Managing Workplace Stress

Feasibility Study of Stress Measurement Techniques

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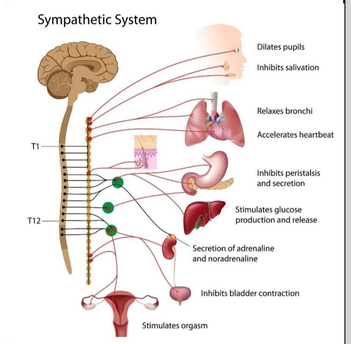
Introduction

- Stress is an integral part of our daily lives
- Stress motivates us
- Stress drives us to succeed
- Stress overwhelms us
- Over stressing employees is bad for the bottom line
- Under stressing employees is bad for the bottom line
- Leadership needs tools to provide timely information regarding stress in a team
- Methods are available to determine an individual is under stress
- The challenge is to correlate stress indications back to the source of the stress so it can be mitigated

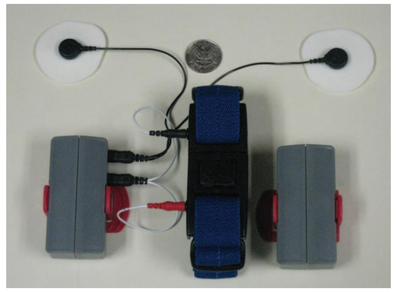
Methods

- Explore current research on various stress measurement techniques
- Stress activates sympathetic component of autonomic nervous system and produces observable results



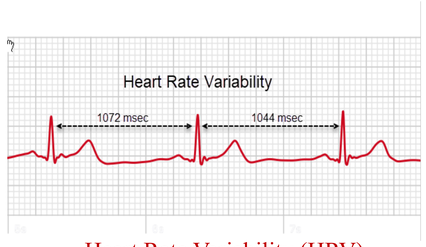
Results

- Effective stress monitoring must be non-intrusive and continuous
- Non-intrusive ➔ Does not interfere with daily activity
- Continuous ➔ Must have sufficient battery life to operate all day



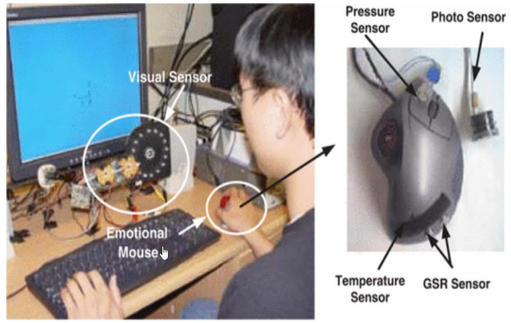
Autosense (2011)

- Achieved good results in field tests
- Would not be considered portable by current standards



Heart Rate Variability (HRV)

- Reflects activation of Sympathetic nervous system
- Reflects biometric changes in the scale of several minutes



Human Monitoring Workstation

- Facial monitoring
- Keyboard and mouse interaction monitoring
- Achieved good results in field tests
- Would not be considered portable by current standards

- Stress is easy to detect but hard to determine precise cause
- Stress monitoring must be continuous to be effective
- If stress detection is timely, individual can identify the source
- Individual can then potentially modify the source of the stress
- Those who desire to be effective leaders must be open to analyzing and understanding the stress that the work environment creates
- Leaders must allow employees freedom to reduce stressful situations
- Identifying the cause is the first key to mitigating stress

Conclusions

- Sensors embedded in small wearable devices need to have the capability to operate continuously all day
- Will take multiple sensors tracking multiple metrics to unambiguously identify stress
- Current sensors have the capability, but cannot perform continuously all day
- Since sensors can not maintain continuous operation, the current applications do not operate with that approach
- Next generation upgrades to current devices are expected to meet these operational targets
- Stress monitoring will take multiple sensors feeding into a smart phone app to monitor stress in real time
- Apple Watch, Fit Bit, and Oura ring monitor several key biometrics

- Sensor and software improvements that the next generation of devices will include, coupled with user feedback, could potentially provide a very effective platform for monitoring stress.

Literature Cited

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Further Information

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