ALTHOUGH anyone who has had to run up a flight of steps or has had a frightening experience is quite familiar with a racing heartbeat, for the more than 2 million Americans who suffer from atrial fibrillation (also referred to as AF or AFib), that sensation of a fast, irregular and chaotic heartbeat all too often becomes a way of life, severely impairing the quality of life of many and may put their health at risk, says the October 2011 special supplement of the Johns Hopkins HealthAfter 50.

Under normal circumstances, the heart beats close to 100,000 times a day — about 70 minutes per minute, every minute, every hour, every day, every year.

The normal heart rhythm, called “normal sinus rhythm,” is controlled by the sinoatrial (SA) node, located in the upper right atrium which acts as a natural pacemaker that governs the heart’s rate and rhythm, adds the health letter.

However, aside from the specialized cells of the SA node, millions of heart muscle cells all have the ability to create their own electrical signals, disrupting the normal sinus rhythm in the process.
If, for some reason, these cells misfire, the heart’s electrical system goes haywire — the heart may race from a normal resting rate of 60 to 90 beats per minute (bpm) up to 200 bpm, then slow down after a few moments — leading to less efficient blood circulation and an irregular chaotic pulse.

This irregularity may occur hundreds of times a day, or only in several short episodes a year.

These misfirings can result in what are called premature or ectopic beats — that is, coming from a source other than the SA node.

If there is a “run” of premature beats in the atria, the heart rhythm can go into what’s known as atrial fibrillation — the multiple or rapid firing of electrical signals from different areas of the atria rather than the SA node — alters the movement of blood through the atria.

Because the heart’s atria quiver rather than contract forcefully, beating in the lower heart chambers (ventricles) becomes irregular, and often, rapid.

Atrial fibrillation, the most common sustained cardiac arrhythmia seen by doctors today, affects little less than 1 percent of the general population — one in four men and women over age 40 are at risk of developing the condition.

The risk increases with age — about 70 percent of all atrial fibrillation patients are between ages 65 and 85.

Approximately 2.6 million Americans have atrial fibrillation, but by the year 2050, this number is projected to grow to as many as 12 million due to an aging population with more than half of people affected by atrial fibrillation expected to be over the age of 80, explains the letter.

The classification of atrial fibrillation, based on a patient’s most frequent complaint, is:
• Paroxysmal atrial fibrillation — This is a recurrent condition in which the rapid heart rate and abnormal electrical signals spontaneously begin, typically last for a day or two, sometimes as long as a week, and then suddenly and mysteriously disappear.

Symptoms range from barely noticeable to severe.

• Persistent atrial fibrillation — This lasts longer than a week or lasts less than a week, but symptoms are stopped following cardioversion (medical or electrical).

• Long-standing persistent atrial fibrillation — This is continuous atrial fibrillation that lasts longer than a year.

Over time, episodes of both paroxysmal and persistent atrial fibrillation may become more frequent and bothersome and eventually will result in long-standing persistent atrial fibrillation.

Contrary to popular belief, atrial fibrillation itself is not life threatening but, in addition to impacting quality of life, it increases the risk of heart failure, stroke and death.

The mortality rate associated with atrial fibrillation is double that of patients with normal sinus rhythm.

In patients who already have heart failure, AFib aggravates the condition and, conversely, heart failure promotes atrial fibrillation.

One in every five ischemic strokes — caused by a blood clot blocking a narrowed artery or a clot that travels to the brain from somewhere else in the body — occurs in patients with atrial fibrillation.
Blood can pool in fibrillating atria (typically the left atrium), making it more likely to form clots, even after just two days, then eventually break off and travel to the brain, causing a stroke.

In individuals over age 70, AF is the most common risk factor associated with stroke and half of those patients with atrial fibrillation who experience a stroke die within a year.

Symptoms of atrial fibrillation vary from person to person — in many who have no symptoms, AF may be detected as an incidental finding during a physical exam or test that has been ordered for some other reason.

Symptoms of atrial fibrillation can include:

1) Fatigue

2) Palpitations — Irregular, rapid or pounding sensation in the neck or chest

3) Shortness of breath

4) Lightheadedness

5) Dizziness

6) Chest pain/discomfort

Diagnosis of atrial fibrillation is based on:
Management strategies for atrial fibrillation
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• Symptoms — Palpitations are a common symptom of AFib, and if you experience palpitations or any of the other symptoms associated with atrial fibrillation, make an appointment with your family doctor for evaluation.

• Electrocardiogram — ECG will show the atrial fibrillation.

• Electrophysiologist — Your doctor may refer you to this specialist — a cardiologist who specializes in the heart’s electrical system — for further testing and/or treatment.

There are three treatment goals for atrial fibrillation:

a) Restoration and maintenance of sinus rhythm whenever possible

b) Controlling heart rate

c) Preventing clot formation

The different approaches to treat atrial fibrillation or prevent its recurrence consist of:

• Medications — Typically the first line of defense, drug therapy uses drugs as monotherapy or in combination to control heart rate during atrial fibrillation, to restore heart rhythm or simply to reduce AF symptoms.

The drugs used include:
a) Antiarrhythmic drugs to get the heart back to normal sinus rhythm;

b) Beta blockers, calcium channel blockers and digoxin can be used to control the rapid ventricular rate; and

c) Anticoagulants, such as aspirin, warfarin (Coumadin) and dabigitran (Pradaxa), can be used to help prevent ischemic stroke in patients at risk.

• Cardioversion — Electrical cardioversion uses a powerful but brief electric shock delivered to the heart through paddles placed on the chest — it helps restore normal heart rhythm when medication does not improve symptoms.

Antiarrhythmic drugs are also used to restore and maintain the heart’s normal rhythm.

• Radiofrequency catheter ablation — An innovative, minimally invasive medical procedure called pulmonary vein atrium isolation (PVAI) — which delivers concentrated radiofrequency energy waves that heat and destroy the source of abnormal electrical signals — is used to eliminate areas of the heart muscle that trigger abnormal rhythm.

• Surgical ablation — Appropriate candidates for surgical ablation include:

1) Patients undergoing other cardiac surgical procedures who have bothersome atrial fibrillation symptoms;

2) Asymptomatic patients who are undergoing cardiac surgery [and their ablation can be performed with minimal risk];

3) Atrial fibrillation patients who have failed one or more catheter ablation attempts; and
4) Patients who are not candidates for catheter ablation.

Since making treatment decisions about atrial fibrillation can be tricky, any patient who experiences an episode of atrial fibrillation needs to be evaluated by a cardiologist, who can determine the best course of therapy, concludes the health letter.