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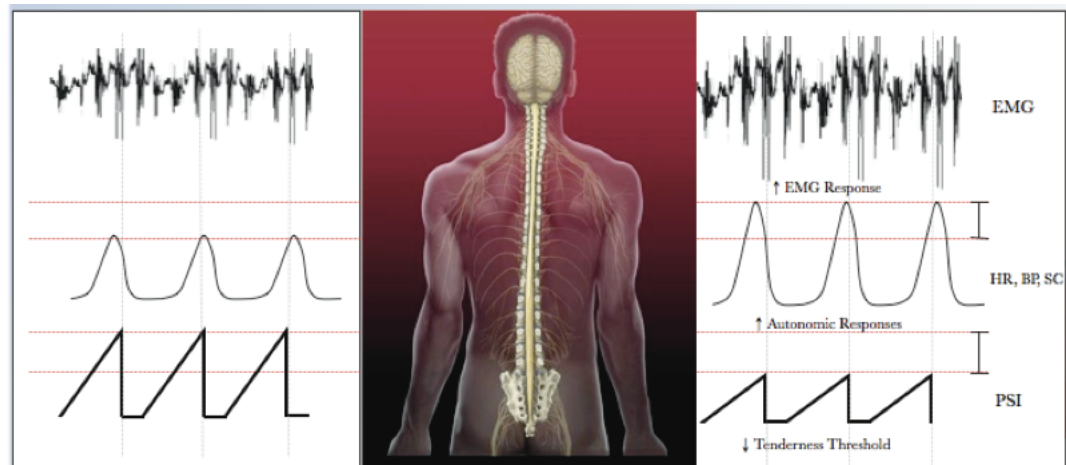
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Quantitative diagnosis of pain has been problematic for medical professionals in both civilian and military settings for centuries. Nearly all widely used methods rely on patient self-reporting using a sliding scale or a pain rating scale that ranges from zero to ten. In these cases, the caregiver must use the patients' feedback regarding their perception of pain to attempt to determine the actual amount of pain the patient is experiencing. Until now, there has been no way to quantitatively assess an individual's pain, understand the source of the pain, and quantify the amount of pain experienced by an individual in a manner that can be used comparatively across patient populations.

**The Innovation of NP3:** The innovation of the Neurophysiologic Pain Profile (NP3) lies in using quantifiable and objective biofeedback such as response to pressure, heart rate, skin conductance, and blood pressure with verbal responses to generate an advanced assessment of an individual's pain. The NP3 report matches patient-specific stimuli with that individual's unique nervous system output. Measurement of the temporal and quantitative relationship between stimulation and patient response provide accurate determination of pain, potential emotional aspects to



pain, and social complaints. As the protocols compare control and test sites in each test subject, issues of variation between gender, age, and social background are virtually eliminated. NP3 uses the most advanced equipment for simultaneously monitoring and analyzing multiple physiologic responses to provide a broad assessment of a patient's pain.

**Emotional Overlay of Pain:** It is natural for an individual to “guard” a painful area. As pain shifts from acute to chronic (short-term vs. long-term pain) however, a person’s brain can be resigned to the fact that the pain will never go away. The brain is locked into constant monitoring for the pain and as the pain continues, the brain’s activity is reinforced. NP3 detects emotional overlay so that a patient’s emotional state is also considered during treatment to ensure that the entire person is treated holistically, rather than only treating the physical pain experienced by the patient.

**Sociodynamic Aspects of Pain:** Some pain manifestations are exaggerated or may be the result of ulterior motives. In these cases individuals are attempting to “game the system” by pretending to be in debilitating pain for numerous reasons including drug dependency. These behaviors are costly to medical systems, employers, and insurers; and in military settings can lead to a decrease in operational readiness. In these cases, NP3 will detect no physiological signs of pain, alerting the caregiver that the individual is not actually experiencing the pain they describe.

NP3 provides a range of deep, valuable benefits to both caregivers and patients. By providing medical staff with the ability to objectively assess the pain an individual is experiencing, NP3 increases quality of care and improves patient outcomes. When pain can be measured in the manner that NP3 provides, clinicians can better diagnose the source of pain, treat the underlying issues generating the pain, rehabilitate if necessary, and discontinue care when appropriate.

**Clearly, NP3 is a game-changing technology solution to a problem that impacts the medical community and patients alike. NP3 will lead to improved care of pain-sufferers by giving clinicians a tool they’ve been seeking for hundreds of years.**

*AxHill LLC brings scientific analysis and deep technical understanding to the most pressing problems of our clients. The AxHill team combines understanding of relevant scientific research with awareness of emerging opportunities to deliver approaches and technologies that best address the challenges facing those we support. Our proven approach delivers expertise and technology in an agile and adaptable manner that is tailored to the situation, client, and task to ensure timely solutions.*

*When expert analysis is required to determine the best course of action, AxHill offers in-depth understanding of biological and medical topics with an ability to rapidly and effectively communicate findings to a non-expert community.*

