

## STROKE statistics

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No. 1 cause of invalidity

No. 2 cause of dementia

No. 3 cause of death

**Every 6 seconds a person in the world has a STROKE regardless of age and gender.**

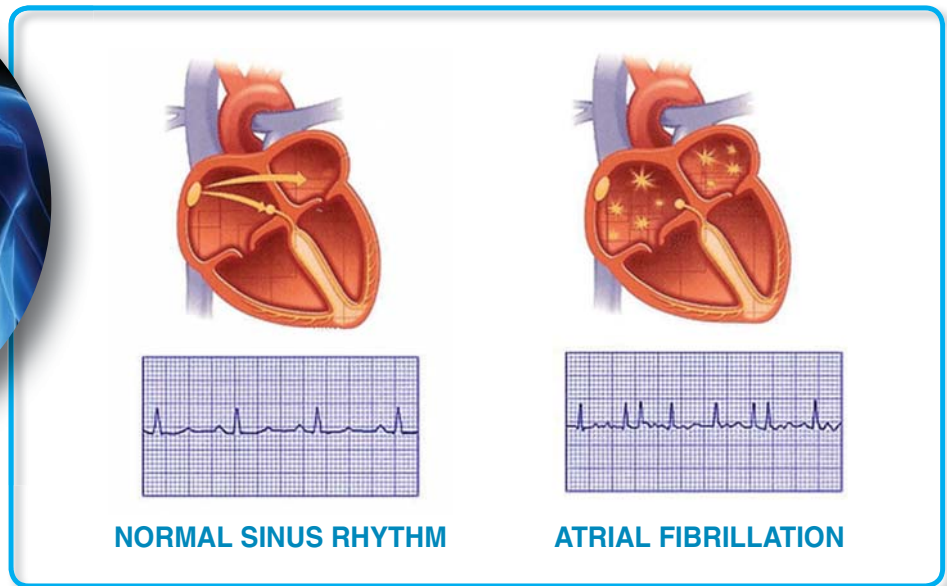
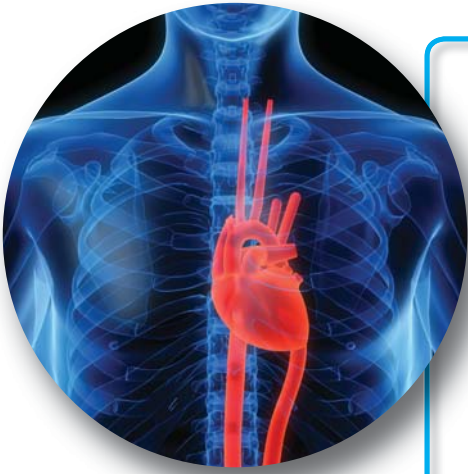
**Worldwide 15 million people suffer a STROKE annually.  
Europe averages 650'000 STROKE deaths each year.**

**2 OUT of 3 STROKES** can be avoided with a proper lifestyle and by identifying some important risk factors such as high blood pressure, atrial fibrillation, diabetes and hypercholesterolemia. People with a high risk profile can prevent a STROKE with targeted and personalized treatment.

People believe that STROKE hits only the elderly however also the younger population can be affected. Nearly one quarter of STROKES occur in people under the age of 65.

**The average total costs of care per patient for six months following a STROKE were estimated at 16'000 Euros.**

## ATRIAL FIBRILLATION statistics



ATRIAL FIBRILLATION is responsible for 20% of STROKES and is therefore the main cause of this heart disorder.

People with ATRIAL FIBRILLATION have a 3 to 5 times increased STROKE risk compared to patients without ATRIAL FIBRILLATION.

**Mortality and invalidity are higher** in STROKES associated with ATRIAL FIBRILLATION compared to those without it.

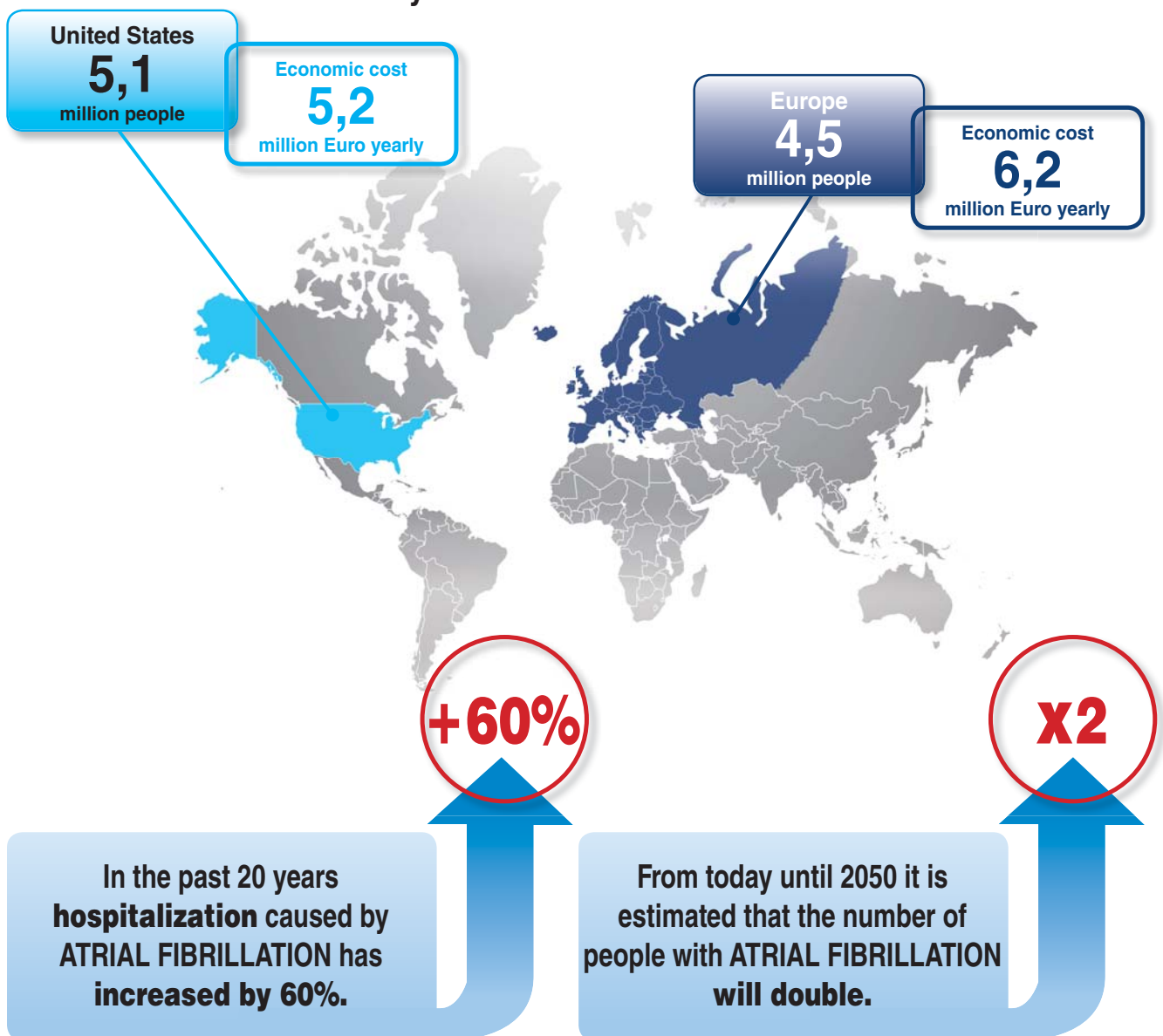
**ATRIAL FIBRILLATION is often asymptomatic and it is usually not diagnosed early.**

Recent studies have established that in over 10% of STROKES ATRIAL FIBRILLATION is asymptomatic. In these cases first diagnosis of ATRIAL FIBRILLATION is made only after a person has suffered a STROKE.

# ATRIAL FIBRILLATION statistics

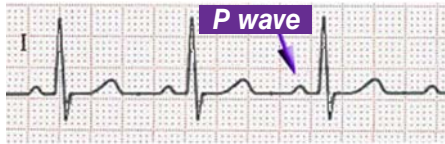
ATRIAL FIBRILLATION is an abnormal heart rhythm which **increases with increasing age**. Approximately 0.5% of the population around the age of 50 has ATRIAL FIBRILLATION, however it increases **up to 10% in people of more than 65 years of age**.

In Europe an estimated **4.5 million people** are affected by **ATRIAL FIBRILLATION** with about **300'000 new cases each year**.

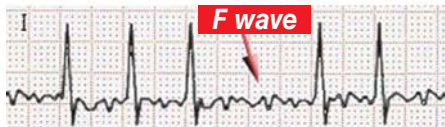


# Diagnosis of ATRIAL FIBRILLATION with ECG

NORMAL SINUS RHYTHM



ATRIAL FIBRILLATION



Diagnosis of ATRIAL FIBRILLATION is made mainly with an electrocardiogram which shows the absence of P waves which are replaced by F waves, small irregular undulations. These waves have a frequency of approximately 500 a minute and are continuous during the whole cardiac cycle.

**ELECTROCARDIOGRAM has a sensitivity of 91% and a specificity of 99%**

**Specificity** of a diagnostic test is defined as the capacity of healthy people who are correctly identified as not having the condition. If a test has an excellent specificity then the risk of having false positives is low. This means that there is a low risk of the exam falsely suggesting that a healthy patient is sick.

**HIGH SPECIFICITY = high probability that a healthy individual has a negative test result; = low probability that a healthy individual has a positive test result;**

**Sensitivity** of a diagnostic test is defined as the capacity of correctly identifying people affected by the condition. If a test has an excellent sensitivity then the risk of having false negatives is low. This means that there is a low risk of the exam falsely suggesting that a sick patient is healthy.

**HIGH SENSITIVITY = high probability that a sick individual has a positive test result; = low probability that a sick individual has a negative test result.**



# Screening of ATRIAL FIBRILLATION by taking a pulse

Until today the method commonly utilized by a doctor to perform a first screening of ATRIAL FIBRILLATION is by taking a pulse at the radial artery at the wrist. Major world associations have until now supported this method for the early screening of ATRIAL FIBRILLATION and prevention of STROKE.

***“The innovation is to leave the task of interpreting pulse irregularities to each one of us individually and not only to the doctor. Measuring one’s own heart rate is actually a simple and fast way to identify a heart problem that, if ignored, may be fatal”.***

Prof. Riccardo Cappato, President of the European Cardiac Arrhythmia Society.



A 60 second arterial palpation at the wrist to look for irregular beats represents a simple procedure for the doctor but difficult as a means of mass population screening.

Unfortunately arterial palpation at the wrist is not performed regularly especially in the absence of symptoms.

**The diagnosis of a cardiac arrhythmia made through arterial palpation at the wrist has a probability of errors of 30%.**

# Screening of ATRIAL FIBRILLATION with MICROLIFE AFIB



Two studies conducted on a total of approximately 500 subjects have demonstrated that AFIB technology for the detection of ATRIAL FIBRILLATION based on automated blood pressure measurement by an oscillometric method has a high sensitivity (low false negatives) and specificity (low false positives) when compared to the electrocardiogram.

**AFIB has a sensitivity of 97-100% and a specificity of 89%.**

	Number of subjects	Age (years)	Hypertensive	Diabetics	Cardiopatic	Sensitivity (%)	Specificity (%)
Stergiou	72	49-92	63%	15%	40%	100	89
Wiesel	405	34-98	52%	15%	44%	97	89

**Stergiou GS, Karpettas N, Protogerou A, Nasothimiou EG, Kyriakidis M.** - Diagnostic accuracy of a home blood pressure monitor to detect atrial fibrillation. *J Hum Hyperten* 2009;23:654-658.

**Wiesel J, Fitzig L, Herschman Y, Messineo FC.** - Detection of atrial fibrillation using a modified Microlife blood pressure monitor. *Am J Hypertens* 2009;22:848- 852.

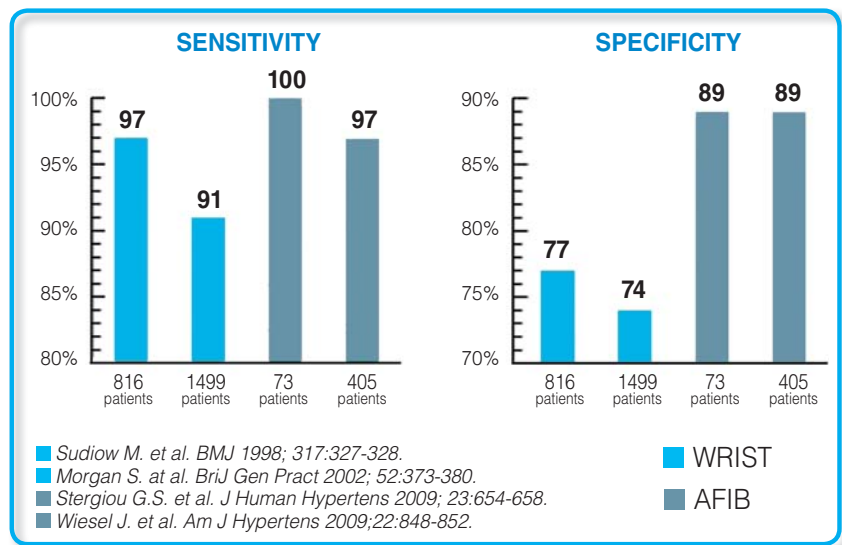
Dr Stergiou, who is among the most important researchers in Europe, has stated in the conclusion of the clinical study on MICROLIFE AFIB technology that:

*“These data suggest that an electronic device for self-home BP monitoring, which implements an algorithm for AF diagnosis, has an excellent diagnostic accuracy and might, therefore, be used as a reliable screening test for the early diagnosis”.*

Dr. G.S. Stergiou, Hypertension Center, Sotiria Hospital, Athens Greece.

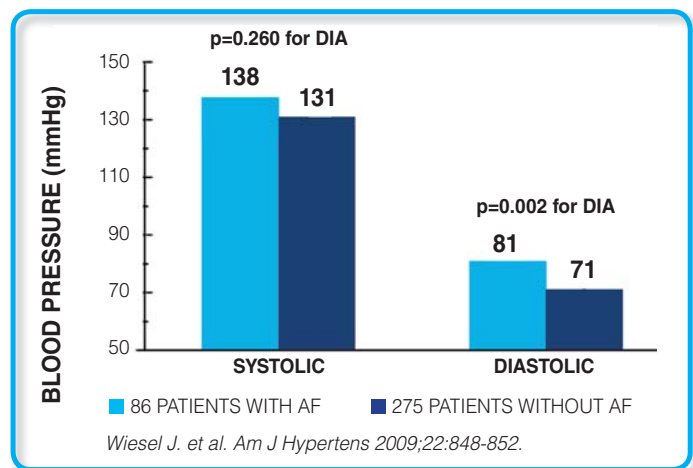
## Arterial palpation at the wrist versus MICROLIFE AFIB

The efficacy of MICROLIFE AFIB technology in detecting ATRIAL FIBRILLATION compared to arterial palpation at the wrist is better as demonstrated by its higher sensitivity, but above all by its **superior specificity**.



## Reliability of BLOOD PRESSURE measurement in patients with ATRIAL FIBRILLATION

The guidelines **do not recommend self BLOOD PRESSURE measurement** with oscillometric monitors **in the presence of ATRIAL FIBRILLATION** or arrhythmias (inaccurate measurements or frequent error messages). MICROLIFE AFIB technology allows for the measurement of BLOOD PRESSURE (if the rhythm is not excessively abnormal) **with acceptable reproducibility even in patients with ATRIAL FIBRILLATION**.



A study conducted on 361 subjects, of which 86 had ATRIAL FIBRILLATION, shows that AFIB technology allows for reproducibility of the systolic blood pressure while diastolic blood pressure is slightly overestimated.

**microlife®**

## To whom do you recommend AFIB technology?

- **TO ALL PATIENTS** for BLOOD PRESSURE measurement and for screening of ATRIAL FIBRILLATION
- **TO PATIENTS WITH PAROXYSMAL ATRIAL FIBRILLATION** for control of both asymptomatic and symptomatic ATRIAL FIBRILLATION
- **TO PATIENTS TO WHOM THE RHYTHM HAS BEEN REGULARIZED** with antiarrhythmic agents, electrical cardioversion or surgical ablation for the control of the return of ATRIAL FIBRILLATION
- **TO PATIENTS WITH ARRHYTHMIAS, CHRONIC OR PERSISTENT ATRIAL FIBRILLATION** only if the rhythm is not significantly abnormal. MICROLIFE MAM, a technology with repeated automated measurements, has demonstrated to be particularly effective with such patients making reliable BLOOD PRESSURE measurements.

**MICROLIFE AFIB technology does not perform a diagnosis. It represents a suitable and reliable support for screening ATRIAL FIBRILLATION among the population for STROKE prevention.**

**It is particularly suitable to identify ATRIAL FIBRILLATION in asymptomatic patients.**

**It is further suitable for follow-up at home of HYPERTENSIVE PATIENTS with ATRIAL FIBRILLATION.**

