

# THE AFIB REPORT

*Your Premier Information Resource for Lone Atrial Fibrillation!*

NUMBER 11

NOVEMBER 2001

1st YEAR



## **Editorial**

*We received 77 responses to the diet questionnaire. Of these 19 were from afibbers who had not participated in previous surveys. This increased the database available to investigate correlations between episode severity and such variables as age, years of LAF, and presence of amalgam fillings to 118. Not a vast number, but still enough to give some confidence in the results.*

*The same, unfortunately, cannot be said for the 77 replies concerning the diet questionnaire. The results are intriguing, but raise more questions than they answer. The number of replies is simply not sufficient to draw valid, statistically significant conclusions, especially when it comes to looking for diet-related differences between vagal, adrenergic, mixed and chronic afibbers.*

*I believe it would be worthwhile to follow up on these preliminary findings with a much larger survey, one that would also attempt to evaluate the efficacy of supplements. However, I just don't have the resources to undertake this project. To do it properly would require the services of a dietician/nutritionist and a competent medical statistician and would also require the gathering of data from at least 200 afibbers. A pretty major undertaking! If anyone knows of an organization or individual who might be interested in sponsoring such a study please let me know and I will approach them with an outline of what I would hope to accomplish.*

*Yours in health,  
Hans Larsen, Editor*

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## **SURVEY RESULTS – Part VIII**

The total sample of 118 consisted of 47 vagal afibbers, 23 adrenergic, 29 mixed, and 19 chronic. There were a total of 26 afibbers with blood type A, 28 with type O, 3 with type B, and 5 with type AB. Blood type A was most common among vagal afibbers (63%) while type O was most common among adrenergic (50%), mixed (58%) and chronic (71%).

### **Non-dietary correlations**

There was a strong overall correlation between time spent in fibrillation over the 6-month survey period and the number of episodes ( $p=0.0001$ ) and average duration of episodes ( $p=0.02$ ). The time spent in fibrillation for vagal afibbers was highly dependent on episode duration ( $p=0.01$ ) while time spent in fibrillation for adrenergic afibbers was highly dependent on the number of episodes ( $p=0.0001$ ). The previously observed increase in time spent in fibrillation with advancing age also held true with the larger sample ( $p=0.03$ ).

The correlation between the presence of amalgam (silver) dental fillings and length of time spent in fibrillation was confirmed in the larger sample. Afibbers without amalgams spent an average of 40 hours in fibrillation over the 6-month survey period while those with amalgam fillings spent 203 hours in afib. This difference was statistically significant ( $p=0.02$ ).

There was no indication that supplementing with magnesium or fish oil affected the severity of episodes. This is somewhat surprising as magnesium and fish oils have both been found effective in preventing other types of cardiac arrhythmias, especially ventricular arrhythmias. Perhaps it just goes to underscore that LAF truly is different from arrhythmias involving a diseased heart. Our findings, of course, do not detract from the other health benefits of magnesium and fish oil supplementation nor do they invalidate anecdotal evidence of their benefits. Nevertheless, magnesium and fish oils are clearly not “magic bullets” when it comes to preventing LAF episodes.

### **Effect of diet on episode frequency**

Vagal afibbers seemed to have fewer episodes if they avoided pork and omega-6 oils and emphasized fish and shellfish in their diet. Adrenergic afibbers had fewer episodes if they emphasized poultry and olive oil. Mixed afibbers had more episodes on a carbohydrate-rich diet, particularly one rich in whole wheat products, fruits and vegetables.

Afibbers with blood type A tended to have more episodes if they emphasized whole wheat products, fruits and vegetables, and in general, ate a high carbohydrate diet. Poultry consumption seemed to decrease the number of episodes. There were no obvious dietary triggers for blood type O.

### **Effect of diet on episode duration**

Vagal afibbers who consumed a lot of vegetables appeared to have longer episodes while adrenergic afibbers who ate a lot of legumes had shorter episodes.

Diet did not seem to affect episode duration for blood type A, but afibbers with type O tended to have shorter episodes with an increased intake of omega-6 oils.

### **Effect of diet on time spent in fibrillation**

There was a trend for adrenergic afibbers who emphasized poultry to spend less time in fibrillation while those emphasizing fruits and vegetables spend more. There were no clear dietary effects on time spent in fibrillation for vagal and mixed afibbers.

Diet did not seem to affect time spent in afib for blood type A, but afibbers with type O spent slightly longer in afib if they also had digestive problems.

### **Effect of diet on digestion**

There were no clear correlations between diet and digestive problems among vagal afibbers. A high intake of butter appeared to worsen digestion in adrenergic afibbers while a diet rich in omega-6 oils and arachidonic acid improved it. A high fat intake, particularly of the monounsaturated fats found in meat products, equated to digestive problems among mixed afibbers whereas a high carbohydrate intake was associated with improved digestion.

There was no correlation between blood type and digestive problems.

### **Summary of diet survey**

It is very difficult to give an overall interpretation of the diet survey results. All the correlations mentioned above had a statistical significance of less than 0.05, that is, the outcome has a less than 5% probability of being due to chance – so presumably they should be significant. Nevertheless, I am extremely hesitant to draw any firm conclusions from the survey. There simply were not enough responses and the questionnaire itself, in retrospect, also left a lot to be desired (standardized serving sizes, more categories, etc.).

It does seem though that pork, poultry, fish, vegetables, fruits and overall carbohydrate consumption could be important factors. It is conceivable that hormones in poultry could affect the autonomic nervous system, as could carbohydrates through the insulin spike caused by high glycemic index foods in particular. This, however, is pure speculation on my part and can only be confirmed or rejected via a much larger, better designed and professionally interpreted study.

## **SUPPLEMENTS FOR AFIBBERS – Part I**

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*To the best of my knowledge there have been no clinical trials or epidemiological studies to evaluate the use of pharmaceutical drugs or supplements in the prevention and cure of lone atrial fibrillation. Remarkable isn't it? Here is a debilitating disorder affecting thousands, if not millions, of people and no one - government laboratories, universities or pharmaceutical companies - has seen fit to try to come up with a solution! Granted there have been lots of studies concerning other cardiac arrhythmias and the use of antiarrhythmic drugs to treat them. Unfortunately, it is becoming increasingly clear that the results of these studies do not apply to the vast majority of lone afibbers whose hearts are free of underlying heart disease, but whose autonomic nervous systems are out of whack.*

*Several supplements have been proposed as an aid in preventing LAF. The suggestions to use these supplements are generally based on the facts that they either support good health in general, support heart and circulatory system health or have been found useful in the treatment of other more serious cardiac arrhythmias such as ventricular tachycardias. It is important to keep this in mind as we discuss the various supplements. To the best of my knowledge none of the supplements discussed here have been specifically evaluated for use in the prevention of LAF.*

### **A. Multivitamins**

An adequate daily intake of vitamins and minerals is essential for the maintenance of optimum general health. Recent research carried out by the U.S. Centers for Disease Control and Prevention showed that men and women who supplement daily with multivitamins and antioxidants (vitamins A, C and E) have a 15% lower risk of dying from heart disease or stroke than people who do not supplement[1]. Recommended daily intake is as follows (note that official RDA values are usually significantly lower):

#### Vitamins

Vitamin A (retinol) – 5000 IU  
Beta-carotene – 5000-25,000 IU \*  
Vitamin D – 400-800 IU  
Vitamin B1 (thiamine) – 10-50 mg  
Vitamin B2 (riboflavin) – 10-50 mg  
Vitamin B3 (niacin) – 10-100 mg  
Vitamin B5 (pantothenic acid) 25-100 mg  
Vitamin B6 (pyridoxine) 25-100 mg  
Choline – 10-100 mg  
Inositol – 10-100 mg  
Biotin – 10-300 micrograms  
Folic acid – 400-800 micrograms  
Vitamin B12 – 400-800 micrograms  
Bioflavonoids – 500-1000 mg

#### Essential Minerals

Calcium – 300-1000 mg  
Magnesium – 300-1000 mg  
Potassium – 200-500 mg  
Boron – 1-3 mg  
Copper – 1-2 mg  
Manganese – 10-15 mg

Silica – 1-25 mg  
Zinc – 15-45 mg  
Chromium – 200-400 micrograms  
Iodine – 50-150 micrograms  
Molybdenum – 10-25 micrograms  
Selenium – 100-200 micrograms  
Vanadium – 50-100 micrograms  
Iron - \*\*

\* preferably together with other carotenes such as lycopene, alpha-carotene, and zeaxanthin

\*\* men and most postmenopausal women rarely need supplemental iron

In addition you need to make sure that your intake of the two major antioxidants, vitamins C and E, is adequate. Supplementation with the water-soluble vitamin C should be spread throughout the day (500 mg of ascorbic acid or calcium ascorbate with each meal is a common recommendation) or use timed-release capsules. Vitamin E can be taken just once a day (400-800 IU per day of natural vitamin E [d-alpha-tocopherol or d-alpha-tocopherol acetate or succinate] is a common recommendation).

## **B. Vitamin C**

Vitamin C is a must for maintenance of the health of the heart and circulatory system. It lowers blood pressure and cholesterol levels, helps thin the blood and protect it against oxidation, and works in close synergism with vitamin E[2,3,5-9]. Vitamin C also helps prevent atherosclerosis by strengthening the artery walls through its participation in the synthesis of collagen, and by preventing the undesirable adhesion of white blood cells to damaged arteries[2,10,11]. An adequate intake is highly protective against stroke and heart attack[4,12,13].

A recent study shows that people who supplement with more than 700 mg/day of vitamin C have a 62 per cent lower risk of dying from heart disease than do people with a daily intake of 60 mg/day or less[13]. Supplementation with 2 grams/day has been found to reduce adhesion of monocytes (white blood cells) to the lining of blood vessels and thereby reduce the risk of atherosclerosis[10,11,14]. Vitamin C supplementation (2 grams/day) also effectively reverses the vasomotor dysfunction often found in patients with atherosclerosis[15]. Research carried out in Japan has shown that restenosis (reclosing of opened arteries) after angioplasty can be significantly reduced by supplementing with ascorbic acid (500 mg/day)[16].

Some very recent research raises the tantalizing possibility that vitamin C (calcium ascorbate) may directly help control certain types of cardiac arrhythmias. Researchers at the Cleveland Clinic have found that patients undergoing bypass surgery have a 50% less risk of going into arrhythmias after the operation if they supplement with 2 grams/day of calcium ascorbate the day prior to surgery and for 5 days following surgery. The researchers conclude that oxidative stress is behind the post-surgery arrhythmias and that vitamin C may be helpful in preventing these arrhythmias[17].

A scientific advisory panel to the U.S. Government sponsored Alliance for Aging Research has recommended that all healthy adults increase their vitamin C intake to 250-1000 mg/day[18]. Although there has been some concern that people suffering from hemochromatosis (a tendency to iron overload) may be sensitive to high dosages of vitamin C most researchers now agree that vitamin C is entirely safe even in daily quantities of 10 grams or more[19-21].

Because vitamin C is water-soluble it should be taken throughout the day (500 mg of ascorbic acid or calcium ascorbate with each meal is a common recommendation). An alternative approach is to use a time-release vitamin C capsule[22].

## **C. Vitamin E**

The evidence that vitamin E can prevent heart disease is now incontrovertible. In 1992 researchers at the University of Texas reported that it protects against atherosclerosis (hardening of the arteries) by preventing oxidation of the low density lipoprotein fraction of blood[23]. In 1993 researchers at the

Harvard Medical School released a study showing that vitamin E supplementation prevents heart disease. Nurses who took more than 100 IU/day of vitamin E for more than two years reduced their risk of heart disease by 41 per cent. A related study involving almost 40,000 male health professionals showed that men who supplemented with between 100 and 250 IU/day reduced their risk of heart disease by 37 per cent. Vitamin E is also highly beneficial in the treatment of intermittent claudication and recent research has confirmed its ability to prevent and, in some cases, reverse the progression of atherosclerosis[24-28].

Vitamin E is also highly effective in warding off a heart attack. Researchers at Cambridge University in England reported in 1996 that patients who had been diagnosed with coronary atherosclerosis could lower their risk of having a heart attack by 77 per cent by supplementing with 400 IU or 800 IU/day of natural source vitamin E[29]. Very recently researchers at the Toyama Medical University in Japan reported that patients with unstable angina could reduce their risk of angina attacks by a factor of six by supplementing with vitamin E (300 mg/day of alpha-tocopherol acetate)[30]. Supplementation has also been found useful in preventing complications after heart surgery and helps slow the restenosis (reblockage) of arteries subjected to angioplasty[26,27,31].

Italian researchers recently reported that older people with high blood levels of vitamin E have a 10 times lower risk of suffering a cardiovascular event than do people with lower levels[32].

It is clear that vitamin E is an extremely important factor in human health. Most studies involving vitamin E supplementation have used amounts between 100 IU/day and 800 IU/day and 400 IU/day is now considered to be a basic, safe and adequate dosage for an average, healthy person[33-37]. The optimum intake for an individual, however, depends on many factors including the intake of polyunsaturated fatty acids and the degree of exposure to air pollution and toxic chemicals. Higher dosages may be indicated for women suffering from premenstrual or menopausal problems, for smokers, for people engaging in heavy, outdoor exercise, and for people having a family history of cancer.

Large, well-controlled studies of vitamin E supplementation have shown it to be non-toxic in intakes as high as 3200 IU/day[36,38]. However, most researchers caution against daily intakes higher than 800-1200 IU/day for extended periods[33,34,37]. It is also recommended that the progression to a daily dose of 400 IU be gradual as should any decrease in intake. Some very recent research has shown that vitamin E in dosages higher than 1600 IU/day may have a prooxidative effect. However, this effect can be avoided by always taking adequate amounts of vitamin C when supplementing with vitamin E[39,40].

There are some cases in which high dosages (more than 30 IU/day) are contraindicated. Medical advice concerning dosage should be sought by individuals having high blood pressure, those taking anticoagulant drugs (Coumadin, warfarin) or having a tendency to prolonged bleeding, those having a vitamin K deficiency, and those suffering from rheumatic heart disease, an overactive thyroid or diabetes[31,33,36].

Inorganic iron (ferrous sulphate) destroys vitamin E and birth control pills deactivate it to some degree. So it should be taken with the main meal (to optimize absorption) and at least six hours before or after taking an iron supplement or a birth control pill.

Natural vitamin E comes in several forms; d-alpha-tocopherol (100 mg=149 IU), d-alpha-tocopherol acetate (100 mg=136 IU), and d-alpha-tocopherol succinate are the most common. The "d" designation in front indicates that the products are derived from natural sources such as vegetable oils or wheat germ. A prefix of "dl", such as dl-alpha-tocopherol, shows that the vitamin has been synthesized from a petroleum base. The synthetic form is far less effective than natural one. Recent research has also shown that expensive water-soluble forms are no more effective than the regular fat-soluble forms[31,41-44].

The benefits of an adequate vitamin E intake cannot be over-emphasized. Unfortunately, it is quite impossible to get enough from even the most well-balanced diet. To obtain a daily intake of 400 IU it would be necessary to consume 200 cups of brown rice, 10 cups of almonds, 80 cups of cooked spinach

or 12 tablespoons of unrefined, fresh wheat germ oil every day. Supplementation is clearly necessary. A daily intake of 400 IU/day of natural vitamin E combined with 250-1000 mg/day of vitamin C will help protect you against heart disease, cancer, and many other degenerative diseases.

#### **D. Coenzyme Q10**

Coenzyme Q10 has received particular attention in the prevention and treatment of various forms of cardiovascular disease. It is highly effective in preventing the oxidation of low-density lipoprotein cholesterol (LDL), which leads to atherosclerosis[45-48]. Several studies have shown that patients with congestive heart failure and other cardiovascular diseases have significantly lower levels of CoQ10 in their heart tissue than do healthy people and supplementation with as little as 100 mg/day has been shown to markedly improve their condition. It is now approved in Japan for the treatment of congestive heart failure[45,49-53].

Heart attacks and strokes produce a burst of free radicals (ischemia-reperfusion), which can result in extensive tissue damage. Patients with high CoQ10 levels suffer less damage from these events and Japanese researchers have found that supplementation prior to and immediately following open-heart surgery is highly beneficial in preventing reperfusion injury - a common complication in heart surgery[45,50,51,54,55]. Supplementation with CoQ10 has also been found beneficial in patients with chronic stable angina, mitral valve prolapse and irregular heart beat (arrhythmias)[45,49-51,56-58].

Coenzyme Q10 has also proven useful in the treatment of various cardiomyopathies (diseases of the heart muscle that reduce its pumping capacity). Studies have shown that supplementation with as little as 100 mg/day for 12 months results in better pumping capacity (increased ejection fraction), increased muscle strength and improved breathing[45,49,50,59].

Several studies indicate that CoQ10 may be beneficial in the treatment of hypertension (high blood pressure). A study of 109 patients with long-standing, essential hypertension, who were on antihypertensive drugs, concluded that supplementation with an average of 225 mg/day improved functional status, allowed about half the patients to discontinue most of their blood pressure medications and resulted in an average decrease of systolic blood pressure from 159 to 147 mm Hg and a diastolic pressure decrease from 94 to 85 mm Hg. Smaller, more recent Japanese studies have confirmed these findings[45,49-51,60-62].

Studies at the University of Ancona in Italy have provided evidence that CoQ10 supplementation reduces blood levels of epinephrine (adrenalin) and other catecholamines; this is believed to be partly responsible for the drop in blood pressure and may also explain why CoQ10 is effective in reducing the incidence of certain types of arrhythmias[45,63].

The body can synthesize coenzyme Q10 and it is also found in several dietary sources, notably organ meats. The level of CoQ10 in human organs peaks around the age of 20 years and then declines fairly rapidly. The decrease in CoQ10 concentration in the heart is particularly significant with a 77-year-old person having 57 per cent less in the heart muscle than a 20-year-old[64]. Some experts involved in CoQ10 research believe that many people, especially older people and people engaging in vigorous exercise may be deficient and may benefit from supplementation. The recommended daily dosage for health maintenance is 30 mg; however, considerably higher amounts are required in the treatment of the various diseases for which supplementation has been found beneficial[45,49,65,66]. It should be taken with a meal containing some fat or even better, in combination with soy or vegetable oil which enhances its absorption quite substantially[49]. CoQ10 supplements are readily absorbed by the body and no toxic effects have been reported for daily dosages as high as 300 mg. The safety of CoQ10, however, has not been established in pregnancy and lactation, so caution is advised here until more data becomes available[49,51].

#### **E. Alpha-lipoic acid**

Alpha-lipoic acid, also known as thioctic acid, is a highly effective, sulfur-containing antioxidant. It scavenges hydroxyl radicals, singlet oxygen and hypochlorous acid, can remove heavy metals including mercury by chelation, and regenerates other antioxidants like glutathione, vitamin C, coenzyme Q10 and

indirectly vitamin E. As if this were not enough, lipoic acid is also a vital cofactor in the Krebs cycle (citric acid cycle), the body's main process for converting carbohydrates into cellular energy (ATP). It is readily synthesized in the body and is well absorbed from the diet and intestines. Liver and yeast are especially good sources of lipoic acid[67].

Oxidative stress is intimately involved in the aging of the heart and results in significant DNA damage to heart cells. Researchers at the Linus Pauling Institute recently reported that supplementation with alpha-lipoic acid (in laboratory animals) reduces DNA damage and oxidative stress to the level observed in young animals[68]. German researchers have found that supplementation improves glucose utilization and cardiac autonomic function in diabetics[69-71]. Chinese researchers using animal models found that lipoic acid is able to protect the heart from free radical-induced electrophysiological abnormalities and decreases the incidence of arrhythmias[72].

Heart attacks and strokes involve a disruption of the oxygen supply to the affected areas. When the oxygen supply is restored a burst of free radicals is produced which can cause additional tissue damage (ischemia-reperfusion injury). Animal experiments have shown that alpha-lipoic acid is effective in preventing or ameliorating ischemia-reperfusion injury[67].

The sulfur group in alpha-lipoic acid also makes it an excellent mercury detoxifier. It is very safe and I take 100 mg with breakfast and lunch.

*That's it for part I of the supplements for afibbers. In part II we will cover magnesium, L-carnitine, cayenne pepper and other more exotic supplements. Please stay tuned!*

## **PERSONAL UPDATE ON ANTI-INFLAMMATION PROTOCOL**

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I began the anti-inflammation (Larsen) protocol described in the September 2001 issue of The AFIB Report on August 4<sup>th</sup>. I found it somewhat hard to completely eliminate all wheat and dairy products (except for butter), but eventually managed to do so once my wife found a great recipe for cookies made with quinoa flour! I now believe this was a very important first step. I also moderated my exercise program and increased my protein intake as per the blood type O diet. I had no problems taking the Moducare capsules on an empty stomach, but found the curcumin/bromelain combination to be quite irritating to the stomach so I switched to taking them with meals. I had originally included the herb Boswellia in my program, but found it gave me a headache so I discontinued it after 2 days.

Throughout the protocol I measured my pulse rate, number of ectopic beats over a 5-minute period, heart rate variability, and autonomic nervous system balance daily using a fingertip pulse monitor and software program developed by the HeartMath Institute in California. I won't go into the details of the procedure at this time, but will cover it in detail in a future issue of The AFIB Report. Suffice it to say that on August 3<sup>rd</sup> I counted 15 ectopic beats (over 5 minutes) and my maximum power spectrum value was 156 milliseconds squared/Hertz – normal is about 8 to 30. So in other words, my heart's performance was rather chaotic.

A month later on September 3<sup>rd</sup> things had changed quite remarkably. I recorded no ectopic beats and the maximum power spectrum value had decreased to 12. I also felt great, but the balance between the sympathetic (adrenergic) and parasympathetic branches was still a bit unusual.

On September 19<sup>th</sup> I reduced my Moducare intake to one capsule three times a day instead of the two capsules three times a day I had been on since I began the protocol. Coincidence or not, I don't know, but early in the morning on September 21<sup>st</sup> I experienced my first LAF episode in 2 months. All veteran afibbers will know what a huge disappointment that was! I carried on with the protocol continuing to take three Moducare capsules a day, but reducing the curcumin/bromelain intake to just once a day (at lunch).

It is now 5 weeks since my last episode and I am feeling extremely well. I am regularly clocking zero ectopic beats, my maximum power spectrum value is around 28 – within the normal range – and my autonomic nervous system balance is perfectly normal. As the saying goes, a picture is worth a thousand words, so to illustrate my progress I have included the tracings of my August 3<sup>rd</sup> test and those of today (October 24<sup>th</sup>) in the attached Appendix A. I am sure you will notice the difference. My plan now is to continue with the modified anti-inflammation program until I have gone 3 months without an episode and then re-evaluate the situation.

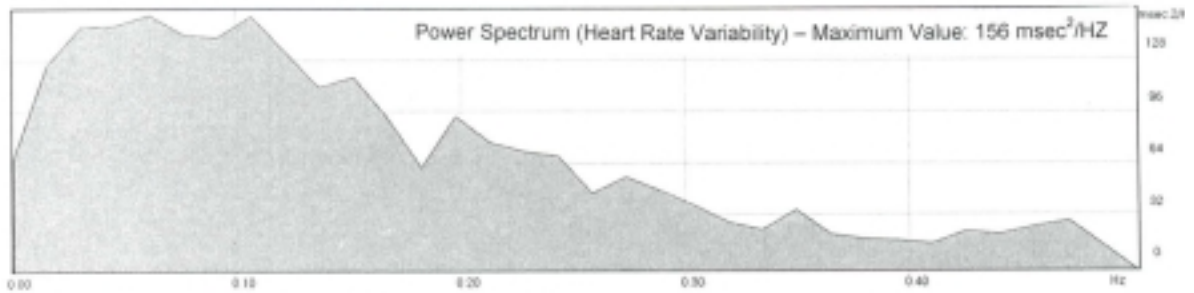
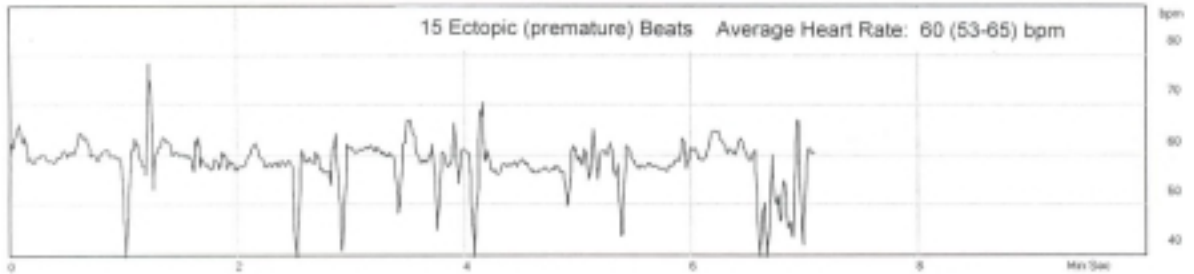
Please, if you try the protocol, let me know how you make out.

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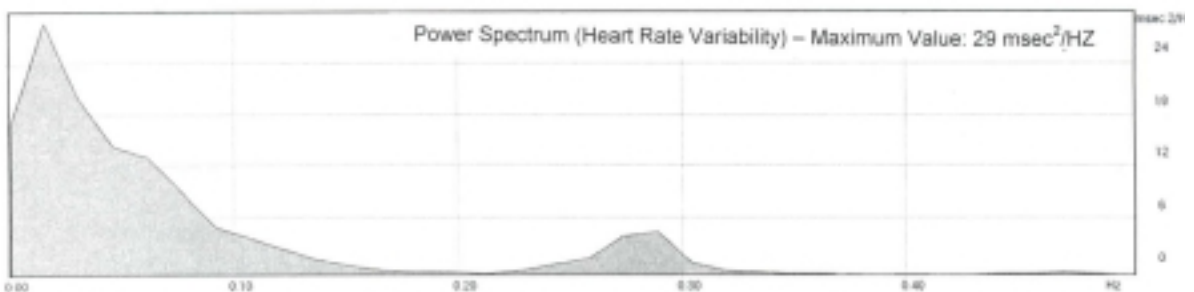
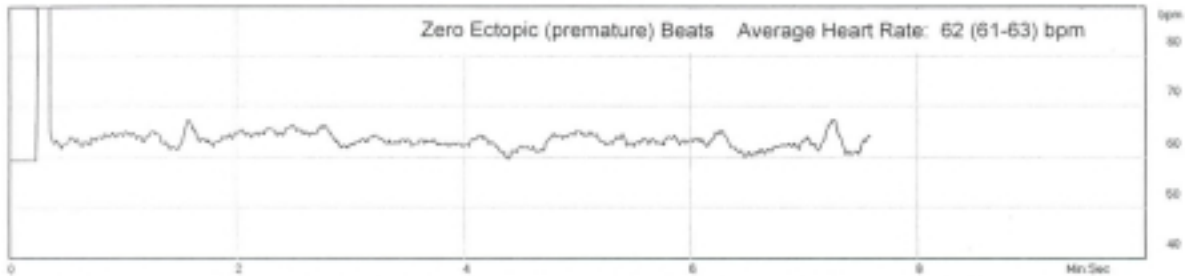
THE AFIB REPORT does not provide medical advice. Do not attempt self-diagnosis or self-medication based on our reports. Please consult your healthcare provider if you are interested in following up on the information presented.



Before Anti-inflammatory Protocol (August 3, 2001)



After Anti-inflammatory Protocol (October 24, 2001)



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