Just because a degenerative type of musculoskeletal affection occurs on the job does not necessarily make it work-related.

Indeed, to date, there are no strict, individual-specific, dose-response criteria that quantify what exactly constitutes, for that person, excessive, overload, repetitive, unnatural, awkward, long duration exposure, extreme, unusual, dangerous, or disproportionate, in a sense that threatens that individual’s health and well being. The very few attempts to develop such criteria tend to be anecdotal, rather than based on rigorous, carefully controlled, randomized, double-blind investigations, or strict, statistically meaningful, unbiased, longitudinal (prospective) studies. Moreover, there are no universally accepted operational definitions for what, exactly, one means when one talks about repetitive strain injuries, cumulative trauma disorders, wear-and-tear affictions, overuse damage, or degenerative conditions. Indeed, these are not scientific terms, and while used in relation to issues of causation, provide little or nothing in the way of understanding. They are neither injury/disorder-specific enough, nor rigorously/precisely/operationally defined enough to provide any meaningful insight into cause/effect relationships. That is why the word “association” is often used, rather than “causation.” Association may or may not have anything to do with causation.

Still, as we continue to cling tenaciously to the notion that there are these work-related risk factors, the literature on the subject is proliferating at an incredible rate, helped along by two significant and often-quoted government reports: the 1997 NIOSH Publication No. 97-141, “Musculoskeletal Disorders and Workplace Factors,” and the 2001 NAS piece, “Musculoskeletal Disorders and the Workplace.” Be that as it may, consider the following: The average day is 24 hours long, one-third of which we are (or should be) sleeping. That leaves 16 waking hours, half (or roughly) of which typical working adults spend on the job. Thus, since we are at

to be among the things one does anyway as a routine activity that is just a part of everyday living, like climbing up and down stairs, using one’s hands, walking, or lifting things (including sometimes-heavy grandchildren!). Indeed, following a logic identical to that developed above, one can easily show that there is a better than 50–50 chance that the affliction is not work-related but, rather, is correlated with the natural aging process, other typical activities of daily living, hereditary issues, and lifestyle (especially alcohol, drug, and tobacco abuse, and obesity). I call aging, smoking, and obesity “work-related.”

Speaking of 50–50 chances and medical fads, I am reminded of an editorial that is germane to this very topic. It appeared in the March 16, 2003, edition of The New York Times Magazine Desk section. Written by Lisa Sanders, M.D., the editorial was entitled, “Medicine’s Progress, One Setback at a Time.” In it, Dr. Sanders recalls entering medical school some 10 years earlier, and hearing the Dean declare in an opening white-coat ceremony, “Half of what we teach you here is wrong—unfortunately, we don’t know which half!” Based on my own experiences in this profession, I am inclined to think that the Dean may have been somewhat conservative in his estimate, and that the actual percentage is considerably higher! This point of view is reinforced by Drs. Mark Hyman and Mark Liponis in their book, Ultra-Prevention (New York: Scribner, 2003). In discussing “The Myths of Modern Medicine,” they start right out with “Myth 1: Your Doctor Knows Best” and “Myth 2: If You Have a Diagnosis, You Know What’s Wrong with You.” Without coming right out and saying so, they imply, and I agree, that there is a huge gap between the concepts of “reasonable degree of medical certainty,” which goes to the issue of diagnosis and treatment, and...
sonable degree of scientific certainty," which gets to the heart of criteria that specifically define cause/effect relationships. Making a diagnosis and treating a patient, even if that treatment is effective, does not necessarily mean that one knows exactly what is wrong with a patient, much less what caused it. (I discuss this at some length in my books, Engineering Principles of Physiologic Function, New York: NYU Press, 1990, and Biomedical Desk Reference [with Dr. Alan Tempkin], New York: NYU Press, 1991.)

In and of itself, I am less concerned with the fact that 50% or more of what doctors learn in medical school is actually wrong than I am with the existence of an establishment that 1) believes otherwise, 2) refuses to recognize that uncertainty is the essence of the medical profession (as it is, to a great extent, the scientific profession as well), 3) declares its point of view to be unquestionable (especially in court!), 4) veils itself in a cloak of authenticity, and 5) quells (often violently) any attempt to challenge or refute its various positions (it was literally worth one’s life to challenge Galen, and not much has changed since). Yet if scientific formulations are to withstand the test of time and prevail as viable theories, they, as the famed philosopher of science Sir Karl Popper pointed out, must be expressed in a way that subjects them to the possibility of “falsification.”

If scientific formulations are to withstand the test of time and prevail as viable theories, they, as the famed philosopher of science Sir Karl Popper pointed out, must be expressed in a way that subjects them to the possibility of “falsification.” Thus, when the newly formulated germ theory of disease dominated the medical community (driven from around the middle of the 19th century through at least a quarter of the 20th century by the growing field of microbiology), any disease for which there was no known cause was automatically classified as “zymotic” (an early term for infectious disease, from the Greek word for the fermentation process believed to cause it). Today, we seem to be looking for a genetic basis for everything because the human genome project has established a new fad. So, too, any degenerative musculoskeletal disease whose etiology is not clearly defined, but that can, by whatever means, be shown to have some vague association with the labor force, is being automatically categorized as a work-related musculoskeletal disorder. And why not? After all, people do work. People spend half or more of their waking hours at work. We don’t really know what causes these afflictions, and it’s a very lucrative business. Is it for real? Perhaps, until the next fad comes along.

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