

Atrial Fibrillation and You

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AF & U

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Conflict of interest

Advisory board, grants and speaker fees

- Boehringer Ingelheim
- Pfizer
- Sanofi
- Servier
- Medtronic
- Spacelabs

Coming Up

- Can I exercise? Particular aspects that can be of benefit
- Can you work through an AF event during exercise?
- When to be careful? What happens if it seems to trigger an AF event?
- Is there anywhere my GP can send me, to help me build up my confidence?
- Can I travel and am I able to self test for INR monitoring if my lifestyle means I need to travel or work

Common questions:

- I am really fit but now I have developed AF. Have I done myself damage by exercising?
- How much exercise is damaging?
- Is the treatment of AF any different for athletes?
- Do I have to stop exercising?
- What's my outlook?



“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”

Exercise Management

- Complications of Atrial Fibrillation include:
 - increased risk of thromboembolic events
 - rapid ventricular rates
 - incomplete ventricular filling, causing reduced cardiac output
 - decreased exercise capacity and fatigue.

Exercise Management

Effects on the Exercise Response

- Rapid, irregular ventricular response
- Heart rate is higher (including maximal heart rate) at any level of exercise to compensate for the diminished stroke volume and cardiac output in Atrial Fibrillation (AF).
- Exercise tolerance is reduced (20%) in AF relative to normal sinus patients.
- Because of the variability in the diastolic filling period, the determination of systolic blood pressure can be difficult to assess and is poorly reproducible.

Effects of Exercise Training

- Patients with AF would not be expected to have a training response particularly different from individuals in normal sinus rhythm.
- The major concern in terms of exercise training is the underlying heart disease, particularly valvular disease, chronic heart failure, and coronary artery disease.

Management and Medications

- 24hr ambulatory monitoring / [INR monitoring](#) if on anticoagulant
- pharmacologic intervention to maintain sinus rhythm
- involves converting the individual to normal sinus rhythm, or undergoing [radiofrequency ablation](#)
- when AF is chronic, strategies to control the ventricular rate response and reduce the incidence of stroke. There is always the risk of thrombus /embolus formation.

Recommendations for Exercise Testing

- Maximal exercise testing can be safely used to determine functional capabilities of the patient
- The reduction in exercise capacity associated with AF is a direct function of the underlying heart disease.
- Because underlying heart disease is common, small incremental exercise test protocols should be used.

- Contraindications to exercise testing related to underlying conditions such as stability of chronic heart failure, valvular disease, or complex ventricular arrhythmias should take precedence over AF itself.
- Otherwise AF patients may be safely taken to fatigue or shortness of breath endpoints
- Age predicted maximal heart rate targets are particularly useless in AF because of the rapid and highly variable ventricular response.

Recommendations for Exercise Programming

There are two major factors to consider in exercise programming:

- 1) concomitant or underlying heart disease
- 2) inherent unreliability of the pulse rate in prescribing exercise intensity.

Recommendations for Exercise Programming

- Because AF is frequently accompanied by ischemic heart disease, chronic heart failure, or valvular heart disease, exercise programming considerations for these conditions should take precedence over AF.
- Because of the chronically irregular ventricular rate, exercise intensity should be prescribed based on perceived exertion levels.
- Because AF can be intermittent (i.e. may be in AF one day and in normal sinus rhythm the next); this will effect heart rate response to exercise, and exercise tolerance.
- Ascertain rhythm on a daily basis

How much is too much?



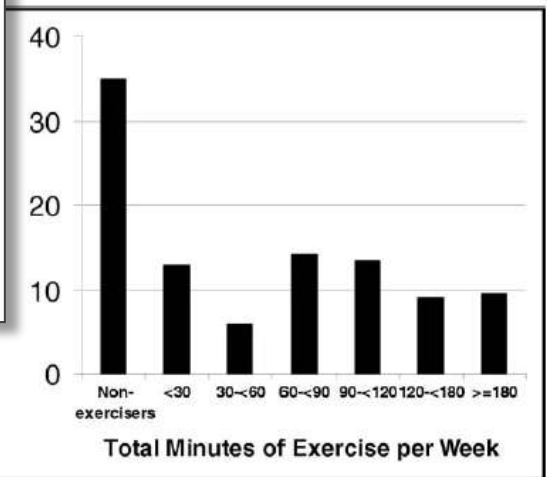
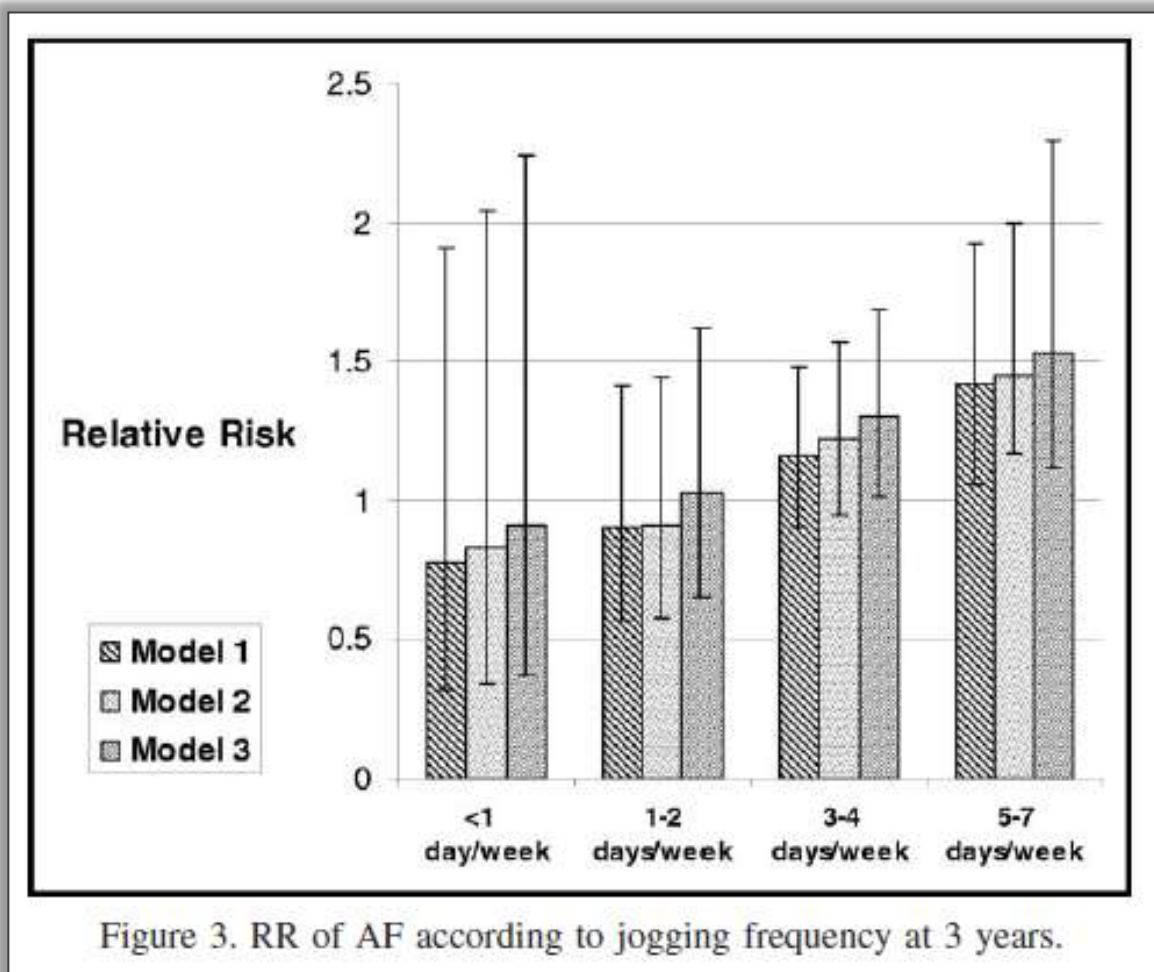


Figure 1. Distribution of total exercise time per week (minutes).

Association of cumulative lifetime physical activity and development of lone atrial fibrillation

Table 5 Adjusted odds ratios and 95% confidence intervals of lone atrial fibrillation for cumulated moderate and heavy physical activity, height, and left atrial anteroposterior diameter

	Odds ratio (95% confidence interval)	P-value
Cumulated moderate and heavy physical activity		
0-2077 h	1	
2078-9318 h	5.60 (1.59-19.75)	0.0075
≥9319 h	15.11 (3.75-60.83)	0.0001

Can I exercise through an AF event?

Yes

Do you have to stop exercising?

No

**Is there anywhere the GP could
send me to help build up my
confidence?**

Yes

No

Maybe

See next session on commissioning



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Independent high-quality evidence for health care decision making



Self-monitoring and self-management of oral anticoagulation: a Cochrane review

Clinical



Clinical question

Does self-monitoring or self-management compared to standard monitoring reduce thrombotic events, major bleeds, and all-cause mortality in patients on long term oral anticoagulation?



Source: Garcia-Alamino JM, Ward AM, Alonso-Coello P, Perera R, Bankhead C, Fitzmaurice D, Heneghan CJ. [Self-monitoring and self-management of oral anticoagulation](#). *Cochrane Database of Systematic Reviews* 2010, Issue 4. Art. No.: CD003839. DOI: 10.1002/14651858.CD003839.pub2.



Context

- Near patient or point-of-care testing devices have made it possible for people on oral anticoagulation to monitor their blood clotting time in the home setting, measuring this as the international normalized ration (INR).
- Patients who self-test can either adjust their medication dose according to a pre-determined dose-INR schedule (self-management) or they can contact a clinic to be told the appropriate dose adjustment (self-monitoring).
- Several previously published studies suggest these methods of monitoring anticoagulation therapy may be equal to, or better than, standard monitoring by a physician.

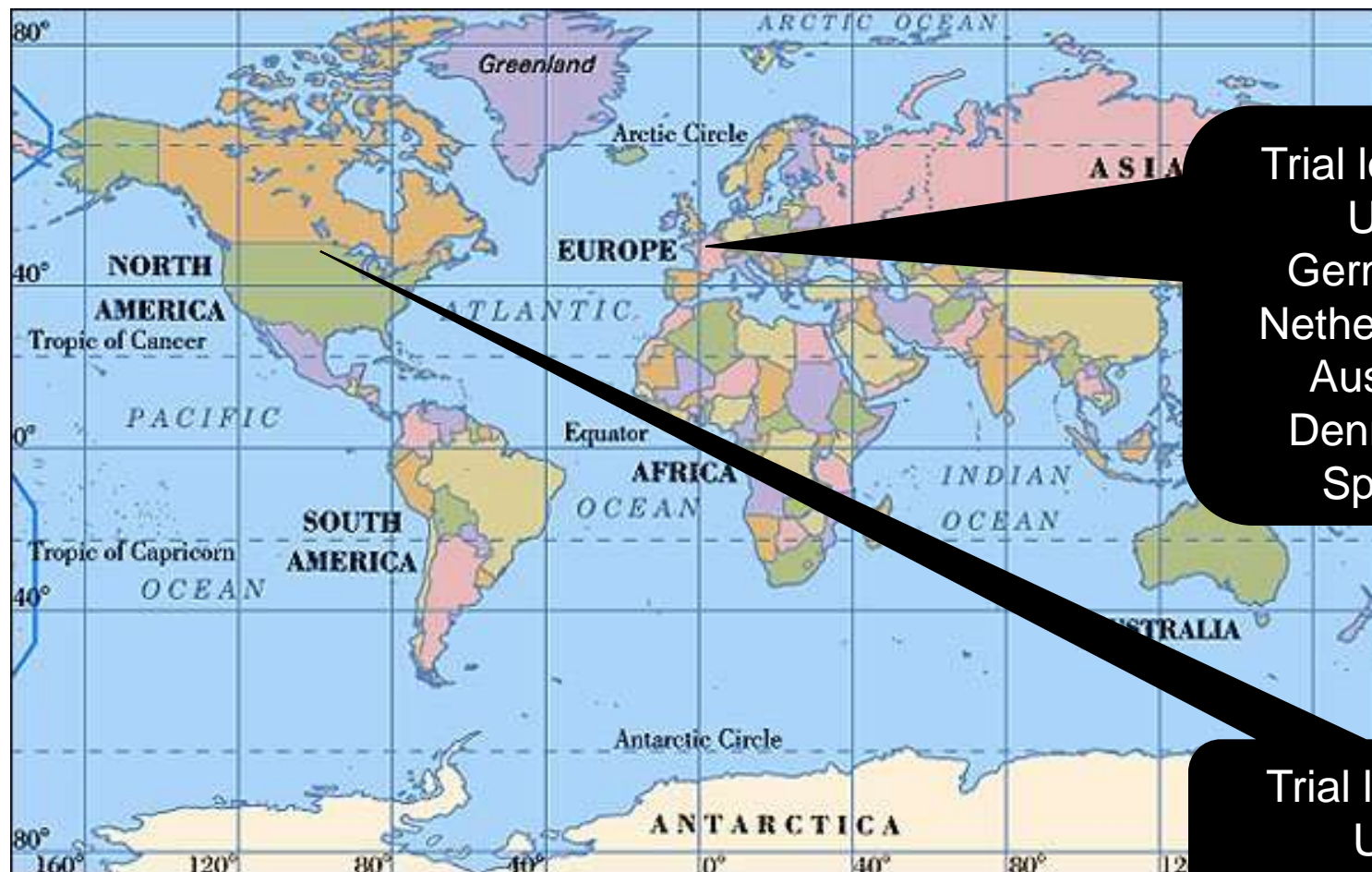


Description of eligible studies

- 18 randomised trials were included, all but one of which had used a cross-over design.
- One unpublished study was located and access to the complete data was obtained.
- The analyses include 4723 participants on long-term anticoagulation.
- The trials had been published between 1989 and 2007; with most from Europe: five in UK; four in Germany; two in Netherlands; and one in each of Spain, Denmark, and Austria. Five were from the United States and Canada.



18 trials, published or unpublished, world-wide



Trial locations
 UK 5
 Germany 4
 Netherlands 2
 Austria 1
 Denmark 1
 Spain 1

Trial locations
 US 3
 Canada 1



Results: Thromboembolic events

- 18 trials reported thromboembolic outcomes (4723 participants, 146 events).
- Compared to standard therapy, self-monitoring and self-management halved thromboembolic events (Relative risk [RR] 0.50, 95% CI 0.36 to 0.69, $P < 0.0001$). This was not affected by removing the 4 studies deemed to be of low quality (RR 0.49, 95% CI 0.35 to 0.68, $P < 0.0001$; based on 14 trials).
- In subgroup analyses, self-monitoring and self-management in patients with mechanical valves significantly reduced thromboembolic events, compared to standard therapy (RR 0.53, 95% CI 0.30 to 0.91; $P = 0.02$).



Results: Mortality

- 16 trials reported on mortality (4305 participants, 137 deaths), with 9 providing data to calculate an overall effect size. No deaths were reported in 2 trials of patients with atrial fibrillation alone.
- Self-monitoring and self-management were associated with a reduction in mortality from all causes (RR 0.64, 95% CI 0.46 to 0.89, $P = 0.007$). This was not affected by removing the 4 low-quality studies (RR 0.65, 95% CI 0.46 to 0.90; $P = 0.01$).
- In 3 trials of patients with mechanical valves, self-monitoring and self-management significantly reduced mortality (RR 0.49, 95% CI 0.28 to 0.85, $P = 0.01$).



Results: Major haemorrhage

- 18 trials reported major haemorrhage outcomes (4723 participants, 172 events); with 14 trials (15 groups) providing data to calculate the overall effect size.
- Compared to standard therapy, self-monitoring and self-management were associated with a non-significant reduction in major haemorrhage (RR 0.87, 95% CI 0.66 to 1.16, P = 0.34). This was stable to the removal of the 4 low-quality trials (RR 0.88, 95% CI 0.65 to 1.18, P = 0.39).
- It was not possible to distinguish the effects by clinical condition.



Conclusions

- The evidence-base for self monitoring continues to grow.
- Compared to standard monitoring, patients who self-monitor or self-manage can improve the quality of their oral anticoagulation therapy.
- The number of thromboembolic events and deaths were decreased without increases in harms. However, self-monitoring or self-management were not feasible for up to half of the patients requiring anticoagulant therapy because of, for example, patient refusal, exclusion by their general practitioner, and inability to complete training.

**Can I travel and am I able to self test
for INR monitoring if my lifestyle
means I need to travel or work ?**

Yes

Stroke prevention and sports

- **Stroke risk assessment**
- Many will be at low risk of stroke
- True low risk = no stroke prevention required
- Anticoagulation and sports:
 - Many sports can be pursued on anticoagulants
 - Use common sense

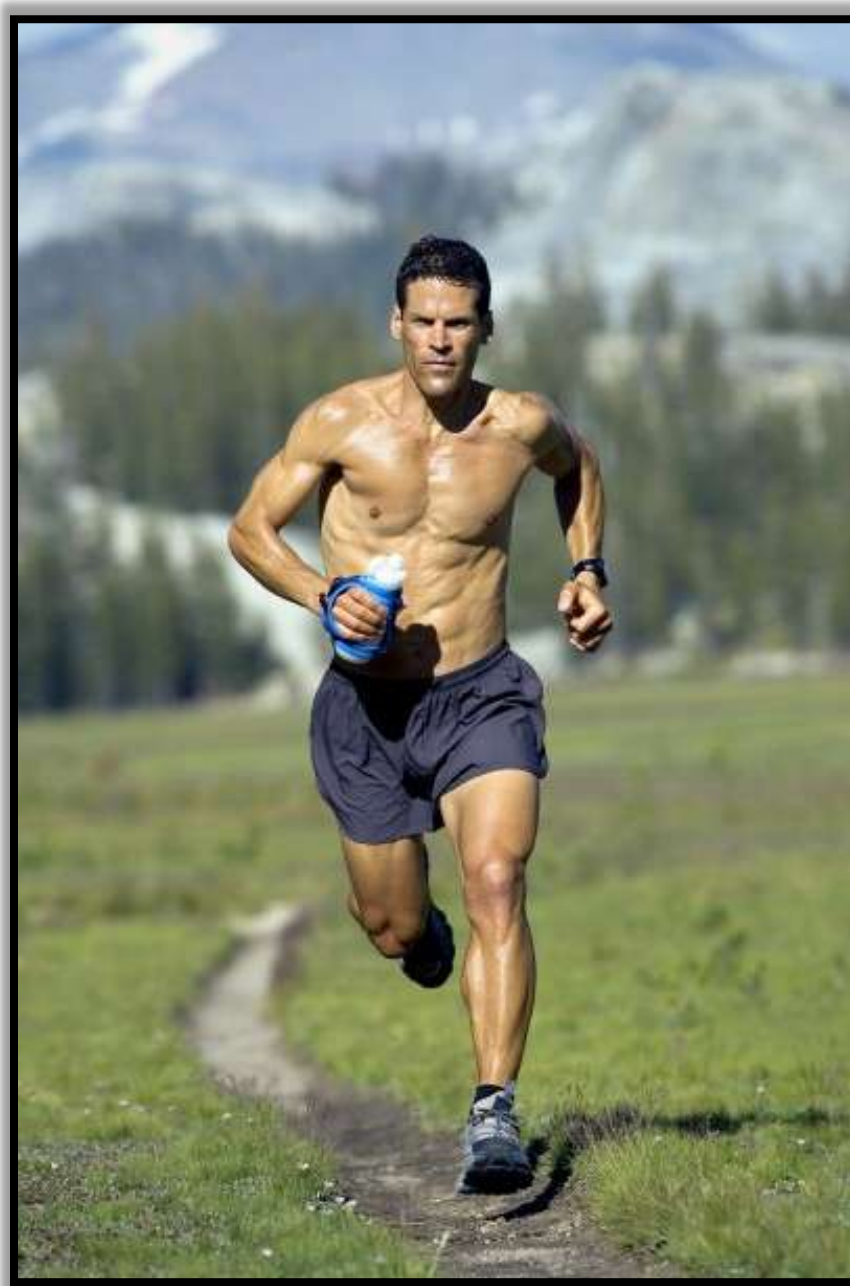
Anticoagulation and sports

- No contact sports!
- Vast majority of master athletes will be endurance athletes
- Endurance sports = safe in terms of OAC use
- Pitfalls: travelling, supplements, seasonal variation
- Special consideration:
 - Mountaineering
 - (Cycle-)Road racing

Westcliffe Medical Practice

Shipley

Life Cardiology Service







Thank you.

Questions

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