Facts about The Strong Heart Study

- The Strong Heart Study (SHS) is a study of cardiovascular disease and its risk factors among American Indians.
- The SHS has a field center in each of the following areas: Arizona, the Dakotas, and Oklahoma. SHS also has a coordinating center in Oklahoma, Penn Medical Laboratory in Washington DC, an ECG and ultrasound reading center at Weill Medical College of Cornell University in New York, and a genetics center in San Antonio, TX.
- SHS began in 1988 and has continued through five phases of study. SHS added other family members to the study in 1997.
- SHS is the largest, longest longitudinal study in the U.S. of heart disease and its risk factors in individuals with diabetes.
- SHS is a population based study and has a retention rate of 90%. This shows the extraordinary commitment of SHS participants.

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Metabolic Syndrome

RESEARCH RESULTS AND INFORMATION FROM:
STRONG HEART STUDY

Metabolic Syndrome

What is metabolic syndrome?

For a number of years researchers noticed that people with risk of diabetes or heart disease tended to have a set of abnormal characteristics. Doctors use the term "syndrome" to describe situations when several characteristics occur together. The term "metabolic syndrome" was first used in 1991. A person has metabolic syndrome if they have three of the following conditions:

- Fat accumulation around the waist—waist circumference greater than 40 inches for men or 35 inches for women
- Triglycerides (a form of fat in the blood) greater than 150 mg/dl*
- HDL (good cholesterol) less than 40 mg/dl* for women or less than 50 mg/dl* for men
- Fasting glucose (a form of sugar in the blood) greater than 100 mg/dl*
- Blood pressure greater than 130/85 or on medications

*mg/dl = milligrams per deciliter

What causes the metabolic syndrome?

Scientists think people who are overweight and inactive do not get the normal, proper effects from their bodies' insulin, and this leads to the metabolic syndrome and the following:

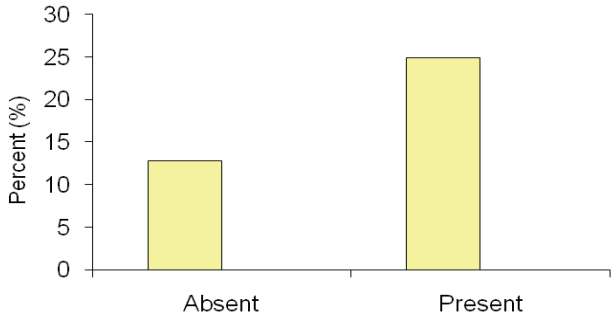
–Higher triglycerides
–Lower HDL-C
–Higher blood pressure
–Higher glucose levels

Metabolic syndrome is high in American Indians. Strong Heart Study (SHS) data show rates

- For men and women 45-74 years of age
  - 48% of men
  - 56% of women
- For those 25-44 years of age
  - 41% of men
  - 35% of women
- For people 15-24 years of age
  - 19% of men
  - 21% of women

Metabolic syndrome predicts future diabetes

This figure shows that 25% of SHS men and women 45-74 years of age with Metabolic Syndrome develop diabetes in 5 years, compared to 12% of those who don't have it.



Metabolic Syndrome as a Predictor of Diabetes

Metabolic syndrome predicts future cardiovascular disease (CVD)

In SHS, men and women with metabolic syndrome are 40% more likely to develop CVD in 12 years.

Treating metabolic syndrome

- The Indian Health Service (IHS) recommends screening for metabolic syndrome in all adults without diabetes
- Treatment focuses on each part
  - Waist: Weight control and increased activity
  - Triglycerides: Lifestyle changes or medications
  - HDL-C: Lifestyle changes or medications
  - Blood pressure: Weight control/increased activity or medications
  - High fasting glucose: Lifestyle changes

Summary

- SHS showed that a high proportion of American Indians have metabolic syndrome
- SHS found that metabolic syndrome greatly increases the risk for diabetes
- SHS also showed that metabolic syndrome increases the risk of CVD
- The cornerstone of treatment or prevention is lifestyle:
  - Prevent weight gain, strive for weight loss if overweight
  - Increased activity