12/2002

Conclusions:

- Stroke at younger age
- Higher incidence of Cerebral hemorrhage
- Higher prevalence of Stroke risk factors
- residents are unaware of having these common, treatable but dangerous risk factors.
- those who knew, the risk factors remain uncontrolled.

- tendency toward increased prevalence of hypertension, hypercholesterolemia but better serum glucose level compared with screening of 1993-5.
- these facts underscore the importance of continue health education and appropriate preventive treatments in improving the community health.

Chinese American Cardiovascular Health Assessment **CHACHA**

04/01/2006 03/31/2010

1 R01 HL077809-0, IPF:9433501

Wylie-Rosett, Judith
Albert Einstein College of Medicine

1. Aim:

To conduct a community-based epidemiological survey of CVD risk among Chinese in NYC.

2. Hypotheses :

there are multi-level, interactive impacts of immigration and acculturation on health habits, stress and socioeconomic status that together determine CVD risk status.

Thank You

Nelson Auyoung
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Susan Lau
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Henrietta Ho-Asjoe
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CCPH
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Betty Chin

