

clue medical.

Cardiac Monitoring in Motion.



DESCRIPTION

Cardiac dysrhythmia and psychosomatic disorders often require intense medical care by the doctor. clue medical is a light cardiovascular recorder with integrated fixed stainless steel electrodes (no need to use adhesive electrodes) that record a one-channel ECG over a period of 120 seconds. clue then calculates heart rate, heart rate variability (HRV) and a multitude of cardiac parameters to monitor the heart activity. These values are shown - together with the current stress level - in a detailed report for doctors or an easy-to-grasp graphic representation for patients - for an optimal diagnosis and therapy control.

TARGET GROUP

- Patients with heart problems (e.g. arrhythmia)
- Cardiologists
- Diabetologists
- Psychiatrists
- Hospitals/Clinics
- Professional athletes
- Patients who have already had a burnout
- Patients with an increased risk of burnout
- Patients with psychosomatic disorders such as depression or panic attacks
- Patients with kidney or thyroid disease
- Diabetics

FEATURES

- Manageable, compact, light weight (70 g incl. battery) - measurements can be made anytime and anywhere
- As easy as measuring body temperature - one button operated
- 2-minute recording period
- Stores 30 measurements
- Data transfer via infrared or Bluetooth
- Data transfer to local computer or highly secure clue data server (via internet/mobile network)
- For Windows (XP, Vista and 7), Mac OS X, BlackBerry (Android in preparation) and „Lead a Good Life-Connect“ which receives data by Bluetooth and transmits by mobile network
- Simplified graphics and reports for patients, detailed analyses for doctors on PC, iPad and mobile phone in standard PDF format
- Integration in hospital information system (HIS) and local hospital/clinic servers

clue medical enables the patients themselves to carry out measurements anytime and anywhere.

The report generated from each measurement can be uploaded to the server directly from a PC with an internet connection or via mobile phone (a mobile app is also available for BlackBerry, an Android-based app is in preparation). If desired, the physician (or other healthcare professional or relative) can receive the patient's newly measured values directly by SMS and/or get the full report by e-mail. clue medical has been granted all important medical certifications (FDA, CE, TÜV, ISO Norm-IEC 60601-247:2001).

Life is for sharing.



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USE CASES

The cardiologic section of the university hospital in Vienna, Austria, has documented the successful use of clue medical in a number of cases. Here are two of them:

Therapy control of atrial fibrillation: 63-year old patient G.S. was supplied with clue medical for monitoring a new drug therapy of the atrial fibrillation he suffered from. The patient was supposed to record an ECG several times a day in order to document effects of the altered drug treatment. The treatment change consisted in switching from a standard beta blocker to Solatol 3 times 80 mg. With clue medical, the patient was able to document that after only one day under the influence of Solatol, atrial fibrillation ceased nearly completely and merely short paroxysmal episodes occurred. Only 2-3 days after treatment change, the patient's heart ran in a regular sinus rhythm. Meanwhile, G.S. has been sending ECGs on a weekly basis and it shows that his heart, apart from few short episodes of atrial fibrillation, maintains a steady sinus rhythm most of the time.

Event recording of cardiac arrhythmia: 52-year old patient R.G. suffered from heart arrhythmia which, as it occurred irregularly, could neither be detected in a resting ECG nor in a long-term ECG (24h with holter). With clue medical, the patient was equipped to record the arrhythmia the moment it occurred and thus was able to document the symptom for the first time. The analysis calculated by clue medical revealed several short episodes of atrial runs. The physician assessed the arrhythmia harmless and prescribed a drug treatment with a beta blocker. R.G. has been symptom-free ever since.

REFERENCES

- Mercedes Benz
- Lufthansa
- Sanofi Aventis
- AKH Wien
- Deutsche Telekom AG - corporate health
- Apollo hospitals
- Cardio World Center
- Mars 500 project
- Professional soccer teams (e.g. Betis Sevilla)

CARDIAC PARAMETERS MEASURED

- A full single channel 2-minute ECG section
- A signal-averaged ECG with the characteristic time values
- Average cardiac cycle (average duration of the RR intervals during the measurement period)
- Cardiac frequency
- Standard deviation (difference between an RR interval and the average RR interval during the measurement period)
- Absolute (SDNN) HRV in milliseconds
- Relative (CV) HRV in percent
- A spectrum analysis (FFT) including area dimensions for sympathetic and parasympathetic activity and its balance
- A tachogram of the cardiac cycle including cardiovascular assessment



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