VITAMOVE OVERVIEW

IN GENERAL

VitaMove will enable you to easily asses your patient's physical activity, posture and motion providing an objective and accurate insight into their daily lifestyle. VitaMove consists of two small devices. It is worn using a neoprene strap around the chest and the right upper leg, thus providing measurements of a patient's activity, posture and motion for up to 7 consecutive days. VitaMove can be worn inconspicuously underneath existing clothing. VitaMove comprises of two hardware units and also software. This software enables the care giver to download and manage patient recordings, provides automatic analysis and reporting of recordings and also has advanced scoring tools. Both hardware and software have been built to quickly add new functions and features, meeting all your measurement requirements.

VITAMOVE RECORDERS

The hardware of the VitaMove recorder consists of a small, light weight casing containing a tri-axial accelerometer, a rechargeable battery, a USB connection, raw data storage capability on a Micro-SD Card and wireless technology to enable microsecond time synchronization with other recorders in the same body network. Using this advanced time synchronization all recorders take measurements at exactly the same time. One VitaMove network can range from one recorder for analysing basic physical activity, to eight recorders on upper and lower legs and arms for a more detailed registration of specific problem areas.

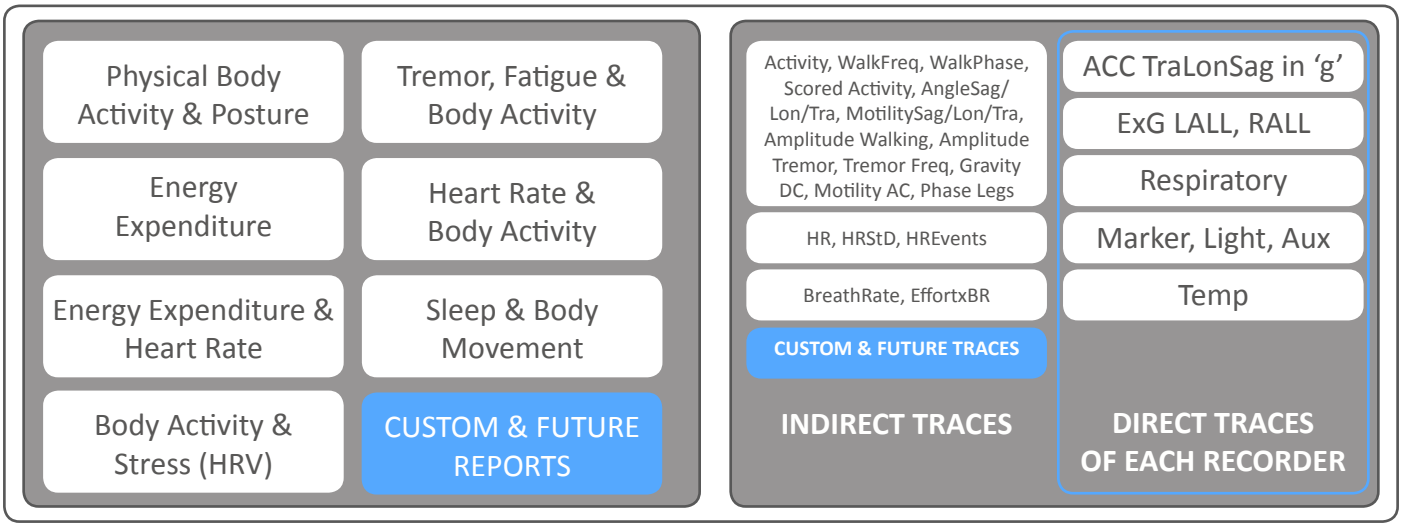
EXPAND TO RECORD ECG, EMG, EOG, EEG, BREATH & LIGHT

To each VitaMove recorder an extension module can be connected. This allows recording of a medical grade 3 lead ECG (2 traces) to simultaneously record the heart function, an EMG to record muscle activity, eye movements (EOG) or brain activity during sleep (EEG). The same extension module is also prepared to measure breathing rate or environmental light conditions (chronobiological studies). The exact configuration depends on your needs. Together we can define what is required for your study.

VITAMOVE SOFTWARE

The VitaMove software makes handling of large patient groups and the downloading of recordings easy and effortless. Furthermore, it can fully and automatically analyse recordings and generate reports in minutes. Raw data is stored on your computer locally and is fully accessible and exportable at all times using the European Data Format standard. Also, all other computed and extracted features like angles, body motilities, posture and motion classes, HR, detected events; duration and so on can be exported and used in third party software for further analysis.

REPORTS & SIGNAL TRACES



IMPORTANCE OF BEING ACTIVE IN DAILY LIFE

One of the major challenges in today's society is how to keep our health care system affordable. Key drivers are an aging population, large numbers of overweight people and an overall trend of decreased health and fitness. This results in an increase in people suffering from chronic diseases and a wide range of disorders with impairments on physical activity. Our ability to use our motor skills in daily life defines in a large part our quality of life. The effects of these societal changes are obviously, also clearly visible in medicine. Therefore there is a strong need for new tools that improve the quality of care and at the same time lead to shorter treatment time and/or less medical involvement. One of the ways to accomplish this goal is by introducing protocollized care and objective, measurable, decision criteria. VitaMove is such a tool helping to objectify posture, motion and activity both in a protocolled lab environment and also in daily life.

WHY MEASURE POSTURE, MOTION AND ACTIVITY?

It is important to record accurate and objective information about posture, motion and activity to gain clear insight into the working mechanisms of diseases and the effectiveness of intervention programmes. Furthermore it helps in the evaluation and optimization of therapy on an individual or group level guiding therapists and coaches in their interventions. Also, it can be an instrument for treatment and behavioural change programs, facilitating interpretations and understandings of both the care provider and the patient. Therefore, feedback can be given to the patient to improve their understanding of their posture and motion, to provide them with a warning or to signal a reward to the subject.

WHY TAKE MEASUREMENTS OUTSIDE A LAB ENVIRONMENT?

Not only can VitaMove provide detailed measuring of posture and motion in a lab environment, it also allows measuring to take place over a longer period of time. This is of vital importance as VitaMove provides measurement of a patient's normal daily physical activity. Research has shown that the posture and motion behaviour that people appear to have in a lab environment does not accurately represent their behaviour in their daily lifestyles. Furthermore it has been proven that what people believe they do does not equal what their normal patterns. For this reason questionnaires often do not provide a subjective or accurate portrayal of patients regular activities. Also what people do in a laboratory does not reflect the daily problems and difficulties they experience. Essentially monitoring a person's physical activity in a laboratory does not equate to the detail one can detract from monitoring a person's regular physical activity on a daily basis. VitaMove is a reliable indicator of person's true motions. VitaMove ambulatory monitoring can provide answers and measurements that would otherwise remain hidden.

HOW TO USE

Step 1: The patient wears the recorders for a predefined period
Step 2: The recorders are returned to the care giver
Step 3: The data is downloaded, on the spot analysed and reports are immediately available.
All information is stored locally on the computer and fully accessible and exportable to be used in third party analysis software
Step 4: Results are reviewed for evaluation and feed-back

APPLICATIONS - REHABILITATION AND OCCUPATIONAL MEDICINE

• Assess physical (in) activity in daily life situations, and time spent in positions as lying, sitting, ...walking, running, bicycling. The benefit over in-lab posture and gait studies is that it allows to observe people in their real life under normal conditions versus the artificial conditions of typically short duration in-lab tests.
• Quantify the characteristics of short-mid and longer lasting periods of walking and running in terms of walking speed and distance, stability of walking rate, and symmetry of walking (through extra sensor on 2nd leg)
• Discriminate between 'active' and relaxed sitting with possible incorrect posture, or frequent forwarded trunk position during construction work (f/I brick-laying) via the angle of the trunk. Quantify physical posture and motion characteristics in real day to day job-related conditions.

VALIDATION & CERTIFICATION

The posture and movement classifications have been validated in cooperation with the Erasmus Medical Centre's rehabilitation department in Rotterdam. VitaMove is medically certified in accordance with the TUV standards and has been approved by the CE Medical Device Directive (CE0197).

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