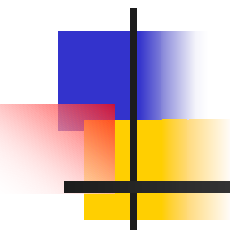


Ethnic, Demographic, and Lifestyle Determinants of Dietary Supplement Use in the Elderly



Suzanne Murphy, PhD, RD
University of Hawaii

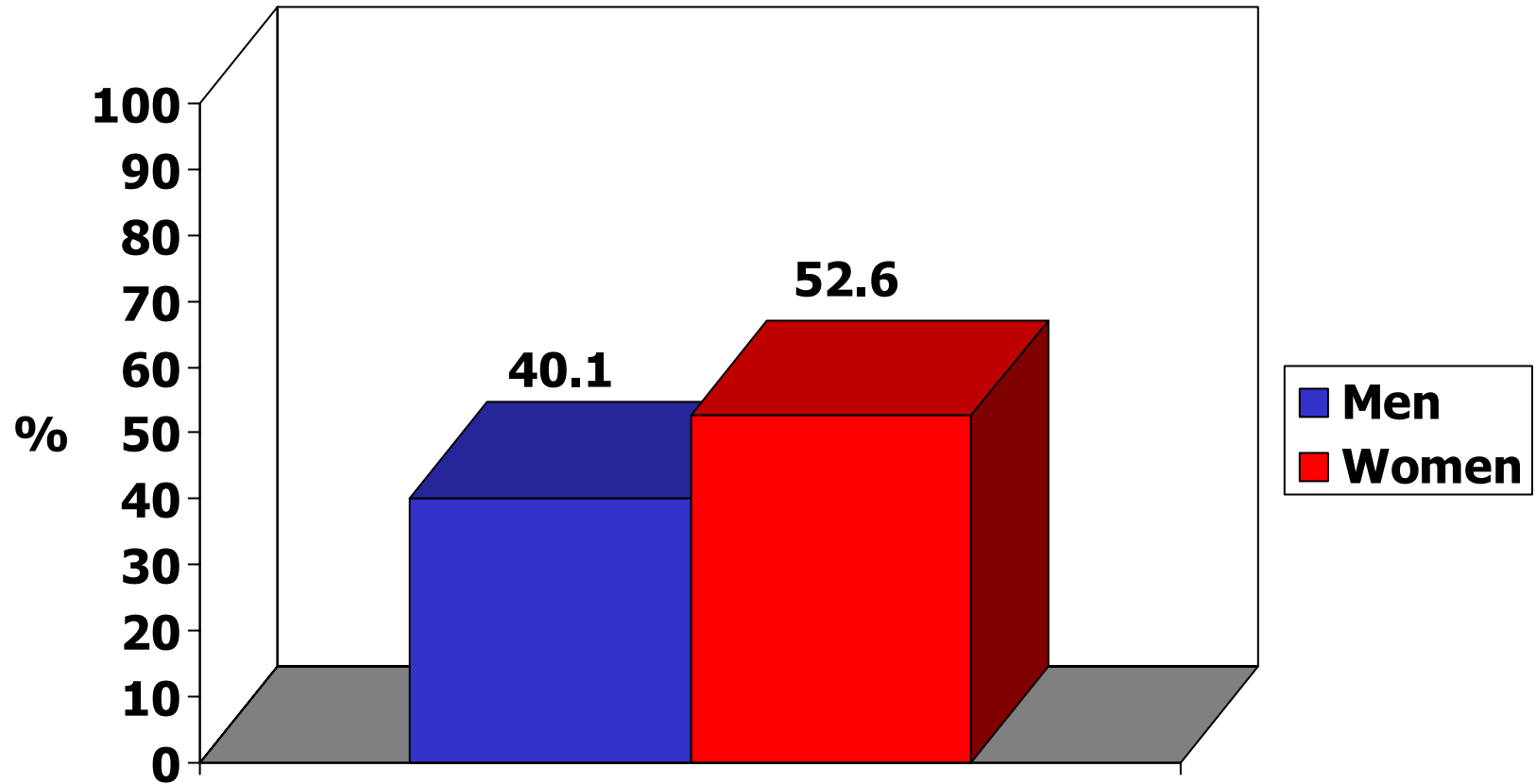


NHANES III Supplement Use

- Data collected in 1988-94.
- Use over the past month.
- Vitamins/minerals only.
- Open-ended questions.

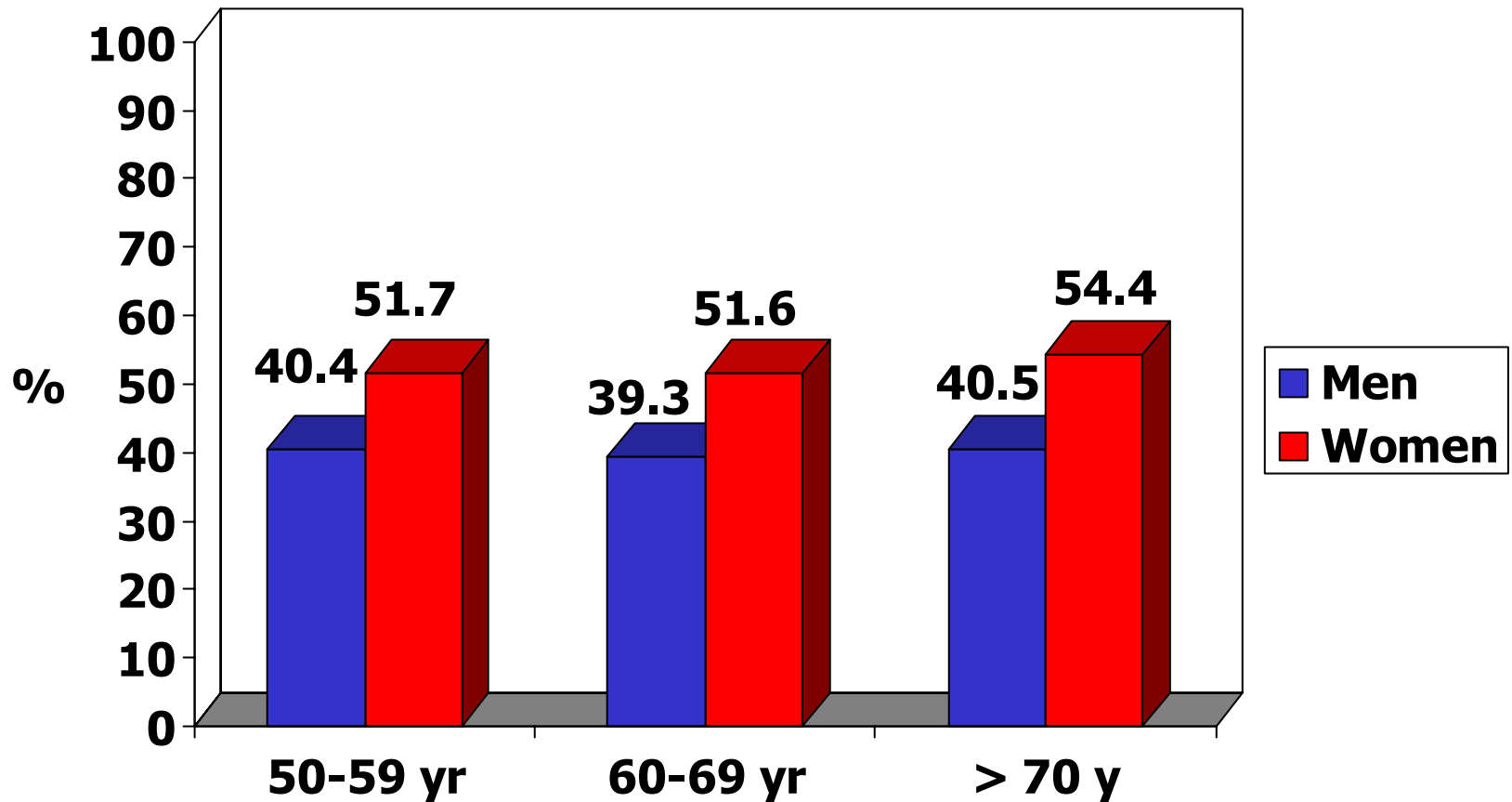
NHANES III – Vitamin/Mineral Use

Adults 50 years and older

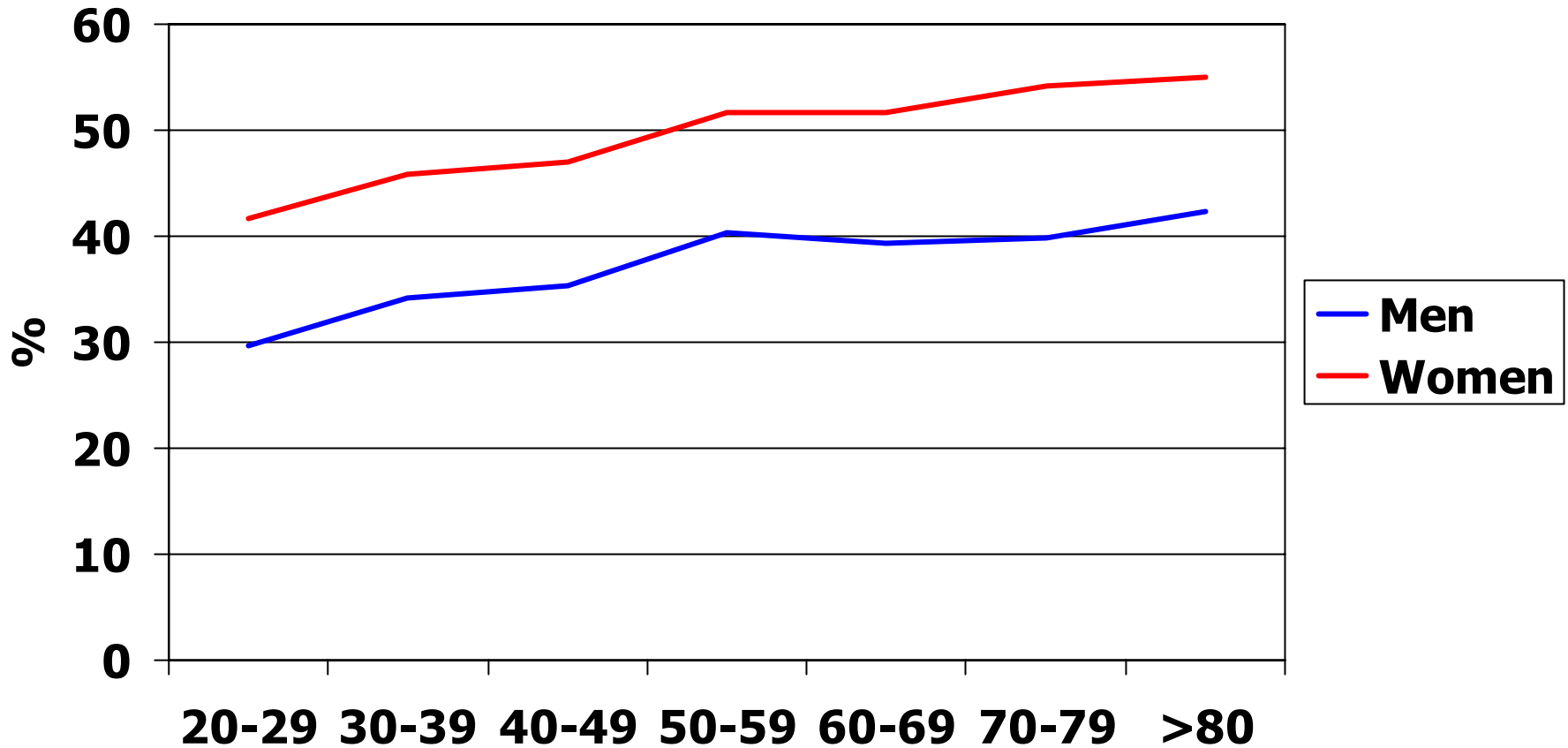


NHANES III – Vitamin/Mineral Use

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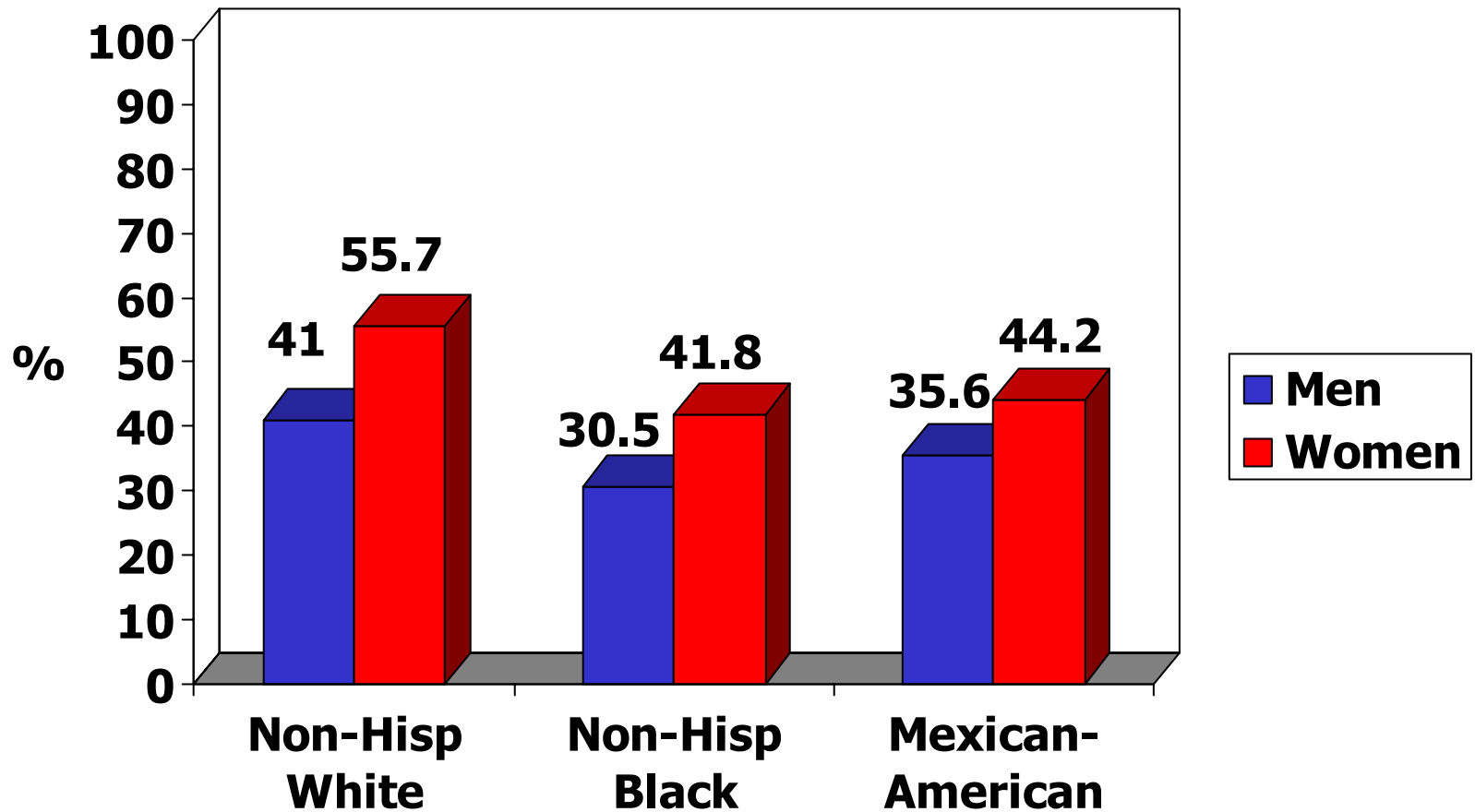


NHANES III: Change in V/M Use With Age



NHANES III – Vitamin/Mineral Use

Adults 50 years and older

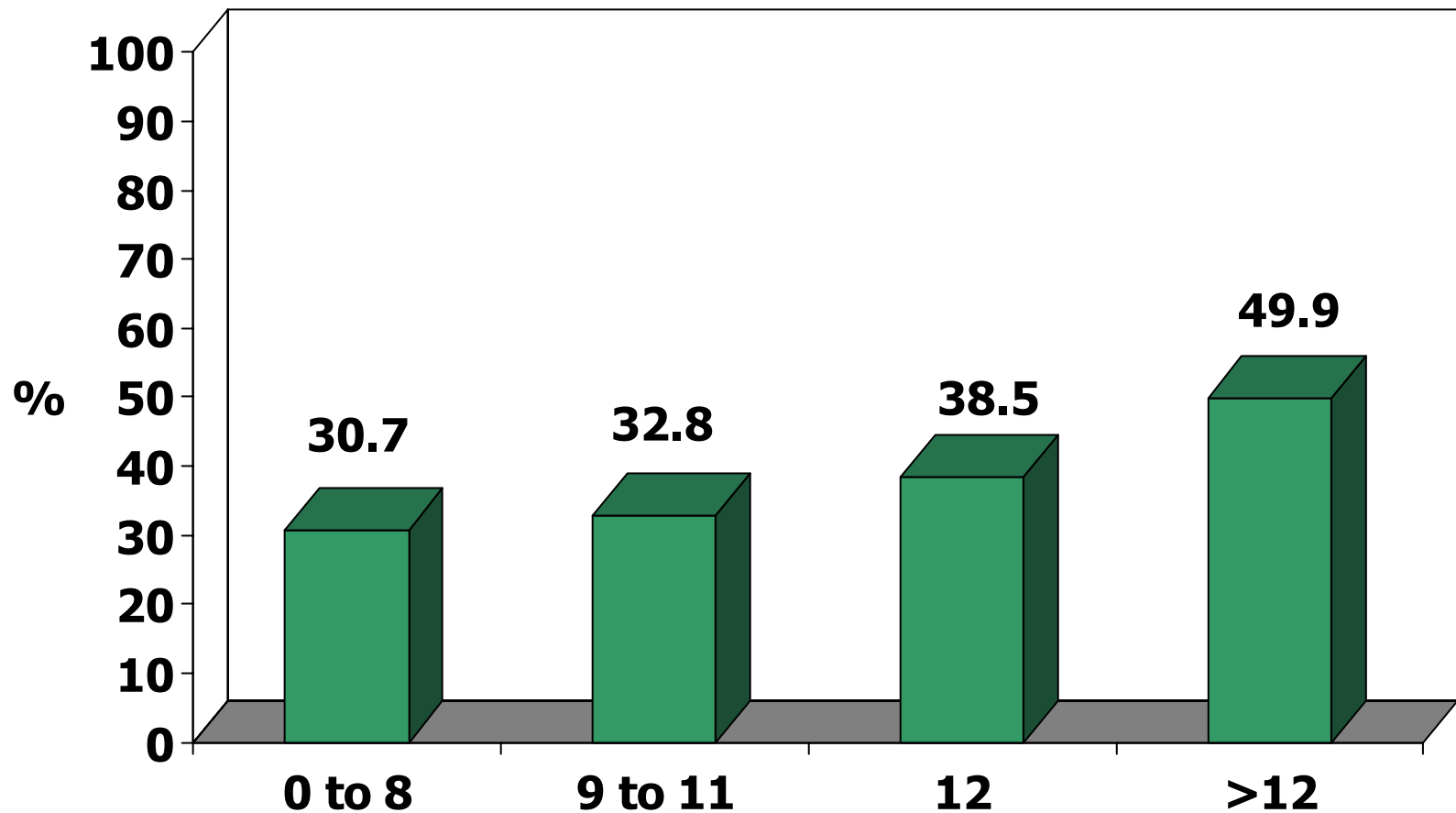




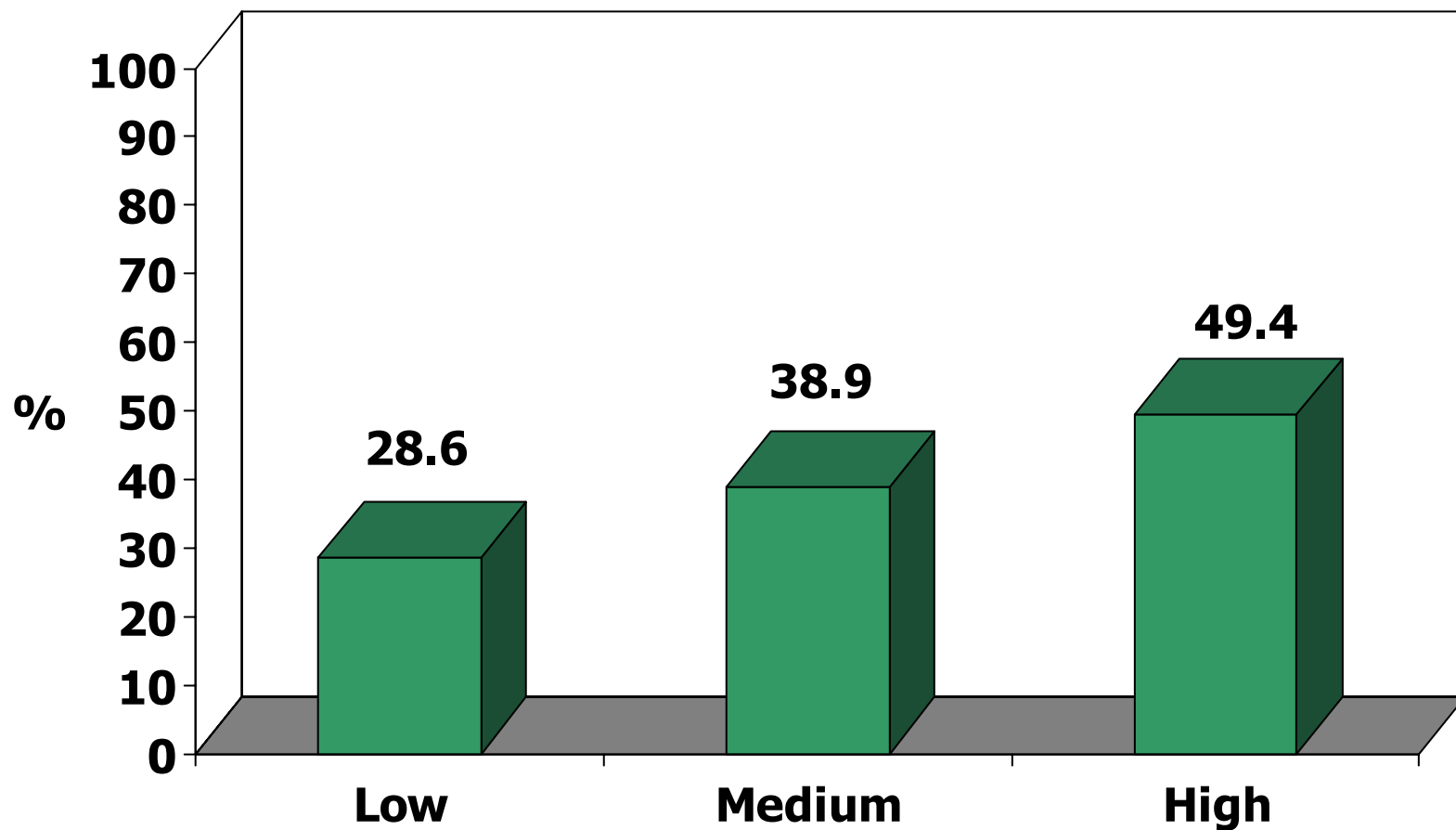
Other demographic factors

- Income
- Education

NHANES III – Vitamin/Mineral Use by Years of Education, All Adults



NHANES III – Vitamin/Mineral Use by Income Level, All Ages





Lifestyle Factors

- Smoking
- Alcohol use
- Body weight
- Physical activity
- Dietary quality

Some US studies which examined lifestyle factors and supplement use



- CSFII/Diet and Health Knowledge Survey
- Beaver Dam Eye Study
- California Teachers Study
- Prostate Cancer Prevention Trial
- Women Physicians' Health Study
- National Health Interview Survey

Some US studies which examined lifestyle factors and supplement use



- DHKS: 1994; N=1525; age \geq 20 yr.
- BDES; 1988-90; N=2152; age \geq 43 yr.
- CTS; 1995; N=111,208; age \geq 22 yr.
- PCPT; 1993-97; N=18,882; age \geq 55 yr.
- WPHS: 1994; N=4501; age \geq 30 yr.
- NHIS: 1992; N=11,643; age \geq 18 yr.



Comparisons across studies difficult because of differences in:

- Age, gender, ethnicity
- Collection instruments.
- Retrospective timeframe.
- Categories of use.
- Assumptions about supplement composition.
- Calendar years in which data were collected.



As a result of differing protocols and populations

- Absolute estimates of supplement use differ across studies.
- But associations of supplement use with lifestyle factors can be examined for consistency across studies.

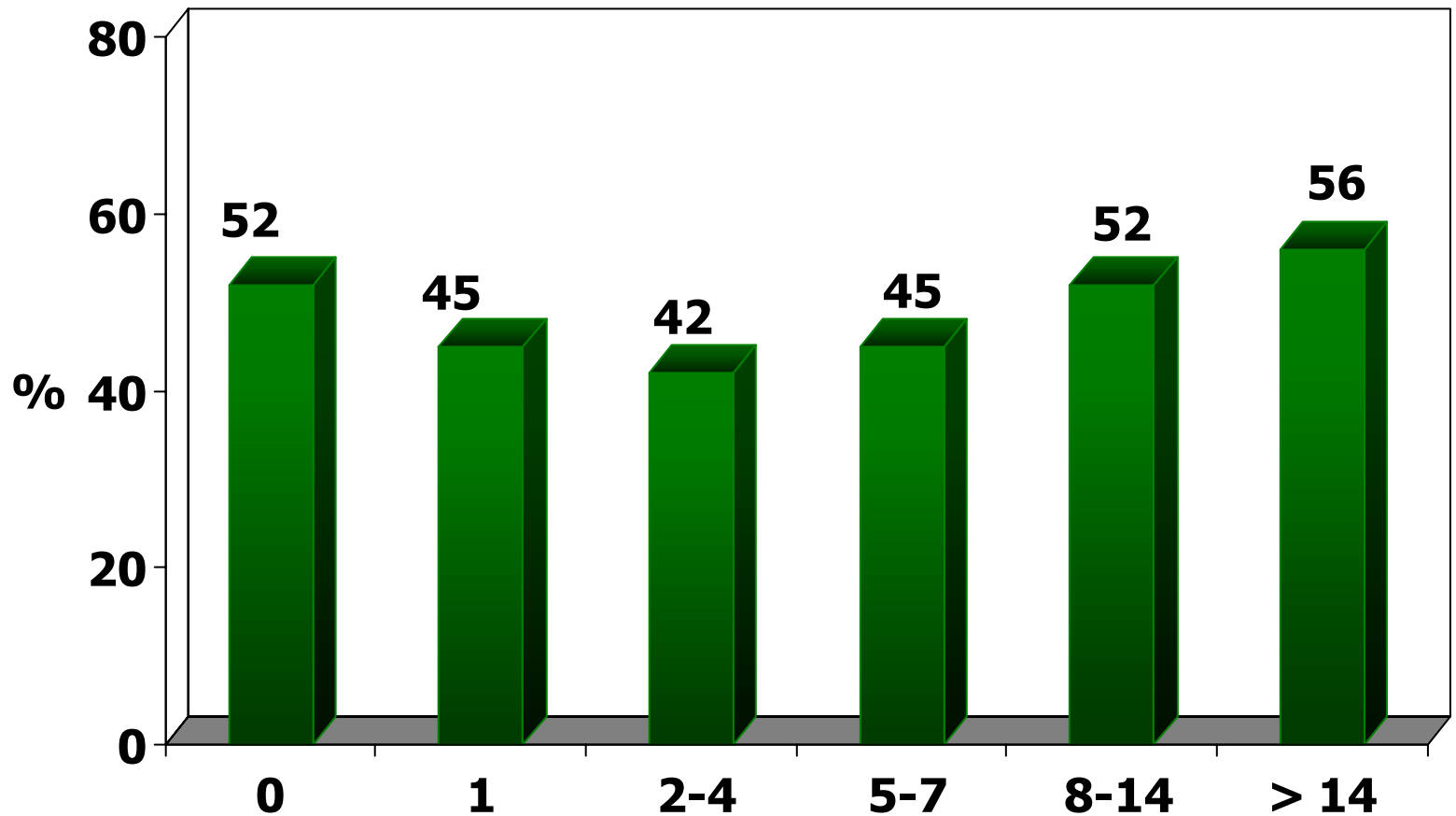
Evidence that smokers are less likely to use supplements



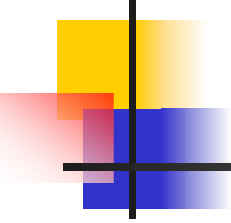
Odds ratio for current smokers vs. never smokers is consistently less than 1:

- 0.72 in DHKS.
- 0.92 in PCPT (NS)
- 0.70 in CTS (for multivitamin use)

Regular supplement use by drinks/week among female physicians



Associations between alcohol use and supplement use are inconsistent



- Some studies find increased use among non-drinkers.
- Associations may be non-linear.



Evidence that people with higher BMIs are less likely to use supplements

- Odds ratios consistently less than 1 for obese vs normal weight subjects:
 - 0.87 in PCPT (NS)
 - 0.70 in CTS (for multivitamin use, obese vs. underweight)
- Use in BDES fell from 36% to 23% of subjects across increasing quintiles of BMI.



Evidence that more active people are more likely to use supplements

- Use in BDES increased from 26% in sedentary subjects to 36% in active subjects.



Is supplement use associated with poorer dietary quality?

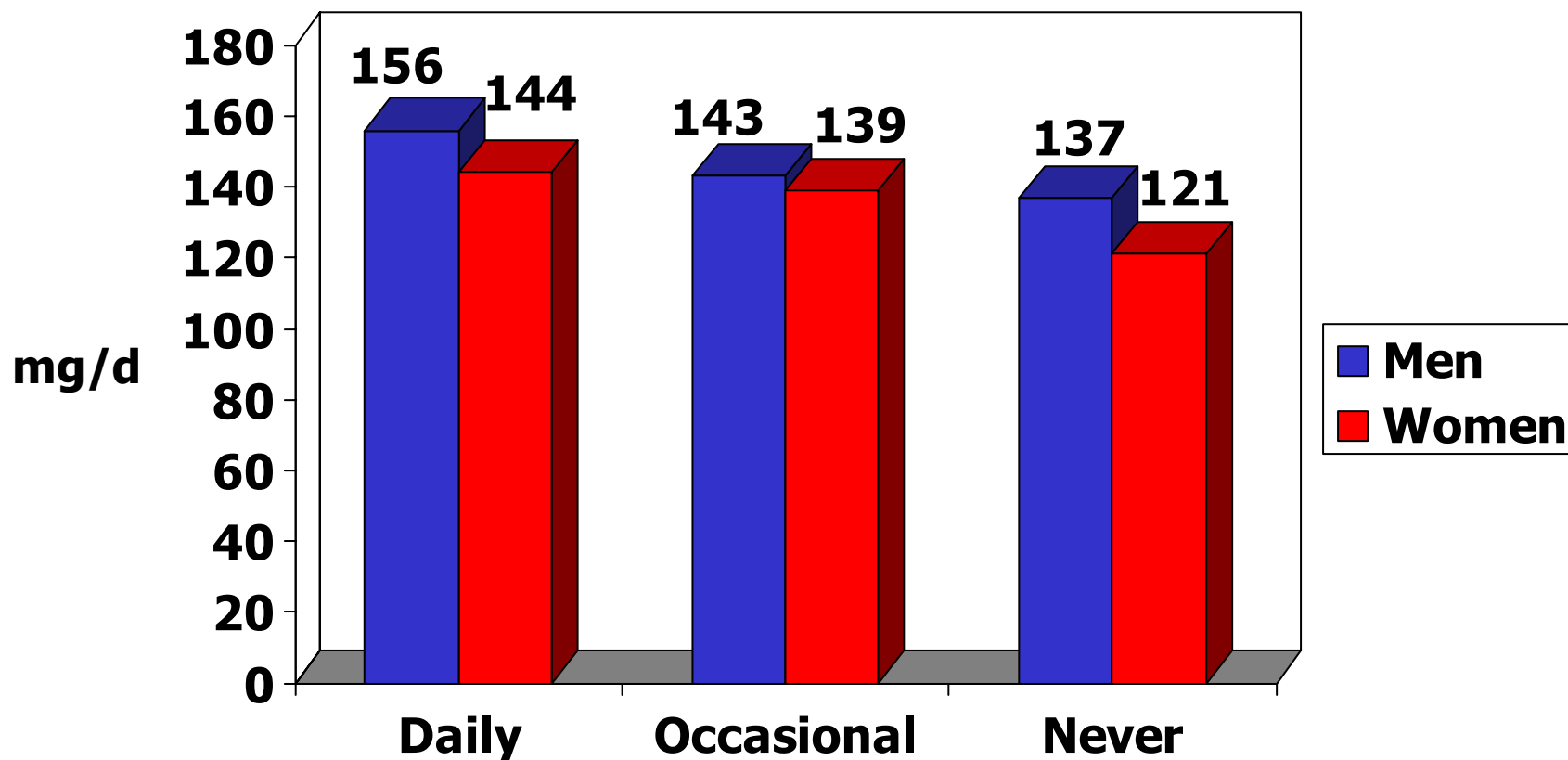
Most studies find the opposite: supplement users tend to have **better** dietary quality.



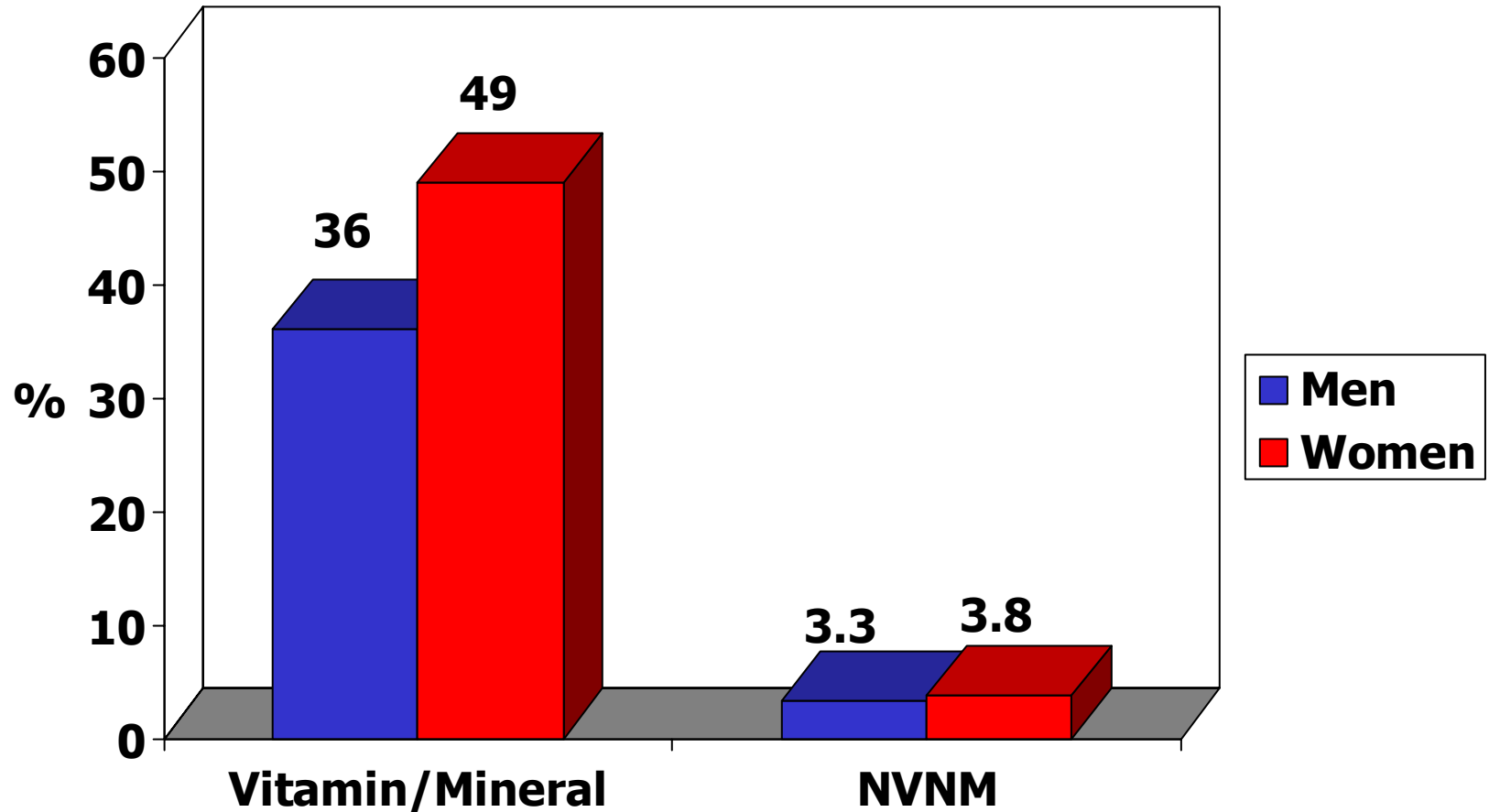
Multinutrient supplement users in the Beaver Dam Eye Study

- Had significantly lower % of energy from fat (by 3%).
- Had significantly higher **dietary** intake of fiber, carotenoids, folate, riboflavin, thiamin, vitamin C, vitamin E, calcium, iron, and zinc (by 3-12%).
- Reported more fruit and more dairy products.

Dietary intake of vitamin C by supplement use category, NHIS



NHANES III - Supplement use, all adults





Are determinants of non-vitamin, non-mineral use different?

- Fewer analyses of determinants of use.
- Largest sample was from NHANES III (614 users out of 19,296 participants).
- Highest use was by adults 45-74 years of age and “other” race.
- Use generally associated with healthier lifestyle: increased in former smokers, exercisers, and consumers of more fruit and vegetables.
- However, higher use by persons with 7-14 drinks per week and those with higher BMIs.



Conclusions

- **Demographic** determinants of supplement use include gender, age, education, and income:
 - Higher use among women
 - Increases with age, but more constant after age 50
 - Increases with more education
 - Increases with higher income



Conclusions (con't)

- V/M supplement use varies by **ethnicity**:
 - Higher use among Caucasians and Asians.
 - Lower use among Mexican- Americans and African-Americans.
 - Differences may be smaller in more recent surveys.
- NVNM supplement use was similar for Whites, Blacks and Hispanics, but higher for “other” races.



Conclusions (con't)

- A healthy **lifestyle** is a determinant of supplement use among older adults:
 - Higher use by non-smokers
 - Associations with drinking are inconsistent, but non-drinkers appear to have higher V/M use
 - V/M use decreases as BMI increases, but the opposite was seen for NVNM use
 - Use increases as physical activity increases
 - Use increases as dietary quality increases



Research needs

- More current data on supplement use by age, gender, and ethnic categories:
 - For vitamin/mineral supplements
 - For non-vitamin, non-mineral supplements
- Age-specific reporting of lifestyle factors associated with use.
- Longitudinal studies on changes in use over time and with disease onset.
- Validation of methods for collecting supplement use data among older adults.