Obesity is 'socially contagious', study finds

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Are your friends making you fat? Or keeping you slender? According to new research from Harvard and the University of California, San Diego, the short answer on both counts is "yes."

Appearing in the July 26 issue of the *New England Journal of Medicine*, a study coauthored by Nicholas Christakis of Harvard Medical School and James Fowler of UC San Diego suggests that obesity is "socially contagious," spreading from person to person in a social network.

The study -- the first to examine this phenomenon -- finds that if one person becomes obese, those closely connected to them have a greater chance of becoming obese themselves. Surprisingly, the greatest effect is seen not among people sharing the same genes or the same household but among friends.

If a person you consider a friend becomes obese, the researchers found, your own chances of becoming obese go up 57 percent. Among mutual friends, the effect is even stronger, with chances increasing 171 percent.

Christakis and Fowler also looked at the influence of siblings, spouses and neighbors. Among siblings, if one becomes obese, the likelihood for the other to become obese increases 40 percent; among spouses, 37 percent. There was no effect among neighbors, unless they were also friends.

The researchers analyzed data over a period of 32 years for 12,067 adults, who underwent repeated medical assessments as part of the

Framingham Heart Study. They were able to map a densely interconnected social network of the study's subjects by using the tracking sheets (which had previously been archived in a basement) that recorded not only the subjects' family members but also unrelated friends who could be expected to find them in a few years.

The network map took two years to assemble and includes information on the participants' body-mass index. Among the first things the researchers noticed was that, consistent with other studies finding an obesity epidemic in the U.S., the whole network grew heavier over time.

Also immediately apparent were distinct clusters of thin and heavy individuals. Statistical analysis revealed that this clustering could not be attributed solely to the selective formation of ties among people of comparable weights.

"It's not that obese or non-obese people simply find other similar people to hang out with," said Christakis, a physician and a professor in Harvard Medical School's department of health care policy. "Rather, there is a direct, causal relationship."

Further analysis also suggested that people's influence on each other's obesity status could not be put down just to similarities in lifestyle and environment, to, for example, people eating the same foods together or engaging in the same physical activities. Not only do siblings and spouses have less influence than friends, but also geography doesn't play a role. The striking impact of friends seems to be independent of whether or not the friends live in the same region.

"When we looked at the effect of distance, we found that your friend who's 500 miles away has just as much impact on your obesity as [one] next door," said Fowler, an associate professor of political science at UC San Diego and an expert in social networks.

In part because the study also identifies a larger effect among people of the same sex, the researchers believe that people affect not only each other's behaviors but also, more subtly, norms.

"What appears to be happening is that a person becoming obese most likely causes a change of norms about what counts as an appropriate body size. People come to think that it is okay to be bigger since those around them are bigger, and this sensibility spreads," said Christakis.

"This is about people's ideas about their bodies and their health," Fowler said. "Consciously or unconsciously, people look to others when they are deciding how much to eat, how much to exercise and how much weight is too much."

"Social effects, I think, are much stronger than people before realized. There's been an intensive effort to find genes that are responsible for obesity and physical processes that are responsible for obesity and what our paper suggests is that you really should spend time looking at the social side of life as well," said Fowler.

The policy implications of the study, the researchers say, are profound. The social-network effects extend three degrees of separation -- to your friends' friends' friends -- so any public-health intervention aimed at reducing obesity should consider this in its cost-benefit analysis.

"When we help one person lose weight, we're not just helping one person, we're helping many," Fowler said. "And that needs to be taken into account by policy analysts and also by politicians who are trying to decide what the best measures are for making society healthier."

"It's important to remember," Fowler said, "that we've not only shown that obesity is contagious but that thinness is contagious."

Source: UC San Diego