



Chronomedical Health Assessment

A Proactive Approach towards maintaining Health, High Performance and Longevity

"What is Chronomedicine?"

Chronomedicine is the science that researches the link between physiological rhythms, performance, illness and health, aging and longevity. Severe illness, like heart attack, stroke, hypertension, diabetes, cancer, burnout and depression are accompanied by pathological changes in the biological rhythms. Many years of scientific research into the development of severe chronic diseases has shown that Heart Rate Variability is a highly correlative predictor for the development of ill health, as well as an accurate predictor of the likelihood of sudden cardiac and even non-cardiac death. The changes in the rhythm of the heart manifest often up to 7 to 8 years before the manifestation of these diseases.

"What is Heart Rate Variability?"

Heart Rate Variability (HRV) measures the changing intervals between two heartbeats. HRV reduces with age and ill health, and is an accurate indicator for the short and long term impact of stress, the quality of sleep, the biological age (vitality), the adaptability of the organism (risk of accidents) and the capacity to regenerate and recuperate from strain. Today, heart rate variability is a scientifically well-recognized indicator that measures health and indicates the risk of illness, accidents and mortality. It allows the early diagnosis, health monitoring and the assessment of the efficacy of therapeutic interventions and contributes importantly towards effective health promotion, as well as prevention and treatment of serious illness.



"What is the Autochronic Image?"

The HeartMan is a heart monitor for a 24hour ECG that measures heart rate variability, the beat-to-beat intervals of the heart with very high precision, and matches it to your daily activity profile. The autochronic image (ACI) is an analysis of the frequencies and changes of your heartbeat during 24 hours matched against your daily activity. All individual data is referenced against a database with a large number of healthy individuals of the same age and sex and at the same time of the day.

The ACI gives detailed bio-psycho-social information and feedback to support any process of diagnostic, advice or life coaching, such as:

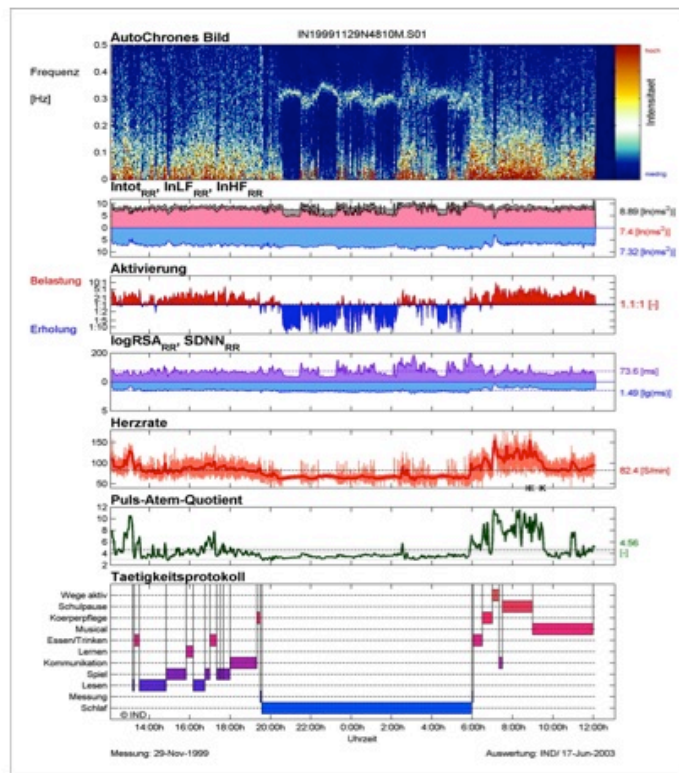
The ACI gives detailed bio-psycho-social information and feedback to support any advice, training and coaching, such as:

- Resilience: Appropriate, excessive or too low challenge or demand
- The impact of different activities on your organism (high performance states; recreational and exhausting activities)
- Biological / chronological age, your true age
- Quality of sleep: Stages of sleep, depth of sleep, ability to fall asleep, arousal during sleep, recovery through sleep
- Width of frequency and intensity of the Heart Rate Variability - a powerful predicting indicator for chronic disease
- Autonomic nervous system balance
- Flexibility: Ability of the organism to adjust to challenging situations
- Ability to recover: During day and night time, during work and free time

All these parameters can be positively influenced through training.

Auto-Chronic Images - Examples:

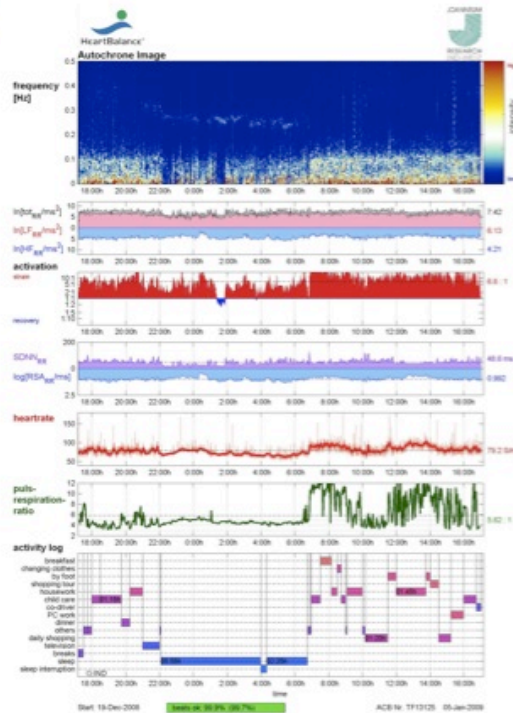
Boy, 10 years old



© IND Austria 2007

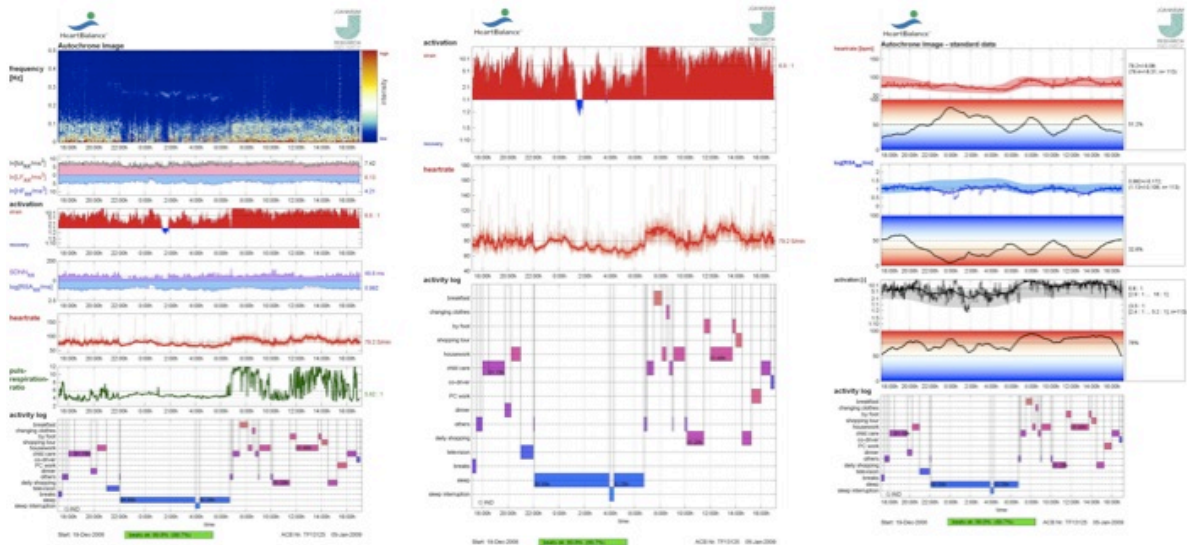
See the strongly developed blue area in the second graph (below the midline), indicating strong parasympathetic, restoring activity during seep.

ACI of a female chief-executive (40 y. old) Risk of burnout



Overall reduced activity in the ACI, which indicates a poor level of vitality at present. The parasympathetic activity (recovery) during sleep is comparatively poor. (The second graph shows no blue area.) Overall strong sympathetic activity (strain) during sleep that indicates too much dream activity (processing of day experiences) during sleep. Pre- burn out picture.

ACI of a female chief-executive (40 y. old)



The first two graphs show a relatively high heart rate, the next two graphs show a relatively poor parasympathetic activity (responsible for health protection and recovery), compared to her age group. The third graph shows the comparison data with individuals of the same age and sex.



"What will it involve?"

One of our doctors will see you for the initial consultation, and take your medical history, current health status and a short stress test (DASS).

The heart monitor will be fitted in the same session. It is small, light, very easy to handle, and can be worn comfortably, for example on your belt or carry it in your pocket.

Over the next 24 hours you will keep a written activity protocol and note down any activity that lasts longer than 15 minutes. After 24 hours you will remove the heart monitor (ECG) and bring it back to the clinic or send it by courier.

Two weeks later one of our doctors will discuss with you the outcome of the investigation and will advise you on improving your health, discuss possible life style changes and introduce to you, if appropriate, simple but effective Heart Rate Variability Training exercises, such as breathing techniques and emotional management exercises.

You will receive a written report with graphics from the autochonic image and the stress test, as well as a summary of the outcome of the consultation.

The HeartMan



The HeartMan Technology and the Autochrone Image

*Developed by Professor Dr. Max Moser, Joanneum Research and
Medical Physiology of the University of Graz, Austria*