AF Toolbox

Zoom function for the easy detection of atrial fibrillation

The new and revolutionary medical tool called AF Toolbox allows the early and fast detection of atrial fibrillation based on regular resting ECGs.

AF Toolbox in 3 steps:
Step 1  ECG recording
Step 2  Separation
Step 3  Zoom
AF Toolbox

... highly efficient and time-saving ...

Atrial fibrillation is the most common cardiac arrhythmia but in most patients difficult to detect. Thanks to the new, revolutionary AF Toolbox (Atrial Fibrillation Toolbox), atrial fibrillations - which are the most common cause of strokes or cerebral infarcts - can be detected reliably without complicated tools or invasive procedures.

The AF Toolbox view displays the waveforms of the atrial and ventricular activities separately. This detailed information on the atrial activity allows the detection of various types of atrial fibrillations that are otherwise easily missed, based on a regular ECG recording and within seconds. Thanks to this information, reliable decisions can be made on whether or not a subsequent, invasive, electrophysiological examination is necessary.

AF Toolbox in 3 steps

Step 1 Resting ECG recording
The data is obtained from a regular ECG recording (example: 12-lead resting ECG).

Step 2 Separation / QRST suppression
AF Toolbox separates the atrial activity from the ventricular activity by suppressing the ventricular activity in the ECG. The atrial activity can therefore be analysed isolated from the ventricular activity.

Step 3 Zoom, enlargement of the atrial activity
The enlarged presentation of the isolated atrial activity allows a reliable detection of atrial fibrillation (zoom view).
**Detection of atrial fibrillation**

**Patient A Normal sinus rhythm**

In the case of a normal sinus rhythm, a constant AV transition* can be observed (ratio 1:1). The morphology of the P wave gives indications on possible diseases.

- **Atrial Rate**: 78/min / 1.30 Hz
- **Ventricular Rate**: 78/min / 1.50 Hz
- **Ratio AR/VR**: 1.00 / 1:1

![Strongly enlarged isolated atrial ECG (P waves)](image)

* AV transition = atrioventricular transition

**Patient B Characteristic atrial fibrillation**

In the case of atrial fibrillation, the AV transition is irregular and the atrial rate higher than the ventricular rate.

- **Atrial Rate**: 330/min / 5.50 Hz
- **Ventricular Rate**: 61/min / 1.02 Hz
- **Ratio AR/VR**: 5.40

![Strongly enlarged isolated atrial ECG (atrial fibrillation)](image)

**Patient C Characteristic atrial flutter**

In this atrial ECG, a regular flutter (ratio 2:1 to 3:1) can be observed. The direction of rotation is indicated by CW (clockwise) and CCW (counterclockwise).

- **Atrial Rate**: 244/min / 4.07 Hz
- **Ventricular Rate**: 115/min / 1.92 Hz
- **Ratio AR/VR**: 2.12 / 2:1
- **Atrial Flutter**: 62 % / CW

![Strongly enlarged isolated atrial ECG (atrial flutter)](image)

**References**


