A study published online April 18, 2016 in the journal Heart found that poor social relationships were associated with an increase in coronary heart disease and stroke. It was reported April 20, 2016 by CBS News.

What was this study seeking to determine? Has this been done before?

The study investigated the association between loneliness and social isolation with the rate of coronary heart disease and stroke. Small studies have been done in the past, but none to this level or size. The paper supports prior reports about the link between mental health and aspects of physical health.

How were the data obtained for this study? What is a meta-study?

The study was a meta-analysis of 23 longitudinal studies that investigated loneliness, social isolation and heart disease and stroke. A meta-analysis is the statistical procedure for combining data from multiple studies. When the treatment effect is consistent from one study to the next, meta-analysis can be used to identify this common effect.

Who were the subjects? Is there a significance concerning the countries studied?

The study analyzed data from over 181,000 males and females greater than 18 years old from different parts of the world, including Europe, North America, Asia, and Australia. The countries studied had a high income patient population. Seven of the estimates included in the meta-analyses were from studies where participants were of higher socioeconomic status and in better health than the target population. The role of loneliness and social isolation may be greater among individuals under stress, therefore the results may underestimate the health-damaging implications of loneliness and social isolation among disadvantaged groups.

How did the researchers define and measure loneliness and social isolation? Is there a difference between loneliness and social isolation?

Loneliness is the negative feeling people have when they think their relationships are poor. A lonely person could be surrounded by many people and still be unhappy. Social isolation, on the other hand, is when a person is not in contact with anyone, including friends and family. Loneliness and social isolation were identified in a number of ways in the study, including a direct question about loneliness during the day, questions of feelings of loneliness during the past week, and evaluations/tools that measured social relationships.
How did the researchers measure the data?
Subjects were followed for between three and 21 years. Study endpoints included cardiovascular events (heart attack, heart death, heart pain) and strokes. In the 181,000 individuals studied, 4,628 had a heart attack, heart-related chest pain, or died, and 3,002 suffered strokes. These events were identified through medical records, death certificates, national registrations, and self-reported events obtained by a nurse or a doctor conducting a telephone interview.

What were the results?
Poor social relationships were associated with an increased risk in both heart attacks and stroke. The pooled data showed that loneliness and social isolation were associated with a 29 percent increased risk of heart attack or chest pain and a 32 percent increased risk of stroke. Social isolation is exerting the same level of influence on heart disease as risk factors such as stress and anxiety.

Did the study reveal any differences concerning women or other subgroups?
There were no significant gender differences and no major subgroups that were identified as having an increased risk of events.

How reliable were the studies that the researchers examined?
The studies were fairly reliable, although not absolutely so. While this is the first published attempt to conduct a systematic analysis of these data, it is limited by the fact the studies all used different criteria to determine social isolation. Some papers used a loneliness measure, others a social isolation measure, and still others combined criteria.

Did the researchers offer an explanation for the results? What is the possible health danger of loneliness and social isolation?
Although this kind of study cannot infer causality, it is reasonable to suggest that there is a significant health danger in loneliness and social isolation. Social isolation and feelings of loneliness may have a direct influence on risk factors for heart disease and stroke. Specifically, it can raise blood pressure and increase inflammation. In addition, social isolation may influence behaviors such as tobacco use, poor diet, obesity, lack of exercise, compliance with medications, and low utilization of medical care.

Does this research fall in line with previous studies? Was anything surprising?
This research does fall in line with previous studies and supports the health dangers of loneliness and social isolation. That loneliness and social isolation could be risk factors for disease and death is a concept that has been explored in the scientific community. For example, in 2006, a study in the Journal of the American Medical Association found social isolation in childhood may increase the risk for cardiovascular disease in adulthood.

What were the strengths of this study’s design and execution?
Strengths of this study and its design include data that were obtained in advance and over a long period of time. The meta-analysis of this study increases the statistical power that enables us to detect whether loneliness and social isolation may lead to increased health risks. The data included male and female subjects from many different countries.
Were there any shortcomings in the study design and execution? What, if anything, can be said about causality?

Limitations include the inclusion of work from 1965. Given how much our management of heart disease has changed since then, it’s possible that these older data may not really be relevant to modern-day patients. Another limitation is this was an observational study, so you can’t rule out potential, unmeasured factors or reverse causation. Because the study was observational, it cannot establish a definitive cause and effect between isolation and illness but does suggest that there is an associated relationship. Finally, any review of scientific literature could suffer from publication bias, an established pattern in which studies with significant results are more likely to be published over studies that show a small or no effect, creating a false representation of the overall body of research.

What should people and health care professionals do differently in the face of these findings? What are the challenges to addressing this issue?

This study tells us that we need to address loneliness and social isolation before it can lead to significant health problems. We will need significant public support, public safety, and educational programs to help individuals who suffer from loneliness and social isolation. Social factors should be included in medical education, individual risk assessment, and in guidelines and policies applied to populations and the delivery of health services.