

HEALTH

RESEARCHERS FIND JOB STRAIN MAY RAISE BLOOD PRESSURE AND ENLARGE HEART

DALLAS.—A "high-strain" job increases a middle-aged man's chance of having high blood pressure and an enlarged heart, according to a new study of workers in New York City.

"I think this study is one of the first to show what appears to be a definite connection between chronic stress and high blood pressure," says Thomas G. Pickering, M.D., principal investigator for the study. He and his colleagues reported their findings in the May issue of *Hypertension*, an American Heart Association scientific journal.

Pickering and his group have pioneered the use of "ambulatory" blood pressure monitors, which in this study recorded pressures every 15 minutes for 24-hour periods while the patients performed their normal daily activities. These 24-hour recordings are more reliable than con-

ventional blood pressure measurements, he explains, "because if you just have a measurement at one point in time, you don't know if the patient's blood pressure is high in other situations such as at work and at home." Pickering is professor of medicine at the Cardiovascular and Hypertension Center at New York Hospital-Cornell Medical College. Researchers used the ambulatory monitors in their study of 264 men at eight New York City work sites. "We found that the men who reported having high-strain jobs not only had sustained elevations of their blood pressure, but they also had enlarged hearts on the echocardiogram," says Pickering. (Echocardiography is a diagnostic method in which pulses of sound are transmitted into the body and the echoes returning from the surfaces of

the heart are electronically plotted and recorded.)

In their report, the research team defines job strain as "high psychological demands and low decision latitude on the job." For example, some clerical and assembly-line workers have high-strain jobs because they are forced to work fast and have low levels of control over the work process, explains Peter L. Schnall, M.D., first author of the study.

The 264 subjects, ranging in age from 30 to 60, were employed at eight work sites: a newspaper typography department, a federal health agency, a stock brokerage firm, a liquor marketer, a private hospital, a sanitation vehicle repair facility, a department store warehouse and the headquarters for a large insurance company. The 20 percent of the men who said they had jobs with the highest psychological demands and the lowest control of the work process were designated the "high strain" group.

"The remarkable thing about job strain is that it raises your blood pressure at work, at home, even during sleep," says Schnall, assistant professor at Cornell University Medical College. "Job strain seems to reset the entire blood pressure mechanism; it's not just raising blood pressure temporarily during the work hours."

After adjusting for other factors thought to influence blood pressure, the scientists found that job strain was associated

with a seven millimeter increase at work in the men's systolic pressure (the highest blood pressure measured in the arteries, which occurs when the heart contracts), and a three millimeter increase at work in diastolic blood pressure (the lower reading, measured between heartbeats).

However, the age of the individual seems to determine how their blood pressure reacts to job strain, Schnall says. Job strain had little or no effect on the blood pressures of men who were in their 30's, while men in their 40's with high-strain jobs showed a nine millimeter increase in systolic blood pressure.

Men in their 50's who had high-strain jobs showed a 15 millimeter increase in systolic pressure and an almost nine millimeter increase in diastolic pressure.

"Maybe you have to be in a high-strain job for a while before it affects your blood pressure," says Schnall. "Or maybe as you get older, you become more vulnerable to job strain."

The group also found that men on high-strain jobs were also likely to have slightly enlarged hearts, detected by echocardiograms.

The researcher found evidence suggesting "the possibility that high-strain work is a vulnerability factor, substantially altering an individual's susceptibility to other traditional risk factors," they report.

One such risk factor is alco-

hol: only among men in high-strain jobs did the use of alcohol seem to increase blood pressures. "We found a strong interaction effect of job strain and alcohol on systolic ambulatory blood pressure at work," they say in *Hypertension*.

"Alcohol has been reported to have adverse effects on blood pressure in a number of studies, but we know of no other research reporting an interaction effect of alcohol with an occupational risk factor (job strain)."

"So if you have a stressful job, alcohol is going to interact with the stress and raise your blood pressure more than either factor would by itself," explains Pickering.

This study verifies an earlier finding by the scientists, published in 1990, that men were nearly three times as likely to have high blood pressure if they

report having a high-strain job. But that study used "casual" blood pressure measurements taken at the job site rather than the more reliable ambulatory monitoring, the investigators say. Their new results need to be replicated in other, more detailed studies that include women and larger numbers of minority workers, the researchers add.

"Based on the large effects we observed on all measures of blood pressure as well as on LVMI (left ventricular mass index)," they conclude, "job strain would appear to be an important risk factor for hypertension among healthy working men."

Pickering and Schnall's co-authors are Joseph E. Schwartz, Ph.D.; Paul A. Landsbergis, Ed.D.; and Katherine Warren, B.A. *Hypertension* is one of six journals published by the Dallas-based AHA.

VIEW FROM HHS

by Louis W. Sullivan, M.D.



One of the most ominous trends threatening our nation is a perilous rise in fatherless families. Some 60 percent of American children will live part of their childhood in a single-parent home.

This loss of fathers is causing societal problems ranging from teen pregnancy to drug abuse. My hunch is that behind the baffling rise in senseless street and gang violence, drive-by shootings and "wildings," lies a group of young males raised without the love, discipline and guidance of a father. In fact, approximately 70 percent of juveniles in long-term correctional facilities did not live with their father while growing up.

A generation of young males are measuring their manhood by the caliber of their gun and the number of children they have fathered.

It is time that we put the issue of fatherless families and the indispensable role fathers play front-and-center on our national agenda.

A child with two parents is now the exception rather than the norm. Fewer people are marrying, and more are divorcing. At the same time, the number of children born to married couples is decreasing; out-of-wedlock births are surging. Today, more than one in four births is outside marriage.

Two parents are not always better than one. Many courageous and loving single-parents are able to care and provide for their children alone. But a strong two-parent family is the ideal.

Fatherless children are more vulnerable to physical, mental and emotional problems. They are five times more likely to be poor and twice as likely to drop out of school. In any given year, nine out of 10 children

from two-parent families avoid poverty, but one out of two children living in a mother-only family is poor.

A father's absence cannot be reduced to income loss alone; his attention, discipline and love are not easily replaced.

To reverse the trend toward fatherless families, we must reinvigorate a "culture of character" in our nation—a culture in which we support and reinforce one another actively in positive and healthy choices. We must re-evaluate our cultural values and the messages we send our children about marriage, family and sexual relations.

We must encourage fathers living apart from their children to remain involved in their children's lives. Only a third of absent fathers report that they see their children at least once a week, and nearly one in five has not seen his children for five years.

HHS has stepped-up child support enforcement to change the situation in which just half the women due child support receive the full amount owed, a quarter receive partial payment and a quarter receive nothing.

Also, for children whose fathers have completely abandoned them, we can strive to help through grandparents and extended family members, mentors and tutors.

Our nation is built on strong families and communities. If we protect these, no outside force can overwhelm us. But if our family and community ties grow weak, what will be left to save our children—and our future?

(Dr. Sullivan is U.S. secretary of health and human services.)

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