



**STROKE
Prevention**

Microlife Afib technology

An innovative technology for the early detection of Atrial Fibrillation

More than **30,000 strokes** can be prevented and over € 500 million in healthcare costs can be saved within the **European Union**.



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What is Atrial Fibrillation (Afib)?

Atrial fibrillation (Afib) is the most common cardiac arrhythmia. It affects over one percent of the general population and is related to 20 % of all strokes. Afib-related strokes are more severe than those not related to Afib; associated with an increased likelihood of permanent disability and greater short-and long-term mortality. Costs of Afib-related strokes could be at least € 10 billion in Europe and \$ 5 billion in the US each year causing a major burden to healthcare.

The importance of Afib screening for STROKE prevention

Afib is the number one cause of stroke¹, it is often asymptomatic, and around 30 % of Afib patients are diagnosed incidentally when hospitalized for other reasons², including stroke³.

Screening and early detection of Afib followed by appropriate treatment can reduce the chance of stroke by 68 %.

Afib Patented Technology for the early detection of Atrial Fibrillation

New technology patented by Microlife allows simultaneous blood pressure measurement and Afib screening. The Afib technology is very accurate as is demonstrated in several clinical studies (see table below). Microlife Afib technology detects Afib with a high sensitivity (97 - 100 %) and specificity (89 %), as compared with ECG, and therefore can be used as a reliable screening test for early diagnosis.



	Patients (n)	Setting	Age (y)	Afib n (%)	Non-Afib arrhythmia n (%)	Sensitivity (%)	Specificity (%)
Wiesel 2004 ²	450	Hospital	69	53 (12)	(±25)	100	92
Stergiou 2009 ³	72	Hospital	71	27 (37)	23 (31)	100	89
Wiesel 2009 ⁴	405	Hospital	73	93 (23)	64 (14)	97	89
Oxford trial 2013 ⁵	893	Primary care practice	80	100 (11)	n.s.	94	90
Tripps study 2013 ⁶	139	Home	67	14 (10)	n.s.	99*	93*

All studies were compared against 12-lead ECG unless otherwise indicated; Afib indicates atrial fibrillation; n.s., not specified; *, compared against electrocardiographic event monitor

Guidelines recommended

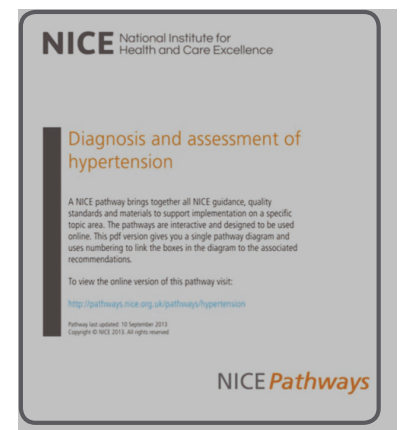
United Kingdom:

Microlife Afib technology received NICE guidance^{7,8}

Nice guidelines for "Diagnosis and assessment of hypertension" recommend using Microlife Home Afib technology for routine blood pressure measurement in primary care!

Based on clinical evidence and economic analysis the NICE committee concluded that using the Microlife Afib technology in general primary care may lead to an estimated:

- Prevention of 2,000 strokes per year (81 per 100,000 patients screened aged 65 - 75 years and 182 per 100,000 patients aged 75 years and older).
- Healthcare cost savings of € 31 million a year.



Publicity



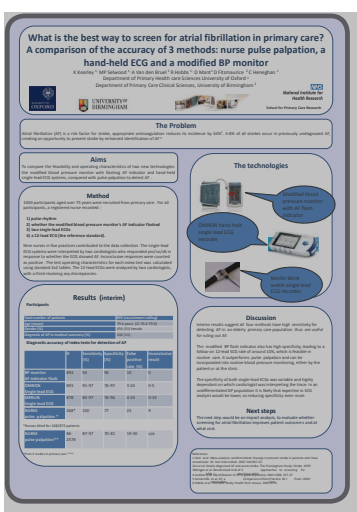
Italy: Guidelines of the Società Italiana di Medicina Generale (SIMG) recommend using Afib for both clinical and home blood pressure measurement⁹

Due to the increased use of automated blood pressure monitors in clinical practice doctors rarely verify the presence of cardiac arrhythmias by mean of pulse palpation or auscultation. For this reason the Italian primary care guidelines recommend using an automated blood pressure monitor with a validated algorithm that can detect the presence of atrial fibrillation. Thus far the Afib detector of Microlife blood pressure monitors is the only arrhythmia detector that demonstrated its accuracy in multiple clinical studies.

Evidence based and clinically validated Afib detection technology

What is the best way to screen for atrial fibrillation in primary care?

A comparison of the accuracy of 3 methods: nurse pulse palpation, a hand-held ECG, and a Microlife BP monitor⁵



A randomized clinical trial

The university of Oxford in the UK, known as one of the best medical universities in the world, has performed a randomized clinical trial among 1,000 GP patients to reveal the best method for Afib screening in primary care. This study showed that using the Microlife WatchBP Home A is the best method and is recommended for Afib screening in primary care practice and for patients at home. Microlife now offer the same level of technology in the A6PC home product.



Screening for Asymptomatic Atrial Fibrillation While Monitoring the Blood Pressure at Home: Trial of Regular versus Irregular Pulse for Prevention of Stroke⁶

A study performed among 139 patients suspected of having paroxysmal (intermittent) Afib. The patients were using the Microlife blood pressure monitor with Afib detector A6PC on a daily basis for a period of 30 days. The device demonstrated a sensitivity of 99 % and a specificity of 93 % as compared to the event loop recorder and thus is a useful tool for detecting new Afib.

Three automated sequential measurements (MAM) for the best results¹⁰

A systematic review of all clinical evidence to the Microlife Afib detector showed that the highest sensitivity value (97 %) is obtained when three sequential blood pressure measurements were performed with two or three Afib positive readings. The highest specificity value (97 %) is obtained when with three sequential measurements, of which all three must be Afib positive. For this reason the Microlife blood pressure monitors with Afib detector automatically measure three times.

Experience from Practice

Results from clinical practice				
Area	Patients (n)	Setting	Duration	Outcome
Hull, UK ¹¹	n.s.	Primary care practice	6 months	<ul style="list-style-type: none"> Afib prevalence increased by 0.8 % in Microlife practices and 0.4 % in non-Microlife practices. Microlife practices covered 19 % of the screened population but generated 44 % (n=71) of new Afib cases.
Erewash, UK ¹²	6,556	Flu clinics Primary care practices	7 months	<ul style="list-style-type: none"> 116 patients Afib patients identified Afib patients diagnosed increased by 7.7 % across GP practices 8 strokes prevented (2 or 3 fatal) Estimated cost savings € 172,000
Bologna, Italy ¹³	12,294	Primary care practices	4 months	<ul style="list-style-type: none"> Afib prevalence within practices increased from 0.37 % to 0.63 % as compared to previous 4 months

References

- Nichols M, T.N., et al., *European Cardiovascular Disease Statistics 2012*. European Heart Network, Brussels, European Society of Cardiology, Sophia Antipolis, 2012.
- Wiesel, J., et al., *The use of a modified sphygmomanometer to detect atrial fibrillation in outpatients*. Pacing Clin Electrophysiol, 2004. 27: p. 639-43.
- Stergiou, G.S., et al., *Diagnostic accuracy of a home blood pressure monitor to detect atrial fibrillation*. J Hum Hypertens, 2009. 23: p. 654-8.
- Wiesel, J., et al., *Detection of atrial fibrillation using a modified microlife blood pressure monitor*. Am J Hypertens, 2009. 22: p. 848-52.
- Kearley, K., et al., *What is the best way to screen for atrial fibrillation in primary care? A comparison of the accuracy of 3 methods: nurse pulse palpation, a hand-held ECG and a modified BP monitor* Submitted, 2013.
- Wiesel, J., et al., *Screening for Asymptomatic Atrial Fibrillation While Monitoring the Blood Pressure at Home: Trial of Regular Versus Irregular Pulse for Prevention of Stroke (TRIPPS 2.0)*. Am J Cardiol, 2013.
- NICE, *WatchBP Home A for opportunistic detection atrial fibrillation during diagnosis and monitoring of hypertension*. <http://guidance.nice.org.uk/MTG13>, 2013
- NICE, *Diagnosis and assessment of hypertension*. <http://pathways.nice.org.uk/pathways/hypertension>, 2013
- Fibrillazione Atriale in Medicina Generale, Guidelines of the Società Italiana di Medicina Generale (SIMG), 2013.
- Verberk, W.J., et al., *Accuracy of oscillometric blood pressure monitors for the detection of atrial fibrillation: a systematic review*. Expert Rev Med Devices, 2012. 9: p. 635-40.
- Hull PCT. <http://www.nice.org.uk/usingguidance/sharedlearningimplementingniceguidance/examplesofimplementation/eximpresults.jsp?o=620>, 2012
- EREWASH case study: *an example from primary care practice*. <http://www.atrialfibrillation.org.uk/files/file/Clinicians%20Area/130408-sh-2-Erewash%20case%20study.pdf>, 2013
- Ermini, G., et al., *Switching from traditional to automatic sphygmomanometer increase opportunistic detection of atrial fibrillation in hypertensive patients*. BJMP, 2013. 6: p. a6161.

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