



Our STRESSMONITOR solution is based upon established technology developed for the USA medical market. Our developers have provided stress monitoring tools in the USA and Europe since 1996. Their team of clinicians and software developers has developed a number of **Heart Rate Variability (HRV)** systems for the biomedical research, general educational and fitness markets. Indeed HRV systems developed by them were used as part of the NASA space programme to measure astronauts stress levels. We at Stressonhold have adapted this technology to suit the needs of the contact centre environment.

Heart Rate Variability (HRV) is defined as the measurement of the time intervals between the peaks of consecutive heartbeats as measured in milliseconds. A typical STRESSMONITOR session measures between 600-1200 individual HRV readings thus providing a very accurate assessment of overall individual Heart Rate Variation (HRV) levels.

It has for long been recognised that for good health these intervals should vary in what appears to be a random manner. The use of HRV measurement originally comes from the field of obstetrics where it became common place in maternity wards in the 1960's. When there was a reason to be concerned about the health of an unborn child, doctors would monitor the heart of the foetus by attaching electrodes to the head.

Electrocardiogram Heart Rhythm measurement



Although it was originally believed that heart rhythm should be even, it was discovered that unborn infants with near perfect rhythm in the intervals between heartbeats were often born dead. It was also noted that unborn infants with a variability in their heart rate rhythms were born healthy. Later, HRV tests were completed in hospitals to see if the same could be applied to adults. This research validated not only that it did, but also that HRV was effected by a range of conditions both physiological and psychological, including stress, fears and anxieties.

It is now been established that stress, can affect your HRV measurements. If you are feeling 'under the weather, less than perfect or a bit rough,' no matter what the reason, the chances are that your HRV will be negatively affected. Research has also shown that individuals HRV can also be negatively affected by age, fitness levels ,certain foods, alcohol, smoking and drugs (both prescribed and elicit)

At times we all experience stress of one kind or another. In most cases people cope and just get on with their lives hoping that things will improve or work themselves out. If this stress (whatever it may be) is short lived, then the body's natural ability to heal itself will resolve most problems and there will be no dramatic changes in HRV. However, if the stress is long term, then there is an increased risk of physical and emotional fatigue which will be observed with HRV analysis.

When Stress is experienced natural changes in a persons physiology occurs, left unchecked the body will adapt to these dysfunctional patterns and fatigue, (both mental and physical) together with emotional distress can occur. Long term exposure to these processes can cause illness and disease such as cardiovascular disease, adult onset diabetes, anxiety, depression and panic disorders etc. Simply put, HRV data is an extremely accurate indicator of well-being. Our focus at **Stressonhold** is monitoring this level of physical and mental stress.

As an indication to the benefits of improved HRV, a research study published in the American Journal of Cardiology states that "... each increase of 10 milliseconds in HRV, gives a 20% decrease in risk of mortality ..."

STRESSMONITOR can evaluate an individuals stress level and provide you with an accurate scientifically validated biological marker of these Stress levels. This is accomplished via a simple ten-minute assessment test of the person completed at their desktop and which does not require them to stop their normal work. Over a typical STRESSMONITOR session around 600-1200 individual measurements can be made to arrive at an accurate assessment of individual Heart Rate Variation (HRV) levels.

STRESSONHOLD

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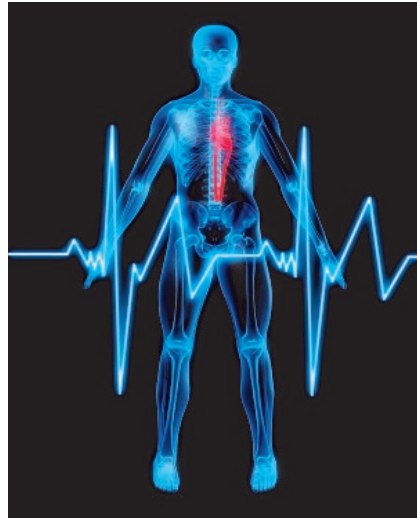
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The Contact Centre Stressors



- Abusive, Aggressive or Demanding Customers
- Excessive Performance monitoring, always watched , timed and targeted
- System problems, computers, poor IT systems etc
- Boredom. Monotonous work
- Lack of management support
- Lack of up to date information , feeling abandoned
- Poor working environment
- Unrealistic targets
- Lack of control over workload

We focus on stress measurement as it is an important indicator of health in general. There are many negative factors that affect our life every day, which causes our body to generate a stress response. Stressful episodes may be short or long. Our exposure to stress causing factors (stressors) is inevitable but, in many cases they are not significant and their effect is relatively harmless. Only very frequent or extremely strong stressors may exhaust the human body and trigger developing health problems. Under the influence of a stressor , a sustained focus of excitation is formed in the brain cortex which begins dominating all the body's functions. This reaction initiates a chain reaction to prepare the body for a "fight or flight" response. It ignites a sequence of biochemical reactions throwing stress hormones into the bloodstream. They cause an increase in heartbeat, blood pressure, blood sugar level and speed up metabolic processes to increase energy production. As a result of this the body is ready to fight for survival. If the effects of the stressors remain , an excitation in the brain cortex persists and stress hormones keep being released into bloodstream. The above stress response process is correctly know as the General Adaption Syndrome (GAS).

This physiological mechanism of stress response has been developed by the nature in humans and other animals to survive. However, humans in the modern world generally do not use their muscular power in stressful situation so, a natural stress response does not occur as it was designed by evolution. So as stress hormones continue to circulate in the bloodstream they keep the body's organs and functions in an agitated state for as long as the stressor is present with often no release mechanism.

Our Testing Process

During every testing procedure we gather heart rhythm data using a very accurate wireless pulse wave sensor called a *photoplethysmograph* attached to the ear lobe. The sensor uses light beams passed through blood vessels to provide accurate measurements of heart rate variation which is transmitted directly to our software and automatically uploaded to our web based service contained within our secure data centre for storage and later retrieval. We then analyzes this information using the unique **Heart Rate Variability (HRV)** algorithms within our software. The results of this analysis are then evaluated by comparing them with expected predicted values taken from our large database, which was created through collaboration with reputable academic organizations. The assessment results give both indications of stress and the ability of the person to cope with future stress but should not however be taken as clinical evidence of individual health concerns.

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Our Services

Our Stress Monitoring Service

STRESSMONITOR can either be used to provide a single report on individuals to identify current stress levels or as an ongoing measurement where individuals are measured at regular intervals to both indicate current stress levels and to provide comparisons with previous reports to review any reductions or increases in individual stress levels. Individual stress levels can be combined to show team, departmental, site or contact centre comparisons as required. Individual levels can also be compared against company averages. As the algorithm is based on specific analysis of heart rate variability of the cardiac intervals recorded for a short period of time we can measure as many agents as required over a relatively short period.

Our Stress Reduction Services

Stressonhold is also able to provide advice and guidance on techniques and practices which are known to reduce stress. We have a range of additional software modules that can be utilised to work with any individuals to reduce their stress levels. We are also able to work alongside and as part of the your existing employee wellbeing programmes to further enhance any investment made. In addition we are able to provide training to recognise the symptoms of stress for your management team.

Our Contact Centre Audit Service

Stressors within a Contact Centre can be many and varied, for us to be able to address these it is vital that we first understand the business objective of your Contact Centre and assess the technologies deployed to deliver this. By completing this exercise we can identify any gaps within the technology that will impair business performance. Once completed we will provide recommendations that will enhance business performance without adding to the individual stress levels. These recommendations can cover a wide range of areas within the Contact Centre, including, environmental, technological and working practices considerations and will always take into account the best practice guidelines for stress management.

Break the Stress Cycle and contact Stressonhold for details on our free STRESSMONITOR trial.

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