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AN ILL-FITTING CAREER WON'T JUST MAKE YOU UNHAPPY, IT CAN KILL YOU

For more than 20 years, Rockport Institute has gathered empirical data showing that changing from an ill-fitting career to one with a lower stress level reduces colds, flu and other immune system disorders. Many subsequent studies show this to be true. In addition, other studies confirm that an ill-fitting career causes stress that increases the risk of early death.

A major Finnish study found that those with stressful jobs had twice the risk of dying from coronary artery disease than satisfied employees. The study involved 812 workers. All were free from cardiovascular diseases at baseline. They were followed for a mean of 25.6 years. After adjustment for age and sex, participants with high job strain (a combination of high demands at work and low job control) had double (Relative Risk = 2.2) the cardiovascular mortality risk compared with their colleagues who had low job strain. The risk was more than doubled (RR = 2.4) for employees with effort-reward imbalance (low salary, lack of social approval, and few career opportunities relative to efforts required at work). The risk remained significant after further adjustment for occupational group and biological and behavioural risks at baseline. High job strain and high effort-reward imbalance were also associated with increased cholesterol concentration and body mass index at follow-up. *Kivimaki M, et al. Br Med J 325:857-60, 19 Oct 2002*

A study of 774 men published in Health Psychology found that hostility and pessimism were worse on the male's heart than smoking, drinking or obesity.

A study published in the April 2001 issue of the *Journal of Applied Psychology*, shows that immune function is weaker when people are in a bad mood. "This study adds to the evidence that a person's psychological state can influence their immune function," Ed Diener, PhD, a professor of psychology at the University of Illinois in Champaign.

The Bureau of Labor Statistics reports that 67% of American workers don't like their jobs and 41% of them are not employed in the fields which they studied in school.

The U.S. National Institute for Occupational Safety and Health reports job stress related disorders are fast becoming the most prevalent reason for worker disability.

40% of worker turnover is due to job stress. Xerox estimates it costs 1 to 1.5 million dollars to replace a top executive. For lower level employees it costs \$2000 to \$13,000 dollars per person.

1992 UN report called job stress "The 20th Century Epidemic" - The World Health Organization called job stress a "World Wide Epidemic".

US. Bureau of Labor Statistics: - “Neurotic reaction to stress” is the forth most disabling workplace injury. In 1993 more than 25 days were lost on average by each person suffering job stress.

National Institute for Occupational Safety and Health: -25% of those surveyed said their job was the single greatest cause of stress in their life.

British Medical Journal- Feb. 22, 1997-Reuters-Feb. 21, 1997 2 Studies-job stress may increase chances of coronary heart disease. Job control and pressure were tested.

Between 1981-1995, 44 studies were published, most of which found a significant positive relationship between job strain and all-cause mortality or job strain and CVD risk factors, such as hypertension.

Estimates of relative risk for men in cohort studies with positive results have ranged from 1.6 for all-cause mortality among 477 retired Swedish men followed for six years (25), to 1.9 for CVD mortality among a representative sample of 7219 Swedish male employees followed for nine years (50), to 6.2 for 79 male Swedish myocardial infarction (MI) survivors followed for 6-8 years (115). A relative risk of 2.9 for coronary heart disease (CHD) among 328 women followed for 10 years, was observed in the Framingham Heart Study (68).

Positive associations were found among cross-sectional, case- control, and cohort studies. Half of the 44 studies were population-based which enables generalizability of results. In addition, significant associations were found with a variety of formulations of the independent variable (job strain).

Of 12 cohort studies (10 of CVD and two of all-cause mortality), seven found significant associations (5, 8, 25, 33, 50, 68, 115). The Alterman et al. (1994) cohort study, while classified as non-confirmatory, provides results that are nearly significant: OR=1.40 (95% CI 0.92-2.14) for job strain controlling for CVD risk factors. Only after controlling for occupational status (blue-collar vs white-collar) does the OR drop to 1.03. Blue-collar status was strongly associated with job strain. However, while decision latitude was significantly associated with reduced risk, psychologic demand was also associated with reduced risk. The methodology of the non-confirmatory Hlatky et al. (1995) cohort study has been reviewed and criticized [attach letters to Circulation].

Four studies examined job strain and CVD symptoms while 20 studies examined job strain and CVD risk factors. While null results were reported for job strain and serum cholesterol (37, 86, 90, Alterman et al., 1994), job strain was associated with smoking in three (32, 81, Johannson, Johnson and Hall, 1991) of seven studies. In one of these studies, (Alterman et al., 1994), while "job strain" was not associated with smoking, smoking was associated with lower demands ($p=.058$, crude) and lower decision latitude ($p<.001$, crude).

Of eight studies of job strain and blood pressure measured in a clinic setting (3, 19, 37, 75, 79, 86, 90, 116, Alterman et al., 1994), in which typically only a few casual readings are taken, only one (37) found a significant association. However, ambulatory blood pressure monitors give both a more reliable measure (there is no observer bias and the number of readings is increased) and a more valid measure of average blood pressure (since blood pressure is measured during a person's normal daily activities) than casual measures of blood pressure (89). Of nine job strain studies

utilizing ambulatory blood pressure, five yielded significant positive results (99, 101, 108, 109, 116), while the remaining four yielded a mixture of positive and null results (38, 75, 113, 114). These studies, taken as a whole, suggest job strain acts, in part, to cause CVD through the mechanism of elevated blood pressure.

Workplace social support has been added to the job strain model as a third major job characteristic in several studies of CVD (8, 25, 49, 50, Johannson, Johnson and Hall, 1991; Hall, Johnson and Tsou, 1993), as well as a number of studies of psychological strain outcomes (e.g., 60, 71). The combination of job strain and low social support has been labeled "iso-strain", or "isolated high strain" work. Only one study (50) directly examined "iso-strain" as a risk factor. Among 7219 employed Swedish men followed for nine years, "iso-strain" was associated with CVD morbidity and mortality.

In other studies, the main effect of low social support on CVD was examined (with positive associations, 25, 49), as well as the interaction between social support and job strain (8, 25, 49). Social support was as an effect modifier in the Swedish study of retired men (25) (increased job strain-mortality risk ratios for those with low social support), in the Swedish factory worker study (8) (reduced high latitude-mortality risk ratios for those with high workplace social support), and in a Swedish national study (49) (increased high demand-low latitude-CVD prevalence ratios with greater workplace social isolation).

Having high levels of control over one's job responsibilities can backfire if a person lacks confidence on the job or has a propensity to take responsibility for negative outcomes at work, says new research. Such a combination of control and responsibility-taking can make work more stressful and make a person more vulnerable to infections, like bronchitis, influenza or even the common cold. These findings are reported on in the April issue of the *Journal of Applied Psychology*, published by the American Psychological Association (APA).

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