

# Gender Matters: Why Afib is More Fatal for Women



**Figure 1:** StopAfib.org founder Mellanie True Hills is an afib survivor who believes that better communication between afib patients and healthcare providers leads to better care.

## CHADS<sub>2</sub> Score

Letter	Clinical Characteristic	Points Awarded
C	Congestive heart failure	1
H	Hypertension	1
A	Age ≥75	1
D	Diabetes mellitus	1
S <sub>2</sub>	Stroke/TIA/TE	2
Maximum score		6
TIA = transient ischemic attack; TE = thromboembolism 0 points = low risk 1 point = intermediate risk 2 or more points = high risk <b>Annual Adjusted Stroke Rate</b> 0 points = 1.9% 1 point = 2.8% 2 points = 4% 3 points = 5.9% 4 points = 8.5% 5 points = 12.5% 6 points = 18.2%		

## CHA<sub>2</sub>DS<sub>2</sub>-VaSc Score

Letter	Clinical Characteristic	Points Awarded
C	Congestive heart failure/LV dysfunction	1
H	Hypertension	1
A <sub>2</sub>	Age ≥75	2
D	Diabetes mellitus	1
S <sub>2</sub>	Stroke/TIA/TE	2
V	Vascular disease	1
A	Age 65 – 74	1
Sc	Sex category (i.e. female sex)	1
Maximum score		9
LV = left ventricular; TIA = transient ischemic attack; TE = thromboembolism; vascular disease = prior myocardial infarction, peripheral artery disease, or aortic plaque 0 points = low risk 1 point = intermediate risk 2 or more points = high risk <b>Annual Adjusted Stroke Rate</b> 0 points = 0% 1 point = 1.3% 2 points = 2.2% 3 points = 3.2% 4 points = 4.0% 5 points = 6.7% 6 points = 9.8% 7 points = 9.6% 8 points = 6.7% 9 points = 15.2%		

**Figure 2:** The two main stroke risk assessment tools are CHADS<sub>2</sub> and CHA<sub>2</sub>DS<sub>2</sub>-VaSc. As part of the CHA<sub>2</sub>DS<sub>2</sub>-VaSc score, the female gender is included as a risk factor. Source: Assessing Stroke and Bleeding Risk in Atrial Fibrillation: Consensus Statement on Appropriate Anticoagulant Use.<sup>26</sup> <http://bit.ly/afib-consensus>

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In recent years, there have been many revelations about heart disease and how it specifically affects women. Research has shown that women frequently have different symptoms of a heart attack than men, and women are often worse off after a heart attack.<sup>1</sup>

Not surprisingly, the diagnosis, symptoms, and treatments of atrial fibrillation (afib) can differ for women, too. One stark, potentially deadly difference: in women 20 to 79 years old, the risk of stroke is 4.6-fold greater in women than men.<sup>2</sup> In addition, mortality for women with afib is up to 2.5 times greater than that for men.<sup>3</sup>

Afib affected approximately 2.66 million people in the United States in

2010, according to the U.S. Centers for Disease Control. And the numbers will only climb. With the aging Baby Boomer population, estimates from the Centers for Disease Control indicate that afib will affect 12 million people by 2050.<sup>4</sup> Afib sufferers have a five-fold increase in stroke risk compared to the general population. The numbers for women tell a dire story:

- Each year, in the United States, about 55,000 more women than men have strokes.<sup>5</sup>
- Stroke is the fourth leading cause of death for women.<sup>5</sup>
- Women account for more than 60 percent of stroke-related deaths.<sup>5</sup>
- After age 75, which is the median age for afib onset, 60 percent of those with afib are women.<sup>5</sup>
- Afib risk in women increases over men when patients have other conditions, such as diabetes mellitus, congestive heart failure, hypertension,

## HAS-BLED Score

Letter	Clinical Characteristic	Points Awarded
H	Hypertension	1
A	Abnormal renal &/or liver function (1 point each)	1 or 2
S	Stroke history	1
B	Bleeding	1
L	Labile INRs	1
E	Elderly (age ≥ 65)	1
D	Drugs or alcohol (1 point each)	1 or 2
Maximum score		9
Hypertension = systolic BP ≥ 160 mmHg; Abnormal renal function = presence of chronic dialysis or renal transplantation or serum creatinine ≥ 200 μmol/L; Abnormal liver function = chronic hepatitis disease (e.g., cirrhosis) or biochemical evidence of significant hepatic derangement (e.g., bilirubin > 2x upper limit of normal, in association with AST/ALT/ALP > 3x upper limit normal, etc.); Bleeding = previous bleeding history or predisposition to bleeding (e.g., bleeding diathesis, anemia, etc.); Labile INRs = unstable/high INRs or poor time in therapeutic range (e.g., < 60%); Drugs or alcohol = concomitant use of drugs, such as antiplatelet agents, non-steroidal anti-inflammatories, or alcohol abuse, etc.; INR = international normalized ratio <b>Annual Adjusted Bleeding Rate</b> 0 points = 1.13% 1 point = 1.02% 2 points = 1.88% 3 points = 3.74% 4 points = 8.70% 5 points = 12.50% Any score = 1.56%		

**Figure 3:** The HAS-BLED tool helps healthcare providers accurately weigh the risks of bleeding from anticoagulants versus benefits of stroke prevention. Source: Assessing Stroke and Bleeding Risk in Atrial Fibrillation: Consensus Statement on Appropriate Anticoagulant Use.<sup>26</sup> <http://bit.ly/afib-consensus>

valvular disease, and myocardial ischemia.<sup>6</sup>

- There have been greater declines in stroke death rates among men than in women.<sup>6</sup>

We celebrate the differences between men and women, but as far as afib and stroke are concerned, the differences can be deadly. Women are also more likely to experience longer symptomatic episodes, more frequent recurrences, and significantly higher ventricular rates during afib.<sup>7</sup> Interestingly, women with type B blood have a 17 percent increase in stroke risk compared to men.<sup>8</sup>

Like the revelations about women and heart disease, these differences may surprise many healthcare providers. The differences also extend to how women afib patients are viewed by some healthcare providers. Too many times, women with afib symptoms are dismissed as having panic attacks or being stressed and not taken seriously. However, afib in women can be much more serious. When healthcare providers know about the differences in risk, diagnosis, and treatment, they can provide the best possible treatment to female afib sufferers.

### ASSESSING STROKE AND BLEEDING RISK

To assess the stroke risk of those with afib and the need for anticoagulants, many healthcare providers use the CHADS<sub>2</sub> and CHA<sub>2</sub>DS<sub>2</sub>-VASc scoring tools (Figure 2) to help gauge the risk of stroke and determine whether to prescribe anticoagulants. However, the CHADS<sub>2</sub> tool fails to consider women's apparent greater stroke risk.

For those who have a CHADS<sub>2</sub> score of 0 or 1, meaning that anticoagulants may not be deemed necessary, considering their CHA<sub>2</sub>DS<sub>2</sub>-VASc score may provide a more accurate assessment of their true stroke risk. It incorporates vascular disease, another age range (65 to 74 years), an additional weighting for being 75 years or older, and the female gender.<sup>9</sup> Therefore, using only the CHADS<sub>2</sub> tool for women (and some men) who are a CHADS<sub>2</sub> score of 0 or 1 could be a disservice to them.

When deciding whether to use anticoagulants, some healthcare providers also weigh bleeding risk. One commonly used tool that helps gauge this risk is the HAS-BLED scoring tool that takes into account major bleeding risk factors, such as Hypertension, Abnormal kidney or liver function, Stroke, Bleeding, Labile INR (unstable or high INRs), or poor time in the therapeutic

range), Elderly, and Drugs or alcohol. For more information about the HAS-BLED scoring tool, see Figure 3.<sup>10</sup> Using these tools can help optimize afib patient care.

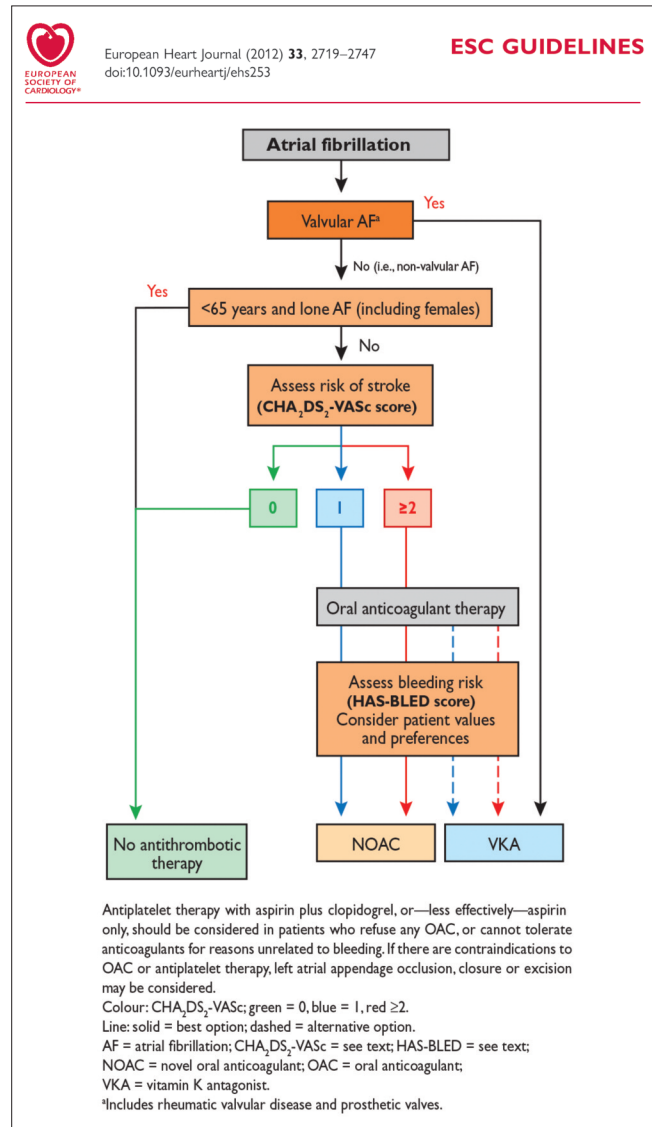
### POTENTIAL MISPERCEPTIONS ABOUT WOMEN AND AFIB

Healthcare providers have to be careful about afib-related misperceptions and clarify them for patients. Some media reported that a recent Danish study concluded that females with atrial fibrillation weren't at greater risk of a stroke. These news outlets didn't read the full study, because the authors clearly stated that for there to be no additional stroke risk, women must be younger than 65 and have no other stroke risk factors aside from afib. In other words, they must truly have lone afib.

The study authors noted that the European Society of Cardiology (ESC) guidelines (Figure 4) advise that female patients with afib take oral anticoagulants, except those who meet the "age <65 and lone AF criterion." Female patients under 65 with just one minor risk factor, and those between 65 and 74 years of age with no additional risk factors, should be on oral anticoagulants. While these Danish study results contradict the recommendations in the guidelines because they did not find females aged less than 75 to have excess risk when compared to males, the study authors still recommended sticking to the ESC guidelines because so many other studies have reported otherwise.<sup>11</sup>

This bears emphasis: the study authors recommended that anticoagulation is not needed only for women 65 and younger with lone afib. If women have other stroke risk factors, such as diabetes, high blood pressure, or heart disease, making them a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 2 or more, they clearly need anticoagulants. To say otherwise irresponsibly jeopardizes women's lives.

Afib affects immediate risks and the long-term prognosis of women differently than men. An analysis from the Euro Heart Survey for Afib found that women with afib have more than double the thromboembolism risk of men with afib.<sup>12</sup> In addition, a Swedish study found that the rate of ischemic stroke in afib patients younger than 65 years of age was 47 percent higher in women than men.<sup>13</sup> What's worse: women overall have a significantly higher risk of afib-related stroke than men and are more likely to live with stroke-related disability. As



**Figure 4:** The European Society of Cardiology advises oral anticoagulants for female patients with afib except those who meet the "age <65 and lone AF criterion." So female afib patients under 65 with just one minor risk factor, and those between 65 and 74 years of age with no additional risk factors, should be on oral anticoagulants. [With permission of Oxford University Press (UK) (c) European Society of Cardiology, [www.escardio.org/guidelines](http://www.escardio.org/guidelines). A. John Camm et al. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation: An update of the 2010 ESC Guidelines for the management of atrial fibrillation. Developed with the special contribution of the European Heart Rhythm Association. *Eur Heart J.* (2012) 33(21): 2719–2747, doi:10.1093/eurheartj/ehs25, Fig. 1].<sup>27</sup>

you might imagine, women who have these stroke-related disabilities have a significantly lower quality of life.<sup>6</sup>

### SOURCES OF AFIB-RELATED GENDER DIFFERENCES

While not all of the sources of afib differences between men and women

are known, researchers have found some very specific afib-related differences. For example, blood pressure (BP) is strongly associated with afib in women, and systolic BP is a better predictor in women than diastolic BP.<sup>14</sup>

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## Gender Matters

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These differences between men and women with afib may be based in physiology, vascular biology, genetics, hormones, or thromboembolic factors. Certainly, menstrual cycles and hormones play a role in women.<sup>6</sup> Biomarkers for inflammation, such as high-sensitivity C-reactive protein, soluble intercellular adhesion molecule-1, and fibrinogen, have been associated with afib in women with a history of heart disease.<sup>15</sup> Women also live longer than men, placing them in the susceptible age range for afib for a longer amount of time.<sup>16</sup>

Social and psychological differences between men and women also relate to afib. For example, we know that cardiovascular events are more common among women who have high-stress jobs.<sup>17</sup> Although heavy alcohol consumption is associated with higher risk of afib among men, there is no such association in women.<sup>18</sup>

Another critical difference is communication. Women communicate differently than men, and understanding those differences can go a long way to helping your afib patients. For ideas of ways to better talk with afib patients, especially women, see the

sidebar “Improving Communication with Afib Patients.”

### RATE AND RHYTHM TREATMENT DIFFERENCES FOR WOMEN WITH AFIB

To control arrhythmia, medications are typically prescribed. Other treatments include catheter ablation and surgical ablation procedures. But there are differences in treatment, too.

Research shows that women are prescribed beta blockers and digoxin (rate control drugs) more often, whereas men are more often prescribed class I or class III anti-arrhythmic drugs (rhythm control drugs).<sup>13</sup>

What are the implications of these treatment differences? Women may be left in afib longer without treatment because the condition may not be viewed as worthy of treatment in women. Or women may just be left on rate control, which doesn't treat the condition or the symptoms, some of which may be inaccurately attributed to aging instead of afib. For many, rate control leads to a lower quality of life as these medications may leave them fatigued and even “in a fog.”

What's absolutely tragic: being left on rate control long term, and in afib, may allow fibrosis to continue to build in their hearts, increasing their stroke

risk. While we don't know what causes women's greater stroke risk, perhaps delayed treatment or less aggressive treatment in women plays a role.

### ANTICOAGULATION AND BLEEDING DIFFERENCES

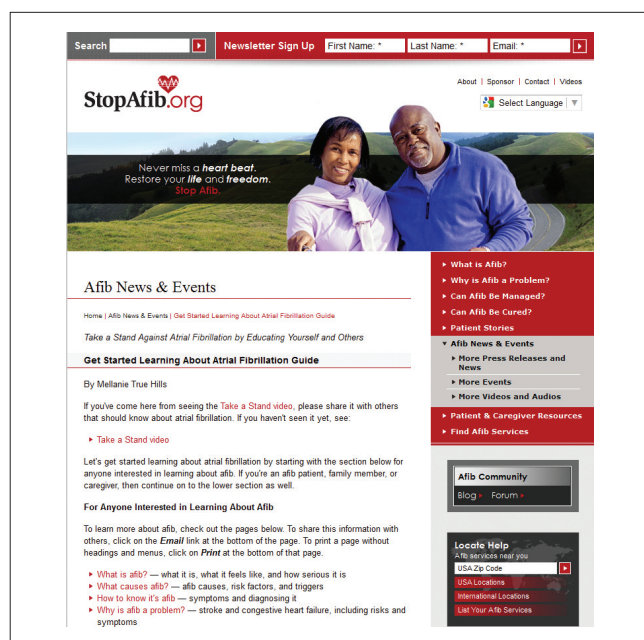
There are differences related to anticoagulants, too. Women, especially those 75 years or older, have a higher risk of stroke than men, regardless of their use of warfarin.<sup>19</sup> Women's adherence to anticoagulants isn't an issue, either. While some research shows that women are less adherent to medications for some chronic conditions, that doesn't appear to be the case for warfarin adherence. When it comes to warfarin, men have been found to have lower warfarin adherence rates than women.<sup>20</sup> Women are also at a higher risk than men for afib-related thromboembolism when off of warfarin.<sup>21</sup>

Another significant difference: women on warfarin spend more time outside of the therapeutic range than men. In a recently published study, on average, women were outside of the therapeutic range 40 percent of the time compared to men's 37 percent. Women also spent more time below the therapeutic range, putting them at more risk for ischemic stroke, at 29 percent compared to 26 percent in men.<sup>22</sup>

Patient self-monitoring of warfarin should help women stay in therapeutic range. However, one study found more men than women (56 percent vs. 44 percent) were referred for self-monitoring, leading to the question of whether women are referred for self-monitoring less often.<sup>23</sup>

One of the most frustrating aspects of this issue has been discovering that women are sometimes told to “just take aspirin because you're a CHADS<sub>2</sub> score of 1, with just one risk factor, so you are at low risk,” when in fact the latest guidelines (Figure 4) indicate that having a single risk factor beyond afib increases a woman's stroke risk and that she should consider an anticoagulant.

Even more frustrating is when women 75 or over are automatically considered to be a “fall risk,” regardless of their physical condition, and thus are not considered for an anticoagulant and then often go on to have a stroke. Warfarin is superior to aspirin in reducing the risk of stroke, especially in women, as it reduces the risk by 84 percent in them compared to 60 percent in men.<sup>6</sup> However, women over 75 years old were 54 percent less likely to receive warfarin and twice as likely to receive aspirin. Aspirin is associated with a significantly decreased stroke



**Figure 5:** StopAfib.org (<http://bit.ly/epStart>) contains many resources for healthcare providers and patients. The site includes a doctor finder, afib-related news and videos, a newsletter, and a discussion forum to connect patients.



**Figure 6:** By handing out StopAfib.org patient cards, healthcare providers can connect patients to a wealth of information and sources of support. Contact us at <http://www.stopafib.org/contact.cfm> to receive some patient cards.

risk in men (44 percent), but the risk reduction in women is about half of that (23 percent).<sup>12</sup>

While aspirin is currently part of the U.S. afib guidelines, many of the other afib guidelines have withdrawn aspirin for prevention of afib-related strokes.

But what may be even better news for women is that stroke reduction results of the newer novel oral anticoagulants are even stronger than warfarin.

When looking to prescribe anticoagulant medication to women, additional risk of bleeding shouldn't be a concern. Studies have shown bleeding risk for men and women to be about the same.<sup>20</sup> This is another one of those perceptions that needs to change.

## OTHER TREATMENT DIFFERENCES

Some other differences in afib treatment for women include:

- Electrical cardioversion is used significantly less frequently in women.<sup>24</sup>
- Procedures are usually recommended only after more antiarrhythmic drugs in women than in men.<sup>6</sup>
- Despite similar outcomes, women with afib are referred for catheter ablation less often or later than men.<sup>6</sup>
- Women are over-represented in AV node ablation and under-represented in catheter ablation, according to data from a small, private practice study.<sup>25</sup>

We need more studies to determine if the greater stroke risk for women is due to physiological differences or treatment differences, or both. In the meantime, by being aware of these differences in afib between men and women, medical professionals can design a safer, more effective, and personalized approach to managing afib.

Electrophysiology professionals, cardiologists, and GPs can have a huge positive impact by recognizing these differences in diagnosing and treating atrial fibrillation in women. Wouldn't you want that kind of care for your mom, grandmother, sister, daughter, or spouse? ■

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## IMPROVING COMMUNICATION WITH AFIB PATIENTS

Women communicate differently from men. Doctors may not comprehend how much afib symptoms are affecting women's quality of life. Often, doctors' instructions may not have been understood. Or, perhaps, the significance of the drug wasn't completely conveyed or comprehended. Remember, the more vague medication instructions are, or the more difficult it is to incorporate with other meds, the worse adherence will be. Here are a few tips for improving communications with afib patients:

- Put yourself in the patient's heart.
- Slow it down and speak clearly and simply. Especially when afib patients are initially diagnosed, they may not be able to process information as quickly.
- Cut down on medical jargon. Don't assume patients understand the jargon, as they probably don't.
- Don't just ask "How are you doing?" Instead ask: "What can't you do now that you could do before afib?"
- Listen for what is said, and what is not said, and ask clarifying questions. Some women communicate with emotion rather

than facts, so you may have to listen closely to distill symptoms and side effects from what is said.

- Define options. When describing potential treatment options, be as descriptive as possible and assess whether the patient understands what you said. Yes, I know you have limited time, but you can refer them to StopAfib.org to learn more.
- Be a team. Explore treatment options together. Work with patients to understand their lifestyle and find the best type of treatment to fit it.

This is an area that I want to greatly expand upon to help you eliminate some of your frustrations in dealing with complex and often difficult afib patients. I am creating an email newsletter to share tips to help you engage and empower your patients. If you're interested, just give me your email address at <http://bit.ly/engagepatients>. Wouldn't it be nice to enjoy treating your afib patients!

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