National Institute on Aging:

Social Networks Influence Smoking Behavior and Obesity

NIH-supported researchers demonstrated that an individual's social network can have a strong influence on his or her behavior change. Changes in smoking behavior and obesity spread quickly through networks of people defined by adult respondents as close friends. These network influences proved much stronger than previously suspected and stronger even than those of spouses, siblings, co-workers, and neighbors.

Lead Agency:

National Institute on Aging (NIA)/National Institutes of Health (NIH)

Agency Mission:

Support and conduct genetic, biological, clinical, behavioral, social, and economic research related to the aging process, diseases and conditions associated with aging, and other special problems and needs of older Americans.

Foster the development of research and clinician scientists in aging.

Communicate information about aging and advances in research on aging to the scientific community, health care providers, and the public.

Principal Investigator:

Nicholas A. Christakis, Ph.D.
Harvard Medical School
180 Longwood Avenue
Boston, MA 02115

General Description:

Social Networks Influence Smoking Behavior and Obesity
NIH-supported investigators conducted analyses on a densely interconnected social network of 12,067 people assessed longitudinally from 1971 to 2003 as part of the Framingham Heart Study. Researchers conducted two projects to examine the influence of social networks on individual behavior, one related to obesity and the other to smoking. The results of both studies demonstrated that social networks are important in behavior change and decision making – with effects beyond those between spouses, siblings, and neighbors. The first study demonstrated that obesity "spreads" in social networks in measurable ways and is related to the nature of the social tie. Findings showed that the chance of becoming obese over time increased by 171 percent for an individual who had a friend of the same sex who became obese. Among pairs of adult siblings, if one sibling became obese the chance that the other would become obese increased by 40 percent. Similarly, among married couples, if one spouse became obese, the

likelihood that the other spouse would become obese increased by 37 percent. A "neighbor" becoming obese had no effect on an individual's change in weight.

The second study by the same NIH-supported investigators analyzed changes in smoking behavior and found that smokers quit in groups and not in isolation and that those who continued to smoke formed clusters that shifted their social connections over time to those who also smoked. For example, when a spouse quit, it decreased the chance of his or her spouse smoking by 67 percent. When a sibling quit, it reduced the chance of smoking by 25 percent among his or her brothers and sisters. In the work setting, size of the organization was a factor. In small firms, a co-worker quitting could decrease smoking among peers by 34 percent, but in larger firms, the influence was insignificant. The findings indicate that the closeness of the relationship in the network, regardless of geographic location, was key to spreading behaviors.