

INNOVATION by INTUITION



BAUfit

Work stress in the construction industry: Listen to your heart beat

*Institute of
Health Technology
and Prevention Research*

Stress and time pressure are as likely to be the cause of accidents, injuries and long-term health damage as demanding physical work. The BAUfit project has developed a complex monitoring and training programme to reduce accident rates and days lost due to sick leave, help construction workers avoid stress and prevent serious health problems later in life.

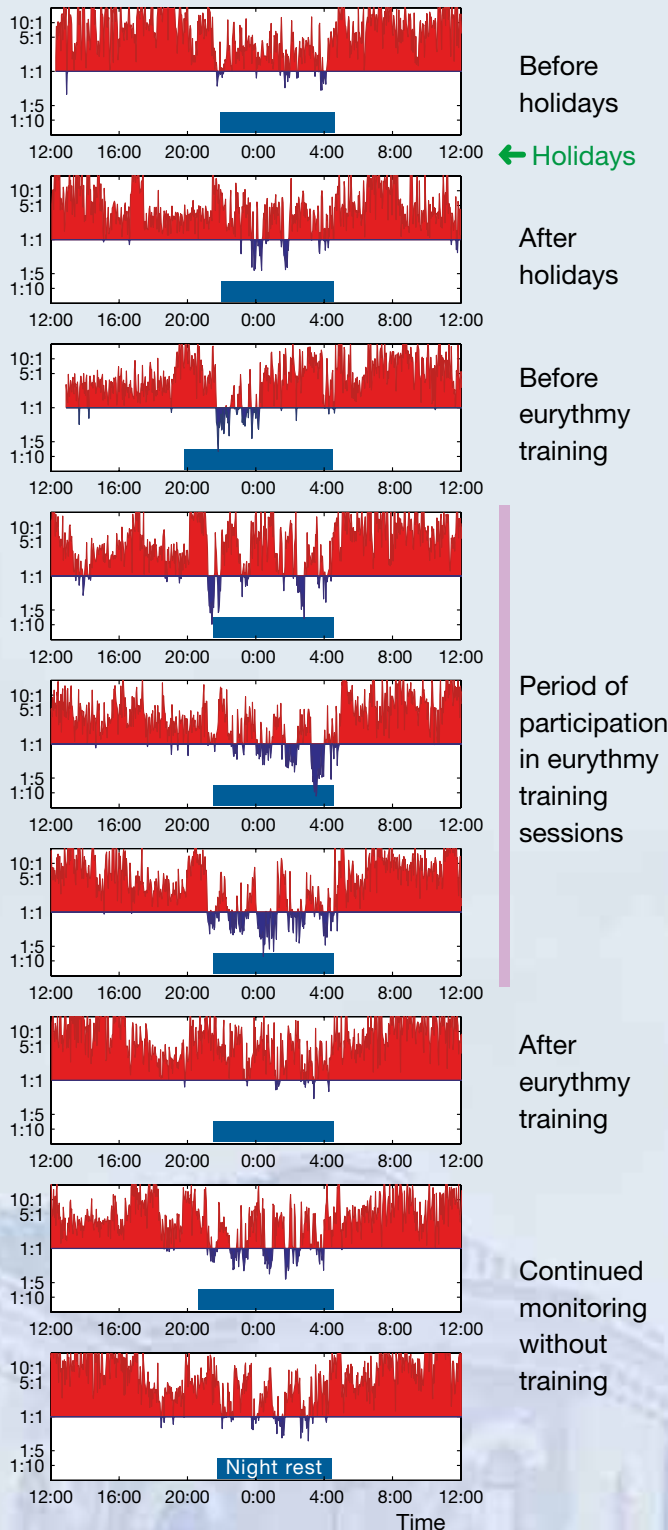
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Correct movement and posture

The Problem

Vegetative Quotient

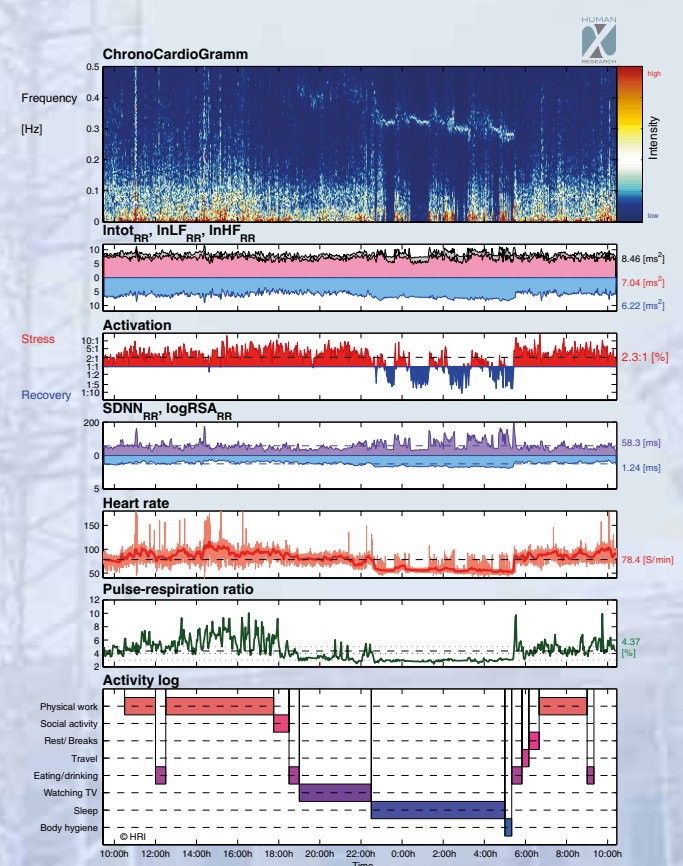


Autonomous balance over 24-hour period
The subject's quality of sleep significantly improved while he participated in the eurythmy training programme

Approximately 600,000 working days are lost every year in the construction industry in Austria through accidents. Furthermore, around 60 percent of construction workers in Austria have to retire early due to invalidity as a result of the demands of the job. Work on a construction site is not only physically demanding, construction workers are also exposed to harmful environmental effects such as noise and dust, and stress as a result of having to meet tight deadlines.

Recent studies have shown that stress is just as important a risk factor as not lifting and carrying heavy loads correctly because stress can cause painful tensing of the muscles and this considerably affects a person's coordination.

The harmful effects of such a combination of risk factors cannot be treated in isolation.



ChronoCardioGramm
based on heart rate recordings during a 24 hour period



The Solution

Experts from many different fields collaborated to develop and evaluate a programme which adopts a holistic approach to change work patterns, prevent accidents and long-term health damage.

Implementation

Training

- Coaching, communication skills training and consultation sessions for managers and site foremen aimed at generating problem awareness and improving the work atmosphere. The intention is to reduce the causes of stress at the workplace.
- Sessions to practise correct movements and postures.
- Complementary exercises that participants can do as they work or during a break to develop an awareness of their own body.
- Eurythmy training sessions to improve the participants' perception of body and space as well as their ability to work as a member of a team. This helps to reduce stress levels and avoid accidents.

Evaluation

- Measurement of vegetative regulation to gain an insight into the balance of the autonomous nervous system and how individuals deal with and recover from stress.
- AutoChrono Imaging to track recovery during sleep.
- Questionnaires to find out how a person is feeling, how they cope with stress and when they feel relaxed, under stress or recovering from stress.
- Work analyses to record and systematically evaluate tasks and work activities. Questionnaires to evaluate psychological factors like job satisfaction, boredom and monotony.
- Recording of recurrent movement patterns to encourage workers to critically assess their own movements and those of others.

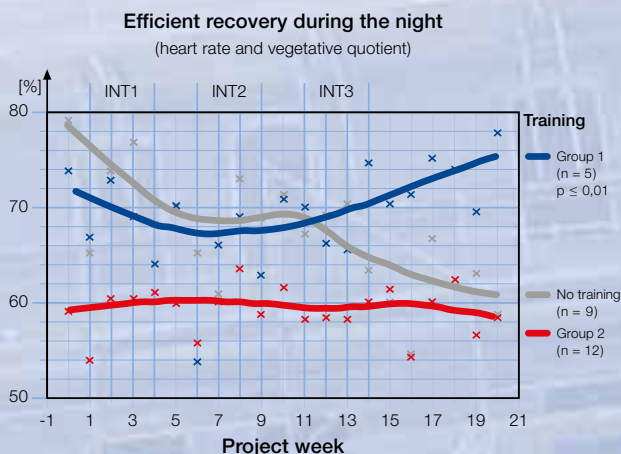
The evaluation provided useful information and proved that the methods we applied were efficient. ChronoCardioGramm as well as stress and recovery profiles can be used to give feedback on a person's stress condition. The information gained can be employed to increase the motivation of the workforce and is greatly appreciated by management.

Effects

There was an improvement in the stress and recovery rates of the construction workers who participated in the training sessions. Construction workers who participated in at least 10 sessions were able to maintain their sleep quality and ability to recover throughout the year. The group who participated in eurythmy training for two months (Group 1 – blue) experienced an improvement in their sleep quality, whereas the group that did not participate in any of the trainings showed symptoms of 'burn out' and worsening sleep quality towards the end of the year.

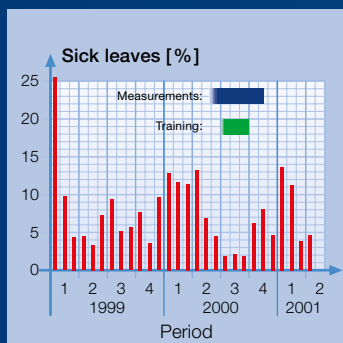
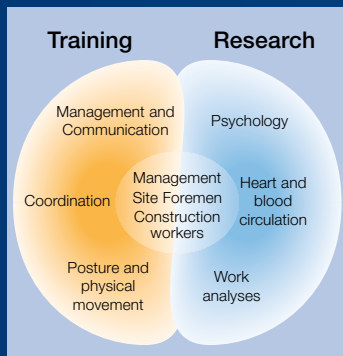
The most impressive result was the drop in the accident rate to zero. The number of working days lost through illness also fell significantly. The same effect was achieved in two other BAUfit projects on other construction sites.

The BAUfit project can be considered as a successful model of how to use a holistic approach to improve occupational health and is currently being modified so that it can be used with other occupational groups.

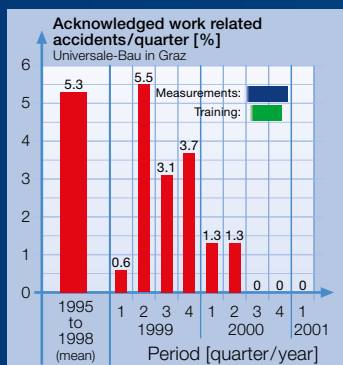


Recovery at night during the project:

The group receiving no eurythmy training (grey) experienced a steady decline in their quality of sleep during the project phase. In the group that received two months of eurythmy training (blue), the quality of sleep improved.



Decline in number of sick leaves during the first BAUfit project



Decline in accident figures during the first BAUfit project

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