PARR

PULSE ARRHYTHMIA
TECHNOLOGY

early stage
STROKE RISK
SCREENING
with only **ONE** single
BLOOD PRESSURE
measurement

- **DETECTS AFib**

- **WORLD´S FIRST DETECTION OF PC**
  (Premature Contraction) / Tachycardia / Bradycardia

- **THE FASTEST TECHNOLOGY**
  42 seconds

- **MOST CONVENIENT**
  Single measurement

- **HIGH SENSITIVITY**
  74 - 100%

- **IMPECCABLE SPECIFICITY**
  > 95% for any find of patients

early stage
CORONARY
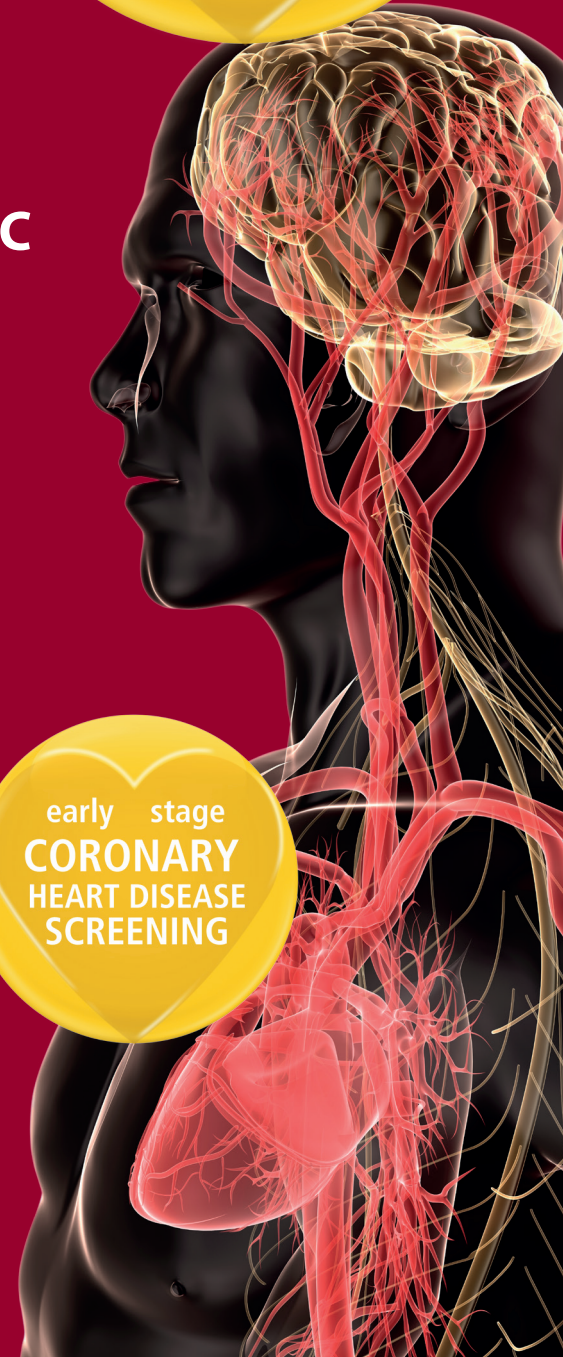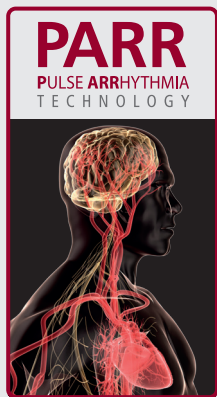HEART DISEASE
SCREENING

Detects

AFib | PC | TACH | BRAD | ARR

ADVANTAGES OF BLOOD PRESSURE MONITORING WITH
PARR TECHNOLOGY

PARR
PULSE ARRHYTHMIA
TECHNOLOGY

Detects

AFib	Atrial Fibrillation
PC	Premature Contraction
TACH	Tachycardia
BRAD	Bradycardia
ARR	Non type – specific arrhythmia

Rossmax Blood Pressure Monitors with **PARR Technology** enables early detection to **PREVENT STROKE AND OTHER CARDIAC DISEASES** with only one single measurement

PATENTED TECHNOLOGY DETECTS AFib, PC, TACH & BRAD
For the first time it is possible that routine oscillometric sphygmomanometer measurements lead to a proven distinction of clinically relevant types of pulse arrhythmia (not only AFib but also PC).

NO REPETITION MEASUREMENTS REQUIRED
The conduct of the measurement with the presented clinically meaningful accuracy does not require measurement repetitions.

NO ADDITIONAL SKILLS OR KNOWLEDGE REQUIRED
This is a proprietary Rossmax technology, which executes the detection of pulse arrhythmia automatically and simultaneously while performing blood pressure measurements.

HOME OR CLINICAL USE
Rossmax PARR is recommended for screening or follow-up at home for patients and / or for clinical use.

AFib Atrial Fibrillation Detection (AFib)
The upper chambers of the heart (the atria) beat irregular (quiver) and mostly fast instead of beating effectively to move blood into the ventricles. This condition is associated with a higher risk for cardiac blood clots, stroke, heart failure and other heart-related complications. About 10 % - 20 % of patients who suffer from an ischemic stroke also suffer from atrial fibrillation.

PC Premature Contraction Detection (PC)
Extra, abnormal heartbeats generated in abnormal locations of your heart, either in the atria (PAC) or in the ventricles (PVC) or the cardiac conduction nodes (PNC). These extra beats disrupt your regular heart rhythm, sometimes causing palpitations (e.g. skipped beats) in your chest. It may occur singularly or repetitively with various incidence. If not stress-related, they are a sensitive marker for a multitude of cardiac disorders, elevated ischemic stroke risk with PC.

TACH Tachycardia (TACH)
Fast heart rate of more than 100 beats per minute (BPM) in adults. Unless being caused by physical or mental stress, indicator for cardiac and extra-cardiac disorders (e.g. coronary heart disease, hyperthyroidism, fever).
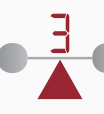
BRAD Bradycardia (BRAD)
Slow heart rate, heart rate of less than 55 beats per minute in adults. Unless caused by endurance training heart adaption, bradycardia may be related to a multitude of cardiac and extra cardiac disorders (e.g. electrolyte imbalance, medication, coronary and / or valvular heart disease).

ARR Non type – specific arrhythmia (ARR)

"PARR" AUTOMATIC BLOOD PRESSURE MONITOR
Model: X5

ARR ♥AFib
Atrial Fibrillation Detection

ARR ♥PC
Premature Contraction Detection

Bluetooth® *optional*
Bluetooth® low energy technology

OK
Cuff Detection

Movement Detection

Hypertension Risk Indication

3
Average of last 3 readings

7 Day AVG AVG
7 day AM/PM Averaging

120 memories for 2 users with date & time

24~40cm
Universal Cone Cuff

➕ **detects AFib / PC in early stage**

ESH *European Society of Hypertension protocol* BHS *British Hypertension Society Listed*

"PARR PRO" PROFESSIONAL BLOOD PRESSURE MONITOR
Model: X9

ARR ♥AFib
Atrial Fibrillation Detection

ARR ♥PC
Premature Contraction Detection

ARR ♥TACH
Tachycardia Detection

ARR ♥BRAD
Bradycardia Detection

Automatic Auscultatory
Automatic and Auscultatory mode

OK
Cuff Detection

Movement Detection

Hypertension Risk Indication

M 90
90 memories

Medical CUFF
Medical Cuff

➕ **prevents** the risk of **cardio disease** and **stroke** by early detection

DESIGN AWARD

ESH *European Society of Hypertension protocol* BHS *British Hypertension Society Listed*

"PARR PRO" PROFESSIONAL BLOOD PRESSURE MONITOR
Model: AC1000 ⓕ

ARR ♥AFib
Atrial Fibrillation Detection

ARR ♥PC
Premature Contraction Detection

ARR ♥TACH
Tachycardia Detection

ARR ♥BRAD
Bradycardia Detection

Automatic Auscultatory
Automatic and Auscultatory mode

OK
Cuff Detection

Movement Detection

120 SYS mmHg / 80 DIA mmHg
Marking for Systolic & Diastolic at auscultatory

6.5 2.5 4.5
Different deflation rate setting

Battery Charging for mobility

➕ **300,000 measurements guaranteed**

ESH *European Society of Hypertension protocol* BHS *British Hypertension Society Listed*

PARR
PULSE ARRHYTHMIA TECHNOLOGY

CLINICAL TEST

*The sensitivity and the specificity of **PARR technology** are concluded by comparing the detection results of **PARR algorithm** to the medical reference of the ECG.*

| Total 385 data entries	NORM	ARR	BRAD	TACH	PC	AFib
Number of cases	189	186	36	40	54	75
Sensitivity	99.47%	95.16%	100%	97.50%	74.07%	78.67%
Specificity	95.41%	96.98%	99.14%	99.13%	95.17%	98.39%

*Sensitivity: the proportion of positives that are correctly identified as such. **Specificity:** the proportion of negatives that are correctly identified as such.*

PARR Technology has a sensitivity of 74.07% regarding PC and 78.67% regarding AFib. This result is obtained from clinical patients and cardiologic patients **without** data selections. Considering the amount of waveforms with high complexity among the raw data entries, sensitivity over 70 % is considered extraordinary. Over 90 % or even 100 % sensitivity might be possible with pre-test patient selection.

STROKE

- There are 2 types of stroke, ischemic type and hemorrhagic type. Ischemic strokes represent about 85% while hemorrhagic types concern about 15% of all cases.

- Among ischemic type stroke, 70% is caused by embolization.

- About 10-20% of patients who suffer from an ischemic stroke have AFib.
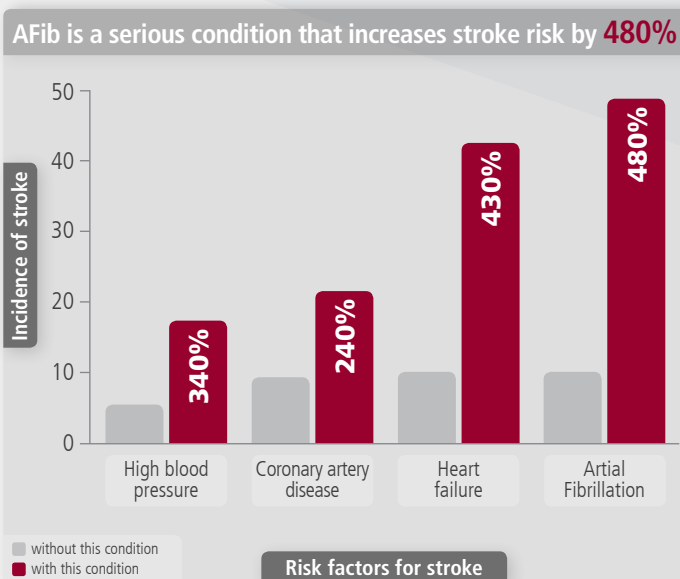
CORONARY HEART DISEASE

- On the surface of the heart, coronary arteries are present. The lack of coronary perfusion is a major cardiac disease for people over 40 years old. *(fig. A)*

- A clogged coronary artery leads to a lack of oxygen in the ventricle peripheral to the arterial supply area. This may establish a pathological pacemaker which irregularly triggers contractions. *(fig. B)*

- Premature ventricular contractions (PVCs) may indicate the presence of coronary heart disease. *(fig.C)*

AFib is a serious condition that increases stroke risk by 480%

Incidence of stroke

- 340% — High blood pressure
- 240% — Coronary artery disease
- 430% — Heart failure
- 480% — Artial Fibrillation

■ without this condition
■ with this condition

Risk factors for stroke

Figure A   *Figure B*   *Figure C*

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