

Atrial Fibrillation

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Irregularity in the heartbeat is felt by most people at some time in their life. They may feel the heart flop or seem to skip a beat at night after going to bed, or be aware of it only when they are under stress. Sometimes a change in the eating pattern or in the weight—gaining or losing—may cause rhythm disturbances in the heart. Having chilled extremities a large portion of the day can cause rhythm disturbances that night after getting in bed. Potassium has accumulated in the chilled tissues and is released when the feet and legs warm up in bed. The sudden extra load of potassium causes the heart to make a few extra beats. These kinds of rhythm disturbances do not indicate an unhealthy heart. Unless the heart rate and rhythm cause some physical disability, the condition is not one to cause concern. There are, however, several types of rhythm disturbances associated with changes in the ability to do work, or in the expectation of being free from health problems. The most common of these is atrial fibrillation, in which individual muscle fibers of atria take up their own independent action, producing an uncoordinated contraction of the two upper chambers of the heart.

Anatomy of the heart

The heart is comprised of four chambers, two called atria or auricles, and two called ventricles. The atria are two upper chambers or rooms that receive blood from the veins, and then when the ventricles are ready for more blood, push the blood into the ventricles. The right atrium receives the blood returning from the head and the lower part of the body, and the left atrium receives the blood returning with a fresh load of oxygen from the lungs.

Very simply, the factor causing the atria and the ventricles to beat is the conduction of an electrical current through the heart that starts in the upper portion of the atria, passes down over the atria and then fans out over the ventricles to cause a smooth contraction of every muscle fiber in the heart. It is an alteration of the conduction of the electrical impulse over the atria that causes atrial fibrillation (AF).

Contraction of the atria account for about 15 to 30% of total heart output of blood. They do this by augmenting the effectiveness of the beat of the ventricles. In atrial fibrillation this contribution to the work of the heart is largely lost since the atria do not make a worthwhile beat due to the independent action of the atria.

How the function of the heart is altered by AF

First, the atria become unable to assist the ventricles in filling with blood when the ventricles are relaxed for the purpose of taking in more blood. This results in a 20 to 30% loss of effectiveness in the heartbeat (Ref. *Annual Review of Medicine* 39:41-52, 1988).

Second, the ventricles often beat fast enough that adequate filling is prevented, the next beat occurring before the ventricles have completely filled. The normal rate of the healthy

heart should be from 50 to 90 beats per minute. In AF without treatment the rate may be over 100. When AF first starts it may be as high as 130 to 160 per minute, settling down in a few days to a slower rate.

Third, many beats are wasted because of the lack of coordination of the contraction time of the atria with the most optimum time for the ventricles to fill with more blood.

Fourth, the coronary artery blood flow may be reduced because of the same factors mentioned above that reduce the output of blood from the ventricles. Thus the heart muscle does not get optimum nutrition since the coronary artery blood flow is dependant on a powerful and effective beat from the ventricles. If the coronary arteries are themselves diseased by atherosclerosis, the heart muscle can become diseased from serious lack of blood.

Fifth, since the atria are not being effective in pushing blood forward into the ventricles, there is a backup of blood in the great veins, which continues backing up into the head, in the chest, and all the way down into the feet. It will be observed that people with atrial fibrillation have distended veins in the neck, on the arms, and even on the feet. If varicose veins are present, they will tend to be very distended. There is an increase in capillary pressure in the lungs.

Features of the disorder

Symptoms may be absent or very few, or the patient can complain of annoying or disabling symptoms. Probably palpitations are the most frequent unpleasant symptom. If the ventricular rate is very rapid, the persons may faint or get angina. When there is underlying heart disease such as rheumatic heart disease or valvular or coronary disease, congestive heart failure may ensue. Shortness of breath on physical exertion is another important annoying sign of atrial fibrillation. The person will usually have a reduced exercise tolerance, particularly at first. Even so, moderate exercise is still a good treatment for the person with AF.

How the diagnosis is made

The most important thing the patient can sense in making a self diagnosis is the chaotic rhythm of the heart without any semblance of order. The physician must distinguish atrial fibrillation from sinus arrhythmia, from ectopic beats, and from atrial flutter with an irregular ventricular response. Sinus arrhythmia is a variation in rate from fast to slow, repeated with each exhalation/inhalation cycle, and recognized by the fact that it speeds up or slows down in relation to respiration. Ectopic beats are those caused by electrical currents generated from locations other than the normal location high in the atria, and can be recognized by the presence of some fundamental order, with occasional or frequent extra beats. The diagnosis is confirmed by the EKG.

Definition and Discussion

Atrial fibrillation is of two types, paroxysmal that occurs occasionally for varying lengths of time from a few seconds to a few hours or days, and chronic or sustained atrial fibrillation. It is the most important heart arrhythmia (heart rhythm disturbance) since it

occurs in more people than any other arrhythmia. It assumes importance also because of its association with unpleasant or disabling symptoms, and also because a certain percentage of people with AF will suffer a stroke. If atrial fibrillation has continued for a week, it may be regarded as chronic, as the heart thereafter rarely resumes a normal rhythm spontaneously.

The number of electrical impulses that pass over the atria in atrial fibrillation may range from 350 to 400 or more, causing the atria to remain distended by blood, as no effective beat of the atria can occur when it is quivering with this fast rate. The ventricles then become cut loose from the normal control of the atrial impulses, as only a fraction of these many electrical impulses succeed in reaching the ventricles. The result is that the ventricles contract rapidly and irregularly. Quick beats and slow beats come without a predictable pattern. The pulse is irregular both in time and in force. There will generally be a "pulse deficit," that is, the heart beats, but the beat is not discernible at the wrist.

When the atrial fibrillation first begins, the patient may be quite alarmed since the heart rate may immediately race up to 120 or 130 beats per minute, the person may feel short of breath, and have great difficulty in tolerating even a small amount of exercise. Usually in a few days, or a week or so, the very rapid rate will reduce somewhat. If the person has no underlying heart disease, the irregular rhythm may be tolerated quite well. If there is already existing heart disease, uncontrolled atrial fibrillation is often the turning point in the downward progress of many patients suffering from various types of heart disease.

Here is a test you can do on yourself to see if the skipping or flopping of your heart is significant: with exercise, insignificant rhythm disturbances usually become more regular or disappear, whereas atrial fibrillation becomes more rapid and more irregular with exercise. This is one of the diagnostic features of atrial fibrillation, or any other rhythm irregularity.

About two million persons are affected by atrial fibrillation in the United States. The incidence increases with age, rising from 0.05% at age 25 or 30, to more than 5.0% of people over 60 years of age. In people over 70 years of age atrial fibrillation may increase to 10 or even 25%, and the figure goes up to 40% in the elderly with congestive heart failure. The presence of atrial fibrillation is associated with a five-fold increased risk of morbidity, and a two fold increased risk in mortality, and an increased incidence of stroke due to a blood clot which formed in the heart, broke away from the heart and went to the brain to cause a stroke. Patients with AF may feel dizziness and weakness (Ref. *Kluwer Academic Publishers Dordrecht*. The Netherlands, 1992).

Different types of atrial fibrillation (AF)

Types

Paroxysmal AF
Recent onset
Long standing

Mode of Onset and Duration

Sporadic, occasional or frequent
lasting less than 48 hours
lasting more than 48 hours but
less than 6 months

Transient AF	Acute, only during intercurrent trigger disease
Chronic AF	Sustained, frequently permanent lasting more than 6 months

Number of attacks in patients with Paroxysmal AF

Sporadic (infrequent)	Monthly or less
Recurrent	Weekly
Frequent	Almost daily, up to weekly
Incessant	Daily, covering more than 12 hours/day

Causes

Heart disease: The commonest causes of AF are hypertension, coronary artery disease, and rheumatic heart valve disease. Almost any kind of heart disease can be a cause of atrial fibrillation, such as mitral valve stenosis, coronary artery disease or atherosclerosis, previous heart attacks or scarring of the heart muscle. Atrial fibrillation occurring in heart disease is usually chronic, whereas a toxic thyroid goiter or acute pneumonia may give only a single episode of paroxysmal atrial fibrillation.

Acute infections or surgery: Occasionally atrial fibrillation develops with acute infections such as pneumonia, or in terminal diseases having a lot of weight loss. It may begin after surgical operations, particularly when the chest is opened for some reason. In an appreciable number of otherwise normal individuals, it begins with no apparent cause.

Weather: There has been found a 33% increase in rhythm disturbances in the winter, 28% in the fall, 15% in the summer, and 15% in spring, people who live in warm locations such as Florida are less likely to suffer the winter-time increase in rhythm disturbances (Ref. 1996 *Medical Tribune News Service*).

Heart surgery: Coronary artery surgery is a common cause of atrial fibrillation. It afflicts from 40 to 50% of people after heart surgery, and closer to 70 to 80% if they have had preoperative paroxysmal atrial fibrillation (Ref. "*Atrial Fibrillation Update 1996: Case 2*" **CZR&R**, July 1996, pages 36-60).

Inflammation of the heart sac: Pericarditis, either arising on its own, or following surgery on the heart, is also a cause of atrial fibrillation.

W-P-W: Certain types of congenital heart disease, particularly Wolff-Parkinson-White syndrome, are associated with AF.

Caffeine, alcohol, and other toxins: Alcohol abuse, often causing the "holiday heart" syndrome with inflammation of heart muscle, may be the beginning of atrial fibrillation. In addition to alcohol, other toxins and caffeine cause AF. Methylxanthines in coffee, tea, colas, and chocolate, sympathomimetics, drugs and amphetamines all cause AF (Ref. *Archives of Internal Medicine* 145:830-3; May, 1985).

Aging and obesity: Advancing age and advancing weight are risk factors for atrial fibrillation, and also for increasing the risk of postoperative atrial fibrillation.

Hypoglycemia: Severe hypoglycemia (*Israeli Journal of Medical Science* 25:346-347, 1989) can cause atrial fibrillation (Ref. *The Lancet* August 20, 1988 and *Postgraduate Medical Journal* 66:981, 1990).

Tyramine foods: Another cause of atrial fibrillation is tyramine containing foods. Episodes of atrial fibrillation occurred after meals in a 60 year old man. He had a history of heart disease associated with low oxygen in the heart muscle. It was discovered that the AF was due to eating tyramine containing foods and drinks—cheese, chocolate, red wine, bananas, broad beans, any food containing aspartame or Nutrisweet, and some canned foods with preservatives—all were found to cause the man to have AF. An attack was also precipitated by his eating home baked bread made with dried yeast. When the patient did not eat foods or take drinks containing tyramine, he had no atrial fibrillation, but immediately developed atrial fibrillation after tyramine, phenylalanine, and tyrosine.

Certain other foods to avoid are yogurt, pineapple, and commercial ice cream. Phenylalanine, tyramine, serotonin, tyrosine, and noradrenaline are the vasoactive amines most commonly found in these foods. Phenylalanine is metabolized to tyrosine which is decarboxylated to tyramine, DOPA, dopamine, and noradrenaline (Ref. *British Heart Journal* 57:205-6; 1987). Arrhythmias caused by tyramine may explain the palpitations reported with the "cheese effect" in patients who were taking monoamine oxidase inhibitors. They have hypertensive episodes after eating food containing tyramine. Even such a common (although unhealthful) food as cheese can induce serious arrhythmias. Diets low in tyramine are of value for patients who are prone to heart arrhythmias or are taking Digoxin (Ref. *The New England Journal of Medicine* 313(4):266-267, July 25, 1985).

One 65 year old woman who had recurrent AF for eight years, along with arthritis, blurring of vision, coughing and sneezing spells, and several other signs that could be attributed to food sensitivity, could bring on her AF when she ate meals containing foods to which she was sensitive (Ref. *Food Allergy: New Perspectives* by J. W. Garrard, Chas. C. Thomas, Springfield, IL, 1980).

Long standing rhythm disturbance: Sick sinus syndrome (fast heart rate or slow heart rate) can develop into AF. If one has a bout of unexplained fast heart rate, it should be regarded seriously as a potential precursor for AF.

Air pollutants: Smoke inhalation is a factor in some people causing atrial fibrillation. A sixteen year old boy who was exposed for about four minutes to dense smoke coming from a trash fire in a tightly enclosed corridor of his school developed atrial fibrillation. The arrhythmia lasted 21 hours and converted to a normal sinus rhythm. Another case was reported of AF caused by the use of a breath spray (Ref. *The New England Journal of Medicine* 320:124, January 12, 1989).

Cold foods: Atrial fibrillation was caused in one case by the swallowing of frozen yogurt. It was the ice cold nature of the desert that caused the atrial fibrillation. The patient was a 43 year old female who noted the sudden onset of extremely rapid heart action soon after eating about one-quarter of a serving of frozen yogurt. Dizziness and a vice like pressure in her chest immediately followed. It was subsequently recognized that she had Wolff-Parkinson-White syndrome (Ref. *The American Journal of Cardiology* 73:617-618, March 15, 1994).

Stress: The effect of stress cannot be overstated. Since stress can cause a major increase in ventricular rate, stress should be avoided as much as possible. Exercise neutralizes stress, as does a very regular schedule. As many stressful things as possible should be removed from the program of the person with atrial fibrillation to reduce the likelihood of intravascular clotting, as stress hormones greatly increase the probability of clotting the blood inside one's blood vessels.

Nervous depletion: Stressful psychological factors produce a nervous and biochemical depletion in everyone, and a kind of exhaustion in which the person feels drained and devoid of usual energy. If the person has pre-existing heart disease, fatigue then markedly boosts the chance of suffering further serious heart problems. Along with fatigue comes heightened irritability. Add to this a sense of being demoralized, and we have the factors that make up a condition called "vital exhaustion" (Ref. *Science News* 146:87, August 6, 1994). On this condition, even the healthy heart can develop rhythm disturbances that can lead to AF.

Immune system: Another of the underlying mechanisms behind irregular heartbeat in otherwise healthy people may be a collapse in the immunoregulatory process. This process controls many more functions of the body than protection from infection—the processes of digestion, electrical forces in the body, the levels of cheerfulness, and many others. Loss of a portion of this regulatory system can cause electrical conduction disturbances in the heart. In one study 13.6% of patients with atrial arrhythmias had antibodies (from the immune system) to certain peptides (portions of protein molecules) in the body (Ref. *American College of Cardiology* 26:864-869, 1995). The IgG (an antibody called immune globulin G) causes a rapid increase in the rate of feeding of heart muscle cells in the laboratory. In people with conduction disturbances of the heart, a high prevalence of antibodies against native body chemicals suggests a problem with the immune system.

High blood pressure: Hypertension can also cause atrial fibrillation. This is perhaps the commonest underlying condition associated with chronic AF.

Blood starved heart muscle: Inadequate blood flow to the heart muscle can cause atrial fibrillation. The usual cause of reduced blood flow is coronary artery disease.

Normal persons: It is also true that apparently healthy, happy, and normal people get atrial fibrillation. This is termed "lone atrial fibrillation" (LAF).

Treatment

Except for the development of direct current shock therapy about two decades ago, the standard medical management of atrial fibrillation has changed little from that described by Mackenzie in 1925. We will spend most of our effort on presenting alternatives to standard medical practice.

Objectives of treatment: The treatment is first aimed at slowing the heart rate. The objective in atrial fibrillation is to have the resting rate below 90 beats per minute. This results in the second objective of reducing the risk of getting blood clots inside the atria due to stagnation of blood in these heart chambers. The next objective of treatment is to improve the general circulation and reduce the swelling in the ankles (Ref. *Southern Medical Journal* 89(7):666-667, July 1996). Exaggerated pulse rate in response to exercise may be quite high in AF, often reaching 170 or 180 beats per minute, especially during the first few weeks after onset.

To accomplish these objectives, treatments include the following types:

Fasting: Since fasting reduces the number of nutrients dissolved in the blood and makes the blood less heavy, a day or two of fasting per week will do most patients quite a lot of good by reducing the force of the palpitations and making them less noticeable.

Drinking a lot of water: Since the tissues hold onto quite a lot of fluid during the day due to increased pressure on the side of the heart of the veins, the amount of fluid left in the bloodstream is reduced. Therefore, during the day the patient may have a degree of dehydration of the blood, and over-hydration of the tissues. The lack in the bloodstream must be supplied by drinking extra water as the water thins out the blood and reduces the possibility of developing a clot in the atrium. Unfortunately, this practice will result in more trips to the bathroom during the night as the tissue fluid gradually goes back into the bloodstream when the person lies down. The trips to the bathroom can interfere with sleep to some degree.

Toward morning the diuresis experienced throughout the night may have caused the blood to be low in water. A small glass of water should be taken about 3:00 to 5:00 a.m. to prevent the thickening of the blood in the early morning. This practice could be just the thing to prevent a clot that would cause a stroke.

Massage: Perhaps the most pleasant treatment is the use of massage which has been advised in restoring heart rhythm, or in reducing heart rate. There is a growing body of research connecting heart rate and massage. These research papers report a reduced heart rate with massage as well as lowered blood pressure, decreased anxiety, increasing relaxation, and a sense of well-being. It is described how massage was used in ancient times to restore normal heart rhythm from a state of atrial fibrillation in one patient (Ref. *Nursing Times* 90(38);36-7, September 21-27, 1994).

Prayer: Psychological factors can dramatically influence heart rhythm disturbances. An 83 year old devout black woman developed atrial fibrillation with a ventricular rate of

120 to 170 beats per minute. In her hospital room the patient was anointed with oil during prayer with her minister and her daughters, according to the biblical instructions. A nurse reported that while the service was going on she was watching the heart monitor in the patient's room. The heart rhythm was suddenly restored during the prayer. Atrial fibrillation did not recur in this woman (Ref. *Annals of Internal Medicine* 104(5):727-728, May, 1986).

Physical maneuvers: For acute onset AF—during the first few minutes preferably, and up to one week—carotid artery massage and other maneuvers outlined in our description elsewhere of PAT (paroxysmal atrial tachycardia), along with the splashing of ice water on the face for five seconds, can be helpful to convert the rhythm to normal. Supraventricular tachycardia, another fast rhythm of the heart, has been reported to convert in about 96% of young patients with this condition of childhood by splashing cold water in the face (Ref. *Turkish Journal of Pediatrics* 37:15, January-March, 1995).

Garlic and its relatives: Garlic extract 500 milligrams, twice a day has a very powerful anti-platelet aggregation activity. Garlic can dramatically reduce platelet stickiness. The raw garlic can also be used—one or two cloves of raw minced garlic three times a day.

Ajoene, a compound in garlic developed by gently heating garlic in oil or by making an alcohol extract of garlic, has very potent qualities to inhibit platelet aggregation and prevent clots inside the blood vessels (Ref. *Thrombosis Research* 75:243, 1994). Heating one or two minced cloves in a teaspoon of a good vegetable oil once or twice a day is probably sufficient. In another study it was demonstrated that dried garlic powder given for four weeks significantly reduced the clotting ability of the blood (Ref. *Atherosclerosis* 74:247, 1988). If you use this form of garlic, we suggest one to two teaspoons with each meal of the freshest powder you can get. Take it on a continuing basis (Ref. *American Journal of Natural Medicine* 2(8):5-8, October 1995).

In 120 patients with known increased platelet aggregation, 900 milligrams per day of dried garlic preparation containing 1.3% alliin were compared with 120 patients on a placebo for four weeks. It was determined that the garlic treated patients had an increase in microcirculation of the skin by 47.6%. Plasma viscosity decreased by 3.2%, and diastolic blood pressure dropped from an average of 74 to 67 points. Fasting blood sugar dropped from 90 to 79 mg./dl.

Extra Rest: Since sleep is interfered with by trips to the bathroom, the person with atrial fibrillation should allow approximately an extra hour of sleep time at night. If the person has been accustomed to seven hours of sleep each night, now the sleep period should be increased to eight hours, more or less.

Naps: After physical exertion of major proportions such as after a vigorous work or exercise period out-of-doors, a short nap of 30 to 45 minutes will restore the heart to a calmer rhythm, reduce atrial dilation, will encourage reduction of pressure in the veins, encourage diuresis, and decrease the likelihood of reduced nutrition to the heart muscle.

Colon health: The old doctors and homeopaths used to say the colon is the source of some rhythm disturbances in the heart. They recommend a four to seven day colon cleansing routine. The program we are recommending, however, should keep the colon in good health without special cleansing routines.

Thickness of the blood (viscosity): The thickness of the blood should be reduced by reducing such waste products in the blood as blood urea nitrogen, uric acid, and other urinary tract wastes. The lower the protein content of the diet, the lower the blood urea nitrogen and uric acid. For this the best diet is totally from plant sources. The blood cholesterol and triglycerides should be brought down to a very low level to reduce any sluggishness of blood flow in blood vessels.

The blood sugar should be controlled very carefully by avoiding overeating, and by leaving off, or severely reducing, all concentrated sweeteners such as honey, sugar, syrup, molasses, malt, etc. Avoid the occasional binges on sweets and rich holiday foods as binging is far more hazardous than you might think. Foods and soft drinks sweetened with concentrated sweeteners should be omitted. Since irritation of the myocardium by excess insulin may be one of the causes of atrial fibrillation, any practice that would increase the production of insulin should be avoided. That includes overeating, eating too frequently, and the use of heavy sweeteners. Most AF patients should eat very similarly to a diabetic.

The two-meal plan: The two meal a day plan should be adopted, using a hearty breakfast and a moderate lunch. Studies done in Australia have shown the benefits of the two-meal plan. In a large study those who ate all the food they would consume in one day during a six hour period with fasting the other 18 hours, had much less degenerative and immune system disease than those eating three meals or more each day (Ref. *New Zealand Evening Standard*, April 18, 1994). This meal pattern reduces the rate of aging and the onset of degenerative disease—allergies, asthma, cancer, and heart disease.

Exercise: Perhaps one of the most important matters in the treatment of atrial fibrillation is that of exercise. The very act of exercising reduces the likelihood that a blood clot will develop inside the atria. The heart rate is beneficially affected as are the circulation and fluid retention problems. Furthermore, it strengthens the immune system. Patients generally fare better with moderate exercise than with an inactive program. Exercise should be described as vigorous but not violent.

Diet: There are many features of diet which are important in any kind of heart disease, or any underlying disease. We will focus on those aspects of diet beneficial in AF.

1. A 77 year-old woman with high blood pressure developed episodes of paroxysmal atrial fibrillation which eventually became persistent. For two years she had chronic atrial fibrillation. Then she began taking vitamin D drops for the treatment of osteoporosis which the doctors had thought caused a bout of neuralgia. The vitamin D relieved the neuralgia in a few days, but the interesting

- thing was that a normal heart rhythm reappeared. She stopped taking the vitamin D, and the atrial fibrillation reappeared. She took the drops again, and again the atrial fibrillation went away (Ref. *Geriatrics* 45:83-5, 1990). The dosage of vitamin D should be 400 units daily.
2. Magnesium makes the patient with any kind of heart rhythm disturbance have a more comfortable rhythm regardless of whether the blood magnesium is low (Ref. *American Journal of Cardiology* 63:438, 1989). Magnesium aspartate is apparently the best form, as the aspartate speeds up the onset of the therapeutic effects of other forms of treatment. More than 20% of people who get atrial fibrillation are low in blood magnesium. Unless the magnesium deficiency is corrected, all other types of treatment may be less effective (Ref. *American Journal of Cardiology* 57:956, April 15, 1986; and 73:1227; 1994).
 3. For atrial fibrillation, carnitine, 100 milligrams per kilogram, administered intravenously, had some of the same antiarrhythmic effects that Quinidine has (Ref. *Archives of Int. Pharmacodyn. Ther.* 217:246, 1975). This information will not be helpful to non-physicians, but may be of use in guiding a willing physician to use alternatives to hazardous pharmaceuticals.
 4. CoQ10 (coenzyme Q-10), 50 mg. three times a day, exhibits an effective antiarrhythmic action, not merely in organic heart disease, but also on some of the complications in diabetes mellitus. It may take as long as a month of treatment before results will be observed (Ref. *Tohoku J. Exp. Med.* 453, 1983). A larger dosage, up to 300 mg. per day has been used in some in order to be effective. A course lasting three months should be initiated, and continued if found to be beneficial.
 5. Sunflower seed oil has polyunsaturated fatty acids, such as omega-6, which reduce the susceptibility in experimental animals to heart arrhythmias.
 6. Taurine affects membrane excitability by normalizing potassium flux in and out of the heart muscle, much like magnesium does (Ref. *Circulation Research* 35 (Suppl. 3):11-21, 1974; and *Vopr Med Khim* 32(4):113-116, 1986). Take 500 to 1000 mg. three times a day. Remember to take all amino acids on an empty stomach to prevent combining with other food substances.
 7. Zinc, 15 milligrams per day, and copper 0.5 milligrams per day, along with magnesium aspartate 500 to 600 milligrams per day are believed to be of help. The conduction of electrical impulses is normalized, and the health of the heart muscle is strengthened.
 8. 500 milligrams of alpha tocopherol (vitamin B-6) taken daily can reduce rhythm disturbances of the heart and diminish heart attacks (Ref. *Journal of the American College of Cardiology* 24:1580, November 15, 1994).
 9. A completely vegan diet, free from free fats, free sugars, spices, and vinegar, represent the most favorable diet for atrial fibrillation.
 10. Carnitine is a heart nutrient and may help. So are flavonoids which are found in fruits and vegetables in large quantities. Citrus fruits are especially high, particularly the white portions just under the peel. Berries of all kinds contain generous quantities of flavone oils, as do dry beans, especially soybeans. Among the herbs, hawthorn berry tea is richly endowed with flavones. Platelet

- aggregation is the primary mediator of arterial thrombosis. Flavonoids help prevent platelet aggregation.
11. Reducing salt in the diet can help substantially with fluid retention. The rule should be to take all foods salt-free or salt poor, add no salt at the table, and avoid all ready prepared foods. Eating out is always a problem, as the food will contain too much salt and too much fat.
 12. Eat as little food as you can get by with to barely maintain your weight. A few pounds lighter than the lower end of the weight scale will be best for you.

Herbal Remedies

There are several herbs having a salutary effect on the heart. The one that stands above all others in treating any heart problem is hawthorn berry tea. One to two heaping tablespoons of freshly ground hawthorn berries (with seeds) should be gently simmered for 10 to 20 minutes in one quart of water. Use a blender or little seed mill to grind the berries. Remove the mixture from the burner and add one heaping tablespoon of lily of the valley (to slow the heartbeat), and one to two heaping tablespoons of motherwort (to increase the strength of the heart). The heart output will be increased within 30 minutes of taking hawthorn berry tea. The circulation will be improved and congestion of the veins less.

Hawthorn berry increases coronary blood flow, decreases arterial blood pressure, increases blood flow to the skin and intermediate areas, decreases heart rate, and improves the force of the contraction of the heart muscle. It can be taken continuously for years as it is extremely well tolerated by humans, being in the apple family.

Hawthorn slows and strengthens the heartbeat. In a German study done in 1953 there was an 83% increase in coronary blood flow resulting from the use of hawthorn extract (Ref. *Journal of Pharmaceutical Science* 63:1974). Two of the very best remedies for atrial fibrillation are hawthorn berry and bilberry. They promote heart health and long life by supporting the circulatory system. Bilberry is the European equivalent of the American blueberry. Extracts are flavonoids and anthocyanosides. These strengthen capillaries and improve blood flow since they maintain the strength and flexibility of capillary walls. Bilberry can be used to treat varicose veins and spider veins. Bilberry has been shown to increase the flow of blood to the heart and other organs, as well as to the legs. It also helps to prevent blood clotting inside the veins, thus reducing the risk of stroke. This herb also increases heartbeat strength. There are no side effects or toxicity from the use of bilberry extract or tea. It can be obtained from a health food store (Ref. *Phytotherapy*, 1989, Vol. 60).

The omega-3 fatty acids which can be obtained from flaxseed oil, walnuts, etc., can be very helpful. These oils lower cholesterol and triglyceride levels.

Curcumin, a major component of the food herb turmeric (*Curcuma longa*) has a strong effect of reducing platelet stickiness and preventing blood clots from forming inside the heart or veins. Curcumin also changes the metabolism of platelets so that the platelets are more resistant to the adverse effects of various stress, diet, or lifestyle factors. Curcumin

also has very good anti-inflammatory properties. In some people an effective dose can irritate the bowel. Take one teaspoon of the powdered turmeric stirred in three or four ounces of water with meals. Get the powder from a grocery store having a frequent turnover of turmeric in order to get the freshest herb.

Grapes and grape seed. The phytochemicals in grapes and grape seed (chewed in fresh grapes, but also the commercial extracts) are believed by some doctors to be of help in AF.

Oil of cloves has been used as a kitchen spice and a toothache medicine for generations. The eugenol in the spice can irritate the stomach of some, but this component has a good effect of stopping the clumping together of blood platelets. A high protein diet decreases its effectiveness since proteins bind up eugenol. Oil of cloves—one to five drops—was found to be more effective than aspirin in preventing clotting. Stress encourages clotting, but oil of cloves (*Eugenia aromaticum L.*) will abolish this effect of stress.

Goldenseal (*Hydrastis canadensis*), barberry root (*Berberis vulgaris*), and Oregon grape root (*Berberis aquifolium*) all contain berberine. Administration of these herbs may prevent or treat ventricular arrhythmias. Berberine can protect the heart muscle from ischemia. If low oxygen in the heart muscle from coronary artery disease is a part of your problem with AF, you should take a good source of berberine.

Lily of the valley, or *Convallaria majalis*, was formerly said to be toxic in large doses; but it can be helpful in non-toxic doses for atrial fibrillation. Lily of the valley has had a change in its reputation in recent years from less favorable to more favorable. The active principle is a digitaloid and a diuretic principle. It has a sedative effect on the heart. The digitaloids are a family of naturally occurring chemicals having strong heart actions. Either fast heart rate or slow heart rate can be helped by lily of the valley. This herb does not accumulate in the body as does foxglove (digitalis), and is a valuable alternative to digitalis. Lily of the valley contains eight different isoflavones which are nutrients for the heart muscle. Use one or two heaping tablespoons of the herb in a quart of water. Steep for 20 to 30 minutes. You can put as many as seven herbs in the same quart of water for steeping, and still get out of the teas all their active principles in about 30 to 45 minutes. The more herbs you add, the longer they should steep, but not longer than 60 minutes.

Foxglove, *Digitalis purpurea* (toxic in large doses) can slow the heart rate and help with irregular heart action. Signs of toxicity are loss of appetite followed by nausea, and then vomiting. Bugleweed, *Lycopus virginicus*, is helpful in irregular heartbeat and strengthens the tone of the atrium, thus reducing pooling of blood. *Strophanthus hispidus* has been used in Africa to help a rapid heart. Cayenne, red pepper, one quarter teaspoon per day has been used to strengthen the heart.

Black currant seed is very good in the prevention of heart rhythm disturbances in aging laboratory animals such as rats. It may be worth a try in those with chronic AF, and certainly should be taken by those who have paroxysmal AF or any other rhythm

disturbance, to prevent its becoming chronic AF (Ref. *Nutrition Research* 14(7):1089, 1994).

To inhibit the formation of clots inside the atrium, ginkgo (*Ginkgo biloba*) has been used as it inhibits platelet activating factor, and therefore decreases platelet aggregation. Use 40 mg. three times a day (Ref. *European Journal of Pharmacology* 164:293; 1989).

Along with bugleweed as a heart tonic, cactus is sometimes recommended. These may increase the tone of the atrial muscle, thus reducing dilation of the atrium, a condition which encourages clots to form inside the chamber. Some homeopathic remedies are said to have been used with good success.

Posture, Spinal Position, and Respiration

Since the posture is very intimately associated with the rhythm of the heart, it is mandatory to assume very good posture. This will also encourage deeper respirations which are essential to keeping the atria from dilating and to appropriately oxygenate the blood. Both of these factors reduce the likelihood of developing clots.

To reduce breathlessness, which the person with atrial fibrillation will often experience, breathe out forcefully through rather closely pursed lips so that a bit of pressure builds up momentarily in the lungs. This pressure tends to squeeze blood from the great veins of the chest into the atria, and to put slight pressure on the atria giving them every opportunity to propel blood forward into the ventricles. During exercise if the person with atrial fibrillation feels breathless or senses congestion in the chest, he or she should practice the kind of breathing just described, or actually vocalize on each exhalation the word "Puh." Some coaches and physical exercise trainers encourage their athletes to use this technique to increase oxygenation of the blood while doing vigorous workouts.

Breathing exercises, stretching exercises, and relaxation techniques for an hour a day, along with exercise at least three hours per week are recommended in the *American Journal of Natural Medicine*.

Those who are specially trained can put finger pressure on the spine at T1 to T10 vertebrae and check and align the vertebrae from C7 to T10 using osteopathic or chiropractic techniques. We know a woman who had three crushed vertebrae in her thoracic spine (chest) when she fell from a height of about ten feet. A few years later she re-injured her back by heavy lifting, and shortly afterward developed AF. Her chiropractor thought the back injury was related to the AF as the spinal nerves to the heart come off the spinal cord at level of T1 to T4.

There are several nerves and brain nuclei which control the rate of the heart. Among those is the heart center in the medulla (part of the brain stem). These are cells in a group on both sides of the medulla which send off fibers to the heart. Also the vagus nerve, one of the cranial nerves, travels with fibers from the heart center in the medulla to the heart muscle fibers. Additionally, there are heart branches from the spinal sympathetic nerves which also go with the vagus and nerves from the heart center. These three sources form

the cardiac plexus (a meshwork of nerves) which envelopes the aortic arch and ascending aorta. This meshwork sends messages to the heart to slow the rate.

Magnets or Electromagnetic Devices

Some patients have felt more comfortable wearing a small magnet over the upper part of the heart. Certainly these simple devices are more desirable than drug medication. If they improve the sense of well-being of the patient, they are well worth the money they cost. Some heavily endowed medical centers are experimenting with more costly sources of magnetic attraction for the electrical impulses of the heart. They may be somewhat hopeful sources of help for the AF patient who wants to avoid toxic medicines, or the surgical procedures now being developed.

Aromas and Essences

There is healing in the aroma from balsam, fir, cedar, and pine trees. If you have AF and there are forests of these trees nearby, it would be well to avail yourself of the healing benefits from these aromas. While exercising among the trees, keep the head held high, the shoulders back and down, a smile on the face, and trust in God in the heart. Your condition will be improved, and your soul will be blessed.

Spikenard extract oil (called nard) is another aroma said to be of benefit to those suffering heart and artery disease. The nard oil is available from health food stores. The oil can be rubbed on the skin over the heart, or put on a handkerchief and sniffed frequently. One important benefit is deep breathing of this earthy fragrance.

Treatment of all other conditions

If there is hypertension, a supplement of magnesium can be very helpful in reducing blood pressure. There are many other remedies in the treatment of hypertension, and these should be sought. Our book *Natural Treatment for Hypertension* showing how to use all natural methods to treat high blood pressure should be carefully studied in order to bring the blood pressure down. If there is an overactive thyroid, the condition can be helped greatly by the use of natural means (See our books and counseling sheets on how to reduce the activity of the thyroid.).

Since a diabetic tendency, the presence of abdominal fat even in the absence of significant fat elsewhere, and other lifestyle factors that are known to increase heart disease; and since heart disease onset would seriously increase the complications of AF; we recommend prompt correction of these risks as much as can be done. Another risk for heart disease has been recently recognized—a high homocysteine level. The test for homocysteine is expensive but worth knowing. If it is not below 15, you should adopt a program of fasting one or two days a week, exercise, weight loss to the lowest healthful level, and a totally vegan diet without free sugars, free fats, or excessive salt (Ref. *International Journal of Epidemiology*, 24(4):704, 1995).

Prognosis

As long as ventricular function can be maintained at a good level, the prognosis is quite good for length of life and for freedom from difficulties with the atrial fibrillation. If the

left ventricle becomes hypertrophied (enlarged), the likelihood of getting complications of atrial fibrillation is increased. If the atria dilate above 40 millimeters as seen on the x-ray, the more over 40 millimeters the greater the likelihood of getting additional problems with the atrial fibrillation. Every 10 millimeter increase in size of the left atrium carries a doubling of the risk of stroke for men, and a 40% increase in risk for women (Ref. *Circulation* 92:835-84.1, 1995).

Drugs often used for atrial fibrillation

The use of any kind of pharmaceutical commits the AF patient to the continued care of a physician to monitor the drugs and try to minimize their serious toxicities. While studies show some advantages in those who do not make lifestyle changes, there have been no studies to show that medications improve mortality rates more than the use of alternative practices as outlined in the foregoing section. It is our belief that correcting all broken health laws, and instituting the natural remedies outlined in this booklet will result in grater benefits than can be achieved with pharmaceuticals.

Serious pro-arrhythmias occur in 8 to 16% of AF patients treated with antiarrhythmic pharmaceutical agents. These are toxic drugs. Every study has shown an increased mortality with long-term therapy with the class known as antiarrhythmic drugs, compared with survival of atrial fibrillation patients on no antiarrhythmic drug, albeit other pharmaceuticals were being used (Ref. *Internal Medicine News* page 25, January 1, 1996).

Amiodarone, an antiarrhythmic drug, is used in an attempt to restore normal rhythm of the heart and to keep it in normal rhythm after it has changed back to normal rhythm by electrical shock. There is a reaction between Amiodarone and warfarin which usually commits the physician to long-term anti-coagulation.

Digitalis is the most frequently prescribed drug in AF. It is used to slow the ventricular rate to below 90.

Warfarin (Dicoumerol, Coumadin, etc.) is used to prevent intravascular clotting. Its use requires that regular trips be made to the laboratory for a laboratory test to make certain the dosage is not too high or too low. Its use has been associated with serious bleeding in those who become injured, or those with hardening of the arteries. Patients with lone atrial fibrillation (no other disorder associated) should not receive either warfarin or aspirin anticoagulation (Ref. *Internal Medicine*, January 1996 21-34).

Older patients derive as much risk as benefit from warfarin. The SPAF-2 study was the source of this concept. A left atrial size even up to 60 millimeters is compatible with successful electrical shock conversion to, and maintenance of, normal rhythm, if the patient has been in AF for less than one year (Ref. *American Journal of Geriatric Cardiology* 4(5)6-19, 1995).

All medications without exception used for atrial fibrillation carry serious toxicities and some percentage mortality rate merely associated with their use, even though they may make the patient more comfortable. Their benefit in preventing some complications is

decreased by their serious toxic properties. In contradistinction, herbal and physiologic remedies, which may be just as effective in the treatment of atrial fibrillation, do not have any known associated mortality risk. The methods of treatment have all been used for hundreds of years and observed under many different kinds of circumstances. We believe they can be relied upon with as much confidence as drug medication. No form of treatment can give one a guarantee of freedom from some complication. The physically fit person with AF is at a great advantage over the out-of-shape person.

Some drugs may cause torsade, particularly in women. Quinidine is sometimes used for slowing the heart. Amiodarone has less of an incidence of torsade than does quinidine. Torsade is very often fatal. This abnormal rhythm is due to drugs and is characterized by a fast beating of the ventricle with much electrical disturbance, often ending in death.

Conversion attempts to restore normal rhythm

Sometimes doctors will try to restore the rhythm of the heart to a normal sinus rhythm by the use of electrical shocks, or the use of very powerful pharmacologic agents called antiarrhythmic drugs. Usually the most favorable time for conversion of the rhythm to normal is in the first few days or weeks after the atrial fibrillation begins, and most favorably before the first six months.

After six months the pattern of abnormal electrical conduction in the atria becomes quite established so that the channels are somewhat similar to water running down the middle of a gravel road. The longer the water runs down the middle of the road, the deeper the ditch will become. Something similar to that occurs in the heart so that the electrical conduction system of the heart becomes accustomed to the new chaotic pattern, and actually tends to stabilize the irregular pattern. One cardiologist stated it this way, "Atrial fibrillation begets atrial fibrillation." The longer it remains established, the more difficult it is to re-establish a normal rhythm.

Cardiologists who try to make a conversion to a normal rhythm usually limit attempts only to those having AF for six months or less, or sometimes even a year, but treatment is less likely to be successful in stopping the atrial fibrillation, or in maintaining a normal rhythm after the fibrillation is stopped.

The absence of safe and effective drug therapy in AF has led to the development of surgical or electrical attempts to treat AF. Surgical procedures such as those named CORRIDOR and MAZE are offered to patients. There are also procedures done with a catheter threaded into the heart through an artery. With the catheter an attempt is made to alter the electrical conduction of the heart. Some implanted atrial defibrillators or pacemakers have also been developed with varying degrees of success. Even if the open heart surgery or the catheter procedures are successful, the person is still committed to lifelong medications, and the only advantage may be abolishing the unpleasant symptoms.

Intra-atrial defibrillation is a new option which involves giving the heart a small shock by specially placed catheters in the right atrium and the coronary sinus (left atrium) with the

patient only lightly sedated. Virtually all of the several hundred patients in whom it has been used have converted to a normal rhythm (Ref. *Family Practice News*, page 7; December 15, 1995). The procedure is followed by the use of antiarrhythmic drugs.

If a person has a known clot in the atria, this represents a contraindication to attempts at converting the rhythm, since making the atria which have been simply trembling for a long time to be more efficient could dislodge a clot from the atria to go to the brain to cause a stroke. On the other hand, if the person has a history of clots in the past and currently has no clot, the cardiologists are more anxious to do a conversion attempt than in persons having no history of embolism. Anticoagulants will be used for a period of two to six weeks prior to the attempt at converting the rhythm in order to prevent the development of recent clots which may become detached with the restoration of normal heart rhythm. We would handle the patient just as carefully, but with the diligent use of the eight natural laws of health, and the multitude of natural remedies.

Fewer than 60% of AF patients remain in normal rhythm after they have been converted, even with the subsequent use of drugs (Ref. Gerald V. Maccarelli, M.D., *University of Texas Medical School at Houston from Conn's Current Therapy* 1395).

Strokes

If there is no other heart disease, the main clinical consequence of atrial fibrillation is stroke (Ref. *The Lancet* February 8, 1986, page 305). A four-fold increase in the incidence of stroke was found in the study published in *The Lancet*, and occurred on the average of 8.5 years after the diagnosis of atrial fibrillation was made. About one-third of those patients having strokes in atrial fibrillation die from the initial stroke. These statistics were obtained in patients who were not anticoagulated.

The presence of mitral stenosis increases the risk of strokes from embolism more than three-fold (Ref. *The New England Journal of Medicine* 306(17):1044-45, April 29, 1982).

Six percent of persons anticoagulated with atrial fibrillation have major non-fatal extra-cranial hemorrhages. While stroke is somewhat less frequent in the anticoagulated group, it does occur, and when it does it is more commonly hemorrhagic (due to bleeding into the brain tissue) than embolic (a clot from the heart), indicating that a blood vessel has ruptured in the brain, rather than that a clot has traveled from the heart to the brain.

In one study 23% of all strokes were felt to be caused by atrial fibrillation, and most of these patients were anticoagulated. If, however, in the Framingham study on 5184 men and women, followed for 30 years, the proportion of all strokes that occurred in those 5184 people which could be said to be due to AF was only 14.7%. The rate increased from 6.7% at age 50 to 36.2% at age 89 (Ref. *Arch. Int. Med.* 147:1561-4, September 1987).

People with atrial fibrillation are almost twice as likely to die from their strokes as persons who have strokes without atrial fibrillation. Neurologic damage is likely to be more severe and disabling in people with atrial fibrillation than in others. Consequently,

one with atrial fibrillation should take seriously all suggestions in this booklet to keep the likelihood low of getting a clot inside blood vessels. The most favorable methods are not pharmacologic anticoagulants, but control of lifestyle—staying well hydrated, exercising several days a week, eating a non-clot producing diet, and taking a few good herbs.

Patients who have no risk factors for stroke aside from atrial fibrillation and older age constitute a low risk group that can be managed without warfarin therapy. Some doctors suggest aspirin instead, but that suggestion has recently become controversial in AF. We suggest dietary and lifestyle control of the clotting mechanism, as well as the use of selected herbs. Twenty-five percent of patients who suffered a stroke related to AF died within 30 days compared to only 14% of those who did not have AF (Ref. 1996 *Medical Tribune News Service*). This points out how desirable it is for the AF patient to avoid getting a clot inside the heart. Do not allow your health program to diminish in quality.

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