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Workplace Cited as the New Source of Rise in Obesity

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Ford Motor Company/Associated Press
Workers on an assembly line at a Ford plant in Highland Park, Mich., in 1913. Modern work tends to be more sedentary.

Looking beyond poor eating habits and a couch-potato lifestyle, a group of researchers has found a new culprit in the obesity epidemic: the American workplace.

A sweeping review of shifts in the labor force since 1960 suggests that a sizable portion of the national weight gain can be explained by declining physical activity during the workday. Jobs requiring moderate physical activity, which accounted for 50 percent of the labor market in 1960, have plummeted to just 20 percent.

The remaining 80 percent of jobs, the researchers report, are sedentary or require only light activity. The shift translates to an average decline of 120 to 140 calories a day in physical activity, closely matching the nation's steady weight gain over the past five decades, according to the report, published Wednesday in the journal PLoS One.

Getty Images/Super Stock
Women sorting rice grains in a factory, the kind of labor-intensive work now in decline.

Today, an estimated one in three Americans are obese. Researchers caution that workplace physical activity most likely accounts for only one piece of the obesity puzzle, and that diet, lifestyle and genetics all play important roles.

But the new emphasis on declining workplace activity also represents a major shift in thinking, and it suggests that health care professionals and others on the front lines against obesity, who for years have focused primarily on eating habits and physical activity at home and during leisure time, have missed a key contributor to America's weight problem. The findings also put pressure on employers to step up workplace heath initiatives and pay more attention to physical activity at work.

"If we're going to try to get to the root of what's causing the obesity epidemic, work-related physical activity needs to be in the discussion," said Dr. Timothy S. Church, a noted exercise researcher at the Pennington Biomedical Research Center in Baton Rouge, La., and the study's lead author. "There are a lot of people who say it's all about food. But the work environment has changed so much we have to rethink how we're going to attack this problem."

The report shows that in 1960, one out of two Americans had a job that was physically active. Now it is estimated that only one in five Americans achieves a relatively high level of physical activity at work. Dr. Church notes that because the research does not factor in technological changes, like increasing reliance on the Internet and e-mail, many people in service and desk jobs that have always involved only light activity are now moving less than ever, meaning the findings probably understate how much physical activity has been lost during work hours.

While it has long been known that Americans are more sedentary at work compared with the farming and manufacturing workers of 50 years ago, the new study is believed to be the first in which anyone has estimated how much daily caloric expenditure has been lost in the workplace.

"It's a light bulb, 'aha' moment," said Barbara E. Ainsworth, the president-elect of the American College of Sports Medicine and an exercise researcher at Arizona State University. "I think occupational activity is part of that missing puzzle that is so difficult to measure, and is probably contributing to the inactivity and creeping obesity that we're seeing over time."

For years, the role that physical activity has played in the obesity problem has been uncertain. Numerous studies suggest there has been little change in the average amount of leisure-time physical activity, posing a conundrum for researchers trying to explain the country's steady

weight gain. As a result, much of the focus has been on the rise of fast-food and soft drink consumption.

Other studies have suggested that changing commuting habits, declining reliance on public transportation and even increased time in front of the television have played a role in the fattening of America. But none of those issues can fully explain the complex changes in nationwide weight-gain patterns.

Some earlier research has hinted at the fact that workplace physical activity is associated with weight and health. One seminal set of studies of London bus drivers and conductors showed that the sedentary bus drivers had higher rates of heart disease than the ticket takers, who moved around during the workday.

Dr. Church said that during a talk on the country's obesity patterns, he was struck by the fact that Mississippi and Wisconsin both had high rates of obesity, despite having little in common in terms of demographics, education or even weather. It occurred to him that both states had waning agricultural economies, prompting him to begin exploring the link between changes in the labor force and declines in workplace physical activity. He quickly discovered that a decline in farming jobs alone could not explain increasing obesity around the country, and began exploring job shifts over several decades. Using computer models, Dr. Church and colleagues assigned metabolic equivalent values to various job categories and then calculated changes in caloric expenditure at work from 1960 to 2008.

Andrew Councill for The New York Times

Less physical activity during mostly sedentary workdays accounts for one piece of the obesity puzzle, researchers say.

"You see the manufacturing jobs plummet and realize that's a lot of physical activity," Dr. Church said. "It's very obvious that the jobs that required a lot of physical activity have gone away."

Ross C. Brownson, an epidemiologist at Washington University in St. Louis, said that both health professionals and the public needed to broaden the traditional definition of physical activity as something that occurred during planned exercise, like running or working out at the gym.

"We need to think about physical activity as a more robust concept than just recreational physical activity," said Dr. Brownson, whose 2005 report on declining physical activity in the workplace is cited in the PLoS One report. "In many ways we've engineered physical activity out of our lives, so we've got to find ways to put it back into our lives, like taking walks during breaks or having opportunities for activity that are more routine to our daily lives, not just going to the health club."

Researchers said it was unlikely that the lost physical activity could ever be fully restored to the workplace, but employers do have the power to increase the physical activity of their employees

by offering subsidized gym memberships or incentives to use public transit. Some companies have set up standing workstations, and marketers now offer treadmill-style desks. Employers can also redesign offices to encourage walking, by placing printers away from desks and encouraging face-to-face communication, rather than e-mail.

“The activity we get at work has to be intentional,” Dr. Ainsworth said. “When people think of obesity they always think of food first, and that’s one side of it, but it’s high time to look at the amount of time we spend inactive at work.”