

Measuring Stress Accurately Identifies High-Risk Employees

Sometimes the results of health risk assessments (HRA) are predictable. Bob in accounting, who has a body mass index of 35, smokes, eats poorly, and leads a sedentary lifestyle, will likely fall into the high-risk category and be targeted for intervention.

However, Sally in human resources appears to be the picture of health; she walks 15 minutes at lunch time, stays away from sweets, and packs a salad for lunch most days. Not surprisingly, her blood work is within normal limits with maybe 1 or 2 minor exceptions. However, Sally is struggling as a single mother of 2 who also cares for her ailing mother. At work, a coworker recently left, doubling Sally's workload until a replacement can be hired.

The combined stress factors in Sally's personal and professional life have put her body into a prolonged state of allostasis—the body's method of coping with stress by releasing hormones to counteract the effects of stressors. This continued over-exposure to stress hormones, called an allostatic load, will eventually cause damage to the various systems of her body.

As in Sally's case, when the body gets stuck in this over-aroused state, every time she is challenged—from spilling coffee on her shirt to rushing to get her kids off to school to suddenly hitting the brakes—her autonomic nervous system (ANS) is activated, triggering "fight or flight" responses. The hormones that are released—cortisol and adrenalin—may be activated as many as 80 times a day, thereby putting her at high risk for future health problems.

For example, from a metabolic standpoint, the over-activity of Sally's ANS and increased cortisol secretion produce higher than normal levels of sugar in the blood. If prolonged, this can lead to a rise of insulin in the bloodstream and possibly Type II diabetes. Other potential problems range from cardiovascular disease to immune system suppression to allergic reactions.

Conversely, the body can also get stuck in an under-aroused state, which can also have negative effects. When the body can't mount an adequate response to acute stress, it can

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lead to increased inflammation, chronic fatigue, and worsened symptoms of autoimmune disorders (such as arthritis and lupus).

"We really need to look at health risk assessments in a whole new way," said Bruce McEwen, PhD, a neuroscientist who pioneered research in the late 1960s that later became the basis for allostasis and allostatic load, a fellow of the National Academy of Sciences, and chair of the Allostatix LLC science advisory board. "By measuring allostatic load, we can determine the cumulative impact of daily life stresses on an individual's overall health and predict likely future health problems with greater accuracy than typical HRAs."

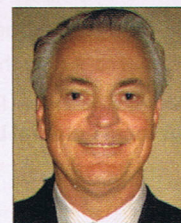
Our new predictive diagnostic test does just this. The Allostatix Load Test measures the negative effects stress has on various bodily systems. The test is comprised of standard blood tests and biometric measurements which analyze several body systems. Employees receive a health status report which identifies their risk level as low (green), medium (yellow), or high (red) risk and provides an overview of how each body system is currently affected by stress. Employers receive an in-depth, aggregate report displaying summary information and comprehensive wellness recommendations.

We're finding people with in-range lab and biometric values that likely would not be identified as at-risk—normal blood pressure, body mass index, cholesterol—who are, in fact, at high risk for developing serious illness because of the way their body is reacting to stress. This is the first time this science has been applied commercially to assess and accurately predict future health status.

In essence, we can give employees a pretty solid indication of where they're headed if they don't act to change their behaviors. Employers stand to save significantly on health care expenses by accurately identifying at-risk employees before symptoms or claims are experienced and then communicating preventative recommendations to their employees based on their risk level.

Like all employees, Sally and Bob will have varying levels of commitment to lifestyle changes. However, first both need an accurate picture of their current health status to understand the implications of not making healthier choices and managing stress. **CDHC**

Allostatix LLC is the creator of Allostatix Load Test, a new tool that measures effects of stress on health and identifies often-overlooked at-risk populations. Gordon Horwitz has led successful ventures including Austerica Greenhouses Inc. and Kwalu Inc., a health care furniture company, and was the director of business development for Standard Textile Company. For information, visit www.allostatix.com or call 513-351-0368.



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