Institute for Christian Teaching
Education Department
General Conference of Seventh-day Adventists

CONTEMPORARY INTERNAL MEDICINE RESEARCH AND ELLEN G. WHITE

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Prepared for the
20th International Faith and Learning Seminar
held at
Loma Linda University
Loma Linda, California, USA
June 15-27, 1997

Contemporary Internal Medicine Research and the Writings of Ellen G. White

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October 5, 1997

INTRODUCTION

Loma Linda University School of Medicine is unique as a medical school in the United States. This uniqueness lies in its heritage as a school: It is the only overtly Christian medical school in the United States at this time (1997). Another aspect of its uniqueness is Loma Linda University's motto, "To make man whole": Treating the whole person has been its emphasis in the teaching and training of health professionals. A third aspect is its interest in the health principles and counsels given to the Seventh-day Adventist Church by Ellen G. White.

Ellen G. Harmon (later Ellen G. White) was born in 1827 and died in 1915. At the age of nine she sustained a head injury that left her unconscious, then semiconscious for three weeks. After that accident, unable to go back to school, she completed only three years of formal education. A great religious awakening swept through North America in the early 1800's. She became part of its Millerite movement during her teen years. The Millerites believed that the Second Coming of Jesus was to occur on October 22, 1844. After the "Great Disappointment," seeing that Jesus did not come on that date, many left the Millerites.

Why had He not returned! Ellen Harmon was one of the few who continued to search for an answer, restudying the Bible prophecies which had seemed to predict that date as the day Jesus would return to earth. Late in 1844, Ellen Harmon received a "vision," which she shared with this small group of fellow Bible students. They believed the vision could only have been from God. Until her death in 1915, she continued to receive many other visions, covering all aspects of Christian living, including healthful living. She penned over 100,000 pages in longhand (about 25 million words), writing in areas in which she had no formal education or training. Originally shy and frail, she became a pioneer, a strong leader instrumental in organizing what is now the Seventh-day Adventist Church, a church today numbering over eight million people worldwide.

On June 23, 1863, just two weeks after the Seventh-day Adventist Church had been formally organized, she received her first vision on health principles. This was at a time when many of the church's members, including her own husband, were suffering from a multitude of illnesses. In this vision, broad principles of healthful living were presented to her, which she wrote out and distributed in 1864. She later read works of other health reformers of her day, including Larkin B. Coles, Dio Lewis, and Horace Mann. The White family also visited the hydropathy facilities in Dansville, New York, run by James C. Jackson (Numbers 48-101). Yet her counsels stood in contrast to the majority of the medical practices of her time. She often opposed the position of mainstream physicians of her day, siding instead with the "health reformers." However, on some issues she sided with the physicians. Her choices were due to the direction she received from her visions. Medical science has since verified that she demonstrated a unique ability to extract the best health counsels of her time.

Ellen G. White wrote counsels on such varied topics as health, education, history, evangelism, pastoring, ministering, parenting—even a book of counsels to editors. Some of her writings on health include a thirty-two page account of her 1863 vision entitled *Health* (1864); the books *How to Live* (1865) and *Ministry of Healing* (1905); and many shorter segments

included in various other books such as her nine volumes of *Testimonies to the Church.* In broad terms, the health principles in her writings cover the following areas:

(1) **A balanced diet**. Principles for healthful eating are best expressed in her book *Counsels on Diet and Foods.* It includes many of her writings on nutrition, which were excerpted and compiled into this single volume. It was used as a textbook for students of dietetics at the College of Medical Evangelists (now known as Loma Linda University). Dr. Clive M. McCay, who was for years a professor of nutrition at Cornell University, regarded this volume as a classic, unequaled in the breadth and balance of its counsels.

(2) **Natural remedies.** She recommended hydrotherapy, pure drinking water, fresh air, rest, sunshine, exercise, temperance (moderation in the use or practice of the good), abstinence (abstaining from harmful practices or substances such as alcohol, tobacco, tea, coffee, non-medicinal drugs), and trust in God. Heart disease, cancer, high blood pressure, diabetes, and many other diseases are largely due to ignoring these simple essentials for a physically, mentally, and spiritually healthy lifestyle:

(3) **Preventive medicine.** She wrote that by practicing wise eating habits and a healthful lifestyle one could avoid illness. She emphasized that the body is the "temple of the Holy Spirit" (I Cor. 6:19, 20).

(4) **Mental Health.** In an era long before the mental health treatment advances we take for granted today, she taught that there is an interdependent relationship between mental and physical health, and because each exerts an influence on the other, it is essential to preserve the health of both mind and body.

(5) **Spiritual Health.** Not only did she see a mental-physical relationship; she also believed that the body, mind, emotions, social nature, and spirit are an indivisible unity—that each part of the whole must be treated with care, none can be ignored or abused without there being negative consequences. She stressed that because God communicates to us through the brain, He gives us the highest possible spiritual life—which comes from a relationship with Him—when the body and brain are in the best possible physical health (Schaefer 99-129).

Loma Linda University was founded in 1905 as the College of Medical Evangelists. From its very beginnings, Loma Linda University's active interest in health principles and practices has been in large part due to the influence of Ellen G. White. She was also instrumental in the founding of this health institution.

Ellen White enunciated health practices that can prevent or even treat certain chronic diseases. A comparison of her statements with the findings of contemporary Internal Medicine research reaffirms the soundness of her counsels. Though she was not trained as a health professional, she was a century ahead of her time in correctly choosing or rejecting the practices and treatments commonly recommended by physicians in her era. Her safe walk through the minefield of medical misinformation surrounding her can be appreciated only when we compare her health counsels, written from 1863 to 1913, with the conflicting, often useless or ridiculous, and even deadly medical practices of her day.

Today her health counsels sound like common sense. They sound like just an echo of the discoveries of modern medical science. The reverse is true. It is the discoveries of modern medicine which have caught up, or are beginning to catch up, with the farsighted wisdom revealed in her writings. Much that medical students and physicians are learning and reading today in the current medical literature concerning the prevention and treatment of chronic diseases has previously been stated by Ellen G. White. This should encourage us to continue to read, follow, and prescribe her health counsels, particularly as they relate to chronic disease.

Her writings are the framework in which I have decided to practice Internal Medicine. This framework has stood the test of time and continues to be timely.

In this paper we will consider first the statistics regarding the most common illnesses in the Internal Medicine practice—namely, hypertension and diabetes. Secondly, we will touch briefly on the history of these two diseases, in order to show that even though Ellen G. White did not use these terms in her writings, she gave counsels which are today primary means of preventing and treating these two diseases. Lastly, we will review the current medical literature regarding the treatment and prevention of these two diseases and compare this with what Ellen G. White wrote.

Because diabetes and hypertension are major risk factors in the development of coronary heart disease, I will also include references to CHD. In the medical literature I will be looking specifically at *essential hypertension*—which comprises over 95% of all hypertensives and which can be treated with lifestyle changes and medications, if necessary. However secondary hypertension usually requires surgical intervention, and cannot be treated merely with lifestyle changes. I will also be looking at *non-insulin-dependent diabetes mellitus (NIDDM) or Type II diabetes mellitus,* because, again a major part of the treatment includes lifestyle changes, whereas insulin-dependent diabetes mellitus or Type I requires insulin injections.

STATISTICS

According to the latest [1995] official U.S. government statistics, in 1993 there were 7,813,000 diabetics; 21,255,000 Americans with heart disease; and 27,549,000 Americans with high blood pressure. Other highly prevalent disorders include arthritis (32,642,000); chronic sinusitis (37,293,000); hay fever or allergic rhinitis without asthma (23,743,000); asthma (13,074,000); and migraine headaches (11,023,000) (Cherner, Table 11.7.1).[1]

The two diagnoses most frequently rendered by Internal Medicine physicians in the United States in 1991 were (1) essential hypertension and (2) diabetes mellitus. The next five diagnoses were related to respiratory disorders (e.g., chronic sinusitis, acute upper respiratory infections, bronchitis, acute pharyngitis, and asthma). The eighth most common diagnosis in the Internist's office was "other and unspecified disorders of the back." The ninth most common diagnosis was cardiac dysrhythmias, and the tenth most common was "other forms of chronic ischemic heart disease." (Schappert 59).

These statistics did not change much when investigated in 1995 by Scott-Levin Associates (Montague 18).[2]

What did change is the definition of hypertension, which was tightened with *The Fifth Report of the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure (JNC V)* in 1993 (154-183). This report also estimated that there are 50 million Americans who have high blood pressure (156)

EARLY VIEWS ON DIABETES AND HYPERTENSION

Diabetes is a wonderful affection, not very frequent among men, being a melting

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[1] The Cherner almanac is a convenient quarterly source of select current statistics. See source: U.S. Department of Health and Human Services, Vital and Health Statistics: Current Estimates from the National Health Interview Survey, 1992, 1993 and 1994. Ser. 10, nos. 186, 190, 193. National Center for Health Statistics, Hyattsville, MD.

[2] These statistics were originally published in Levin's monthly *Physician Drug and Diagnosis Audit* (Newtown [PA]) and quoted by Jim Montague in *Hospitals and Health Networks.*

> down of the flesh and limbs into urine. Its cause is of a cold and humid nature, as in dropsy. The course is the common one, namely, the kidneys and bladder; for the patients never stop making water, but the flow is incessant, as if from the opening of aqueducts. The nature of the disease, then, is chronic, and it takes a long period to form; but the patient is short-lived, if the constitution of the disease be completely established; for the melting is rapid, the death speedy. Moreover, life is disgusting and painful; thirst unquenchable; excessive drinking, which, however, is disproportionate to the large quantity of urine, for more urine is passed; and one cannot stop them from either drinking or making water. Or if for the time they abstain from drinking, their mouths become parched and their bodies dry; the viscera seem as if scorched up; they are affected with nausea, restlessness, and a burning thirst; and at no distant term they expire.

This description provided by Aretaeus the Cappadocian in the second century A. D. demonstrates that diabetes was a known entity for many centuries (Galloway frontispiece). However, its connection with the pancreas was not clearly recognized until the end of the 19th century. And insulin (secreted by the pancreas) was not isolated until 1921 (Castiglioni 784). The physiology of diabetes and its relation to other organs continues to be researched to this day.

The history of high blood pressure is short: It wasn't until the turn of the twentieth century, when the sphygmomanometer was introduced, that high blood pressure was recognized as a medical illness. However, little was done for treatment except to prescribe that the patient rest and avoid sudden strains and changes in temperature (Emerson 723). In the minds of physicians, even as late as 1945, alcohol and tobacco played no role in causing or aggravating hypertension (Johnson 147).

Ellen G. White did not use the medical terms "diabetes" or "high blood pressure" or "coronary heart disease," since she was a person without medical training. Additionally, these terms were not well known until the twentieth century. Therefore I searched for statements about these diseases as they relate to the language of her times. For example, we find her using the term "feverish blood" or "diseased blood" or "healthy / good blood" or "poisoned blood."

Given the prevalence of these diseases and because hypertension and diabetes are major risk factors for ischemic cardiac disease, I wish to focus now on hypertension, diabetes mellitus, and other cardiac diseases and to see what Ellen G. White might say on the prevention and/or treatment of these disorders. Then I will compare her statements with what the current medical literature is demonstrating.

GENERAL PREVENTION AND TREATMENT RECOMMENDATIONS

E. G. White:

Over 120 years ago E. G. White wrote about the importance of cardiovascular health:

> 1876: If the physical heart is healthy, the blood that is sent from it through the system is also healthy, but if this fountain [of blood]* is impure [unhealthy because of elevated glucose, high blood pressure, high cholesterol, tobacco poisons, etc.] the whole organism becomes diseased by the poison of the vital fluid. (*4T* 210)

Current research:

Nutritional guidelines: In July of 1980 the US Department of Agriculture together with the US Department of Health, Education, and Welfare published their nutritional guidelines for

* Author's comments are in brackets [ ].

Americans (1). Its most recent update was in 1995. It encourages Americans to:

1) Eat a variety of foods.
2) Maintain ideal body weight.
3) Avoid too much saturated fat and cholesterol.
4) Eat foods with adequate starch and fiber.
5) Avoid too much sugar.
6) Avoid too much salt.
7) Drink only in moderation (if at all).

Hypertension guidelines: In 1993 the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure issued its fifth report (154-183). These are the state-of-the-art guidelines issued by the National Heart, Lung, and Blood Institute (which in 1972 started the National High Blood Pressure Education Program [NHBPEP]). In this latest report, as in those before it, the initial management of high blood pressure must be life-style modifications, namely: reduce excess weight, drink little or no alcohol, exercise regularly, eat less sodium (e.g., salt), and stop smoking.

Diabetes guidelines: Diet, weight reduction, and exercise are the first steps in the management and treatment of non-insulin-dependent diabetes mellitus, according to current recommendations such as those found in a 1996 issue of *Annals of Internal Medicine* (Henry and Genuth 175-177).

I will now consider certain of these general recommendations, and other aspects of the prevention and treatment of chronic diseases, in more detail. In the following sections I have chosen selected citations from current medical research to illustrate the parallels between recent medical findings and the 19th century writings of Ellen G. White:

REDUCTION OF OBESITY

E. G. White:

Writing over 130 years ago about the serious health risks of being overweight—including systemic inflammation, a precursor of disease—E.G. White said:

> 1868: You have flesh, but it is not good material. You are worse off for this amount of flesh. If you should each come down to a more spare diet, which would take from you twenty-five or thirty pounds of your gross flesh, you would be much less liable to disease [a benefit of losing weight] . . . Your *systems* are in a state of *inflammation*, prepared to take on disease. (*2T* 61) (Italics added.)

An important, recent finding of the Physicians' Health Study was that a higher level of C-reactive protein (a marker for *systemic inflammation*) at baseline predicted a higher risk of future myocardial infarctions (MI) and stroke. This was reported in the April 3, 1997, lead article of the *New England Journal of Medicine* (Ridker et al. 973-979).

E. G. White continues:

> 1868: You are *liable to acute attacks* of disease *and to sudden death* [which could include coronary artery disease and sudden death by MI or stroke] because you do not possess the strength of constitution to rally and resist disease. (*2T* 61) (Italics added.)
>
> 1870: The digestive organs should never be burdened with a quantity or quality of food which it will tax the system to appropriate. All that is taken into the stomach, above what the system can use to convert into good blood, *clogs the*

> *machinery*; for it cannot be made into either flesh or blood, and its presence burdens the liver, and produces a morbid condition of the system. [Atherosclerosis is an example of this *clogging* of the machinery.] (*CDF* 103) (Italics added.)
>
> 1895: By taking too much food, we not only improvidently waste the blessings of God, provided for the necessities of nature, but do great injury to the whole system. We defile the temple of God; it is weakened and crippled. . . . (*CDF* 131).
>
> 1895: Were all men acquainted with the living, human machinery, they would not be guilty of doing this, unless, indeed they loved self-indulgence so well that they would continue their suicidal course and die a premature death, or live for years a burden to themselves and to their friends. [Here she seems to be referring to those cardiac cripples or stroke "victims" who *because of prior lifestyle* are unable to care for their own needs and are a burden to others.] (*CDF* 131)
>
> 1864: Indulging in eating too frequently and in too large quantities, overtaxes the digestive organs and produces a feverish state of the system. The blood becomes impure, and then diseases of various kinds occur. (*CDF* 304)
>
> 1880: Overeating is the sin of this age. (*CDF* 133)

Compare this with Healy, speaking on the health hazards of wealth: "In *The Affluent Society* (1958), economist John Kenneth Galbraith noted that 'More die in the United States of too much food than of too little.' Galbraith's observation is even more true today than it was in the 1950's [or the 1880s!]" (641).

Current research:

A special issue of the October 1993 journal *Annals of Internal Medicine* was devoted to the topic of methods of voluntary weight loss and control. This series of articles reports extensive medical evidence that obesity is associated with an increased risk for insulin resistance, non-insulin-dependent diabetes mellitus, dyslipidemia, hypertension, and cardiovascular disease, as well as other illnesses (Danford and Fletcher 641-770). It also presents data confirming that weight loss reduces the health hazards associated with obesity.

A 1996 *Annals of Internal Medicine* article gives a Consensus Statement on the current recommendations in the metabolic control of non-insulin-dependent diabetes mellitus. The third, fourth, and fifth recommendations of the panel of experts who drafted the statement are that comprehensive treatment and care should:

3- "include some degree of comprehensive and repetitive instruction about diet and exercise. . . ."

4- provide "intensive management of hyperglycemia . . . instituted early and should initially emphasize diet and exercise therapy. . . ."

5- provide "comprehensive care [which] must also include aggressive attempts to reduce cardiovascular risk factors (particularly hypertension, smoking, dyslipidemia, and obesity) . . ." (Henry and Genuth 175).

The focus of a 1996 article by Tan and Nelson in *Mayo Clinic Proceedings* is the pharmacologic treatment of Type II diabetes mellitus. Yet they begin by saying "diet and exercise are the cornerstone for the management of non-insulin-dependent diabetes mellitus" (763-768).

"Obesity markedly enhances the development of Type II diabetes. Moreover, it enhances

the cardiovascular risk associated with other risk factors, such as hypertension and dyslipidemia" (Bakris, Weir, and Sowers 33S-46S). This paper also states that weight reduction is the single most important non-pharmacologic therapy in the treatment of hypertension.

SECOND-HAND TOBACCO SMOKE

The health risks of tobacco are so well established that I will not cite any of the medical literature nor any of E. G. White's comments on smoking itself. Just how farsighted were her views on smoking (written in the last half of the 19th century) will become "fresh air" clear as we note her warnings on the dangers of second-hand smoke. She gave these warnings decades before the early "Blow some my way!" cigarette ads and a century before the medical community suspected that second-hand smoke could cause disease and death. First, a few of her comments on environmental tobacco smoke (ETS), then the current medical literature:

E. G. White:

> 1864: Tobacco is a poison of the most deceitful and malignant kind, having an exciting, then a paralyzing influence upon the nerves of the body. It is all the more dangerous because its effects upon the system are so slow and at first scarcely perceivable. (*CH* 84)
>
> 1913: The infant lungs suffer, and become diseased by inhaling the atmosphere of a room poisoned by the tobacco-user's tainted breath. Many infants are poisoned beyond remedy by sleeping in beds with their tobacco-using fathers. By inhaling the poisonous tobacco effluvia, which is thrown from the lungs and pores of the skin, the system of the infant is filled with the poison. While it acts upon some as a slow poison, and affects the brain, heart, liver and lungs, and they waste away and fade gradually, upon others it has a more direct influence, causing spasms, fits, paralysis, palsy, and sudden death . . . They died martyrs to the filthy lust of tobacco. Their parents ignorantly . . . kill their infant children by the disgusting poison. Every exhalation of the lungs of the tobacco slave, poisons the air about him. (*2SM* 467)
>
> 1875: It is unpleasant, if not dangerous, to remain in a railroad car or in a crowded room that is not thoroughly ventilated, where the atmosphere is impregnated with the properties of liquor and tobacco. (*3T* 562)
>
> 1905: It is unpleasant and unhealthful to remain in a railroad car or in a room where the atmosphere is laden with the fumes of liquor and tobacco. (*MH* 328)

Current research:

Over 80 years later a 1992 *JAMA* [The Journal of the American Medical Association] article reviewed nine epidemiological studies (and "numerous" experimental studies) which evaluate the association between environmental tobacco smoke (ETS) and increased risk of heart disease (Steenland 94-99). Seven of the studies show a positive association [increased risk]; one study shows a positive association for women but not for men; and one study shows a negative association between ETS and heart disease. The article also notes that nonsmokers who are exposed to high levels of second-hand smoke are at much higher risk of developing heart disease than lung disease.

In fact, 70% of all deaths due to environmental tobacco smoke (ETS) are cardiac deaths and ETS causes 37,000 coronary deaths per year, according to a 1995 article in the *Archives of Internal Medicine* (Kritz, Schmid, and Sinzinger 1942-48).

A 1993 article in the *International Journal of Cardiology* looked at a large number of

epidemiological, clinical, and pathology studies to determine whether smoking causes cardiovascular damage (Leone 113-117). Leone concludes that both active and passive tobacco smoke cause atherosclerotic coronary alterations, focal myocardial lesions, and arrhythmias. He further concludes that we may argue as to the amount of effect that ETS may have on the heart, but that we cannot deny the evidence that damage does occur.

A 1994 paper in the *Journal of the American College of Cardiology* reviews new studies and concludes that passive smoking increases the coronary death rate by 20 to 70% among U.S. "never smokers" [those who have never smoked] (Wells 546-54).

Research reported in a 1995 *JAMA* paper studied passive smoking to determine the mechanisms by which it causes damage. It concluded that passive smoking 1) reduces the blood's ability to deliver oxygen and to make ATP [adenosine triphosphate]; 2) increases platelet activity; 3) accelerates atherosclerotic lesions; and 4) increases tissue damage following ischemia or myocardial infarction (Glantz and Parmley, 1047-53).

Passive smoking can cause arterial damage even in young adults, according to research reported in a 1996 *New England Journal of Medicine* article, which found that passive smoking impairs the normal endothelium-dependent arterial dilation that should occur in healthy young adults under stress-test situations (Celermajer et al. 150-54).

Passive smokers are at higher risk of blood clots. (Smoking makes blood platelets abnormally sticky.) In *Thrombosis Research*, a 1996 article reported platelet dysfunction in passive smokers but not in nonexposed individuals (Schmid et al. 451-460). The greater the exposure, the closer the passive smokers approximated the platelet dysfunction of smokers. Smoke increases platelet thromboxane production, which makes the platelets more prone to thrombosis [blood clots, which can cause "sudden death" (2SM 467)].

DIET AND FIBER

E. G. White:

> 1905: The grains, with fruits, nuts, and vegetables, contain all the nutritive properties necessary to make good blood. (*MH* 316)
>
> 1905: Grains, fruits, nuts, and vegetables constitute the diet chosen for us by the Creator. (*MH* 296)
>
> 1900: The Lord will teach many in all parts of the world to combine fruits, grains, and vegetables into foods that will sustain life and will not bring disease. (*7T* 124)

Current research:

A 1997 issue of *Internal Medicine News* reports that "a diet high in fruits, vegetables and low-fat dairy products reduces blood pressure, according to the results of the Dietary Approaches to Stop Hypertension (DASH) Trial" (Jancin, DASH Trial 1-2). The DASH study was published in the April 17, 1997, issue of *New England Journal of Medicine* (Appel et al. 1117-24). This clinical trial very carefully studied the effect of several dietary patterns on blood pressure in 459 individuals. As the intervention, three different groups were given three different diets for eight weeks. The control diet was the typical American diet; the second diet was high in fruits and vegetables; the third diet was high in fruits and vegetables and had low-fat dairy foods, and reduced saturated fat, total fat, and cholesterol (combination diet). All meals were prepared in research kitchens with strict protocols and knowledge of the nutrients in each diet.

The fruits and vegetables diet significantly lowered systolic blood pressure by 2.8 mm Hg ($p<0.001$). It lowered diastolic blood pressure by 1.1 mm Hg (not statistically significant).

During the study the control [typical American] diet reduced blood pressure only minimally.

The combination diet *lowered* systolic by 5.5 and diastolic blood pressure (DBP) by 3.0 mm Hg *more* than did the control diet. The drop was most significant in the hypertensive patients at baseline (11.4 SBD and 5.5 mm Hg DBP).

A 1996 *JAMA* paper reported a six-year cohort study of over 51,000 men. This Health Professionals Follow-up Study looked at their vegetable, fruit, and cereal dietary fiber intake and at their fatal coronary events and nonfatal myocardial infarctions. The study found that those with the highest fiber intake had only half the expected risk of fatal coronary events (RR [relative risk] of 0.45), and only two thirds the expected risk of nonfatal myocardial infarction (RR 0.65) as compared to those who consumed the lowest amount of fiber. Cereal fiber was found to be more protective (had a stronger statistical association) than did fiber from vegetables or fruit. Other known coronary risk factors were controlled for (Rimm, Ascherio et al 447-51).

In 1996 the *British Medical Journal* reported on a 20-to-26 year cohort study of 2,748 men and 2,385 women in Finland: Those individuals who consumed higher levels of dietary flavonoids (water-soluble anti-oxidants found in fruits and vegetables; also found in red wine, purple grape juice, and tea) had decreased mortality from all causes. The study found that of those with the highest dietary flavonoid intake, the women had only two thirds the expected risk of mortality from all causes (RR [relative risk] of 0.69), and the men had only three fourths the expected risk (RR 0.76), as compared to those who consumed the lowest amount of dietary flavonoids. The women who consumed the most dietary flavonoids also had only half the risk of coronary heart disease mortality (RR 0.54) as compared to those who consumed the least (Knekt, Jarvinen, Raunanen, and Maatela 478-81).

A 1996 report in *Circulation* describes part of the trial for the Cancer Prevention Study in Finland. This article reports on 21,930 smoking men who were receiving daily supplementation of alpha-tocopherol and/or beta-carotene in a randomized, double-blind, placebo-controlled substudy as part of the Cancer Prevention Study. Dietary fiber intake was monitored in all men. Here again, an association was found between dietary fiber and risk for coronary death: Those men who consumed the most dietary fiber had two-thirds the risk of coronary death as compared to those who consumed the lowest amounts of fiber (Pietinen et al. 2720-27).

Part of the Nurses' Health Study (published in a 1997 *JAMA*) is looking at 65,173 women ages 40-65. In this particular report an association between dietary fiber and non-insulin-dependant diabetes mellitus (NIDDM) in women is established. Those women with the highest amount of fiber in their diet had only three quarters the risk (RR 0.72) of having non-insulin-dependent diabetes mellitus as compared to those with the lowest fiber consumption. The association was strongest in those who obtained their fiber from cereal grains as opposed to other sources. This relationship held even after controlling for well-known risk factors for NIDDM such as age, obesity, and family history (Salmeron et al 472-77).

EXERCISE / WALKING

E. G. White:

> 1870: The more we exercise, the better will be the circulation of the blood . . . Those who accustom themselves to proper exercise in the open air will generally have a good and vigorous circulation. (*2T* 525-26)
>
> 1872: Thousands are sick and dying around us who might get well and live if they would. . . . Neglecting to exercise the entire body, or a portion of it, will bring on morbid conditions. (*3T* 76)

> 1875: If physical exercise were combined with mental exertion, the blood would be quickened in its circulation, the action of the heart would be more perfect, impure matter would be thrown off, and new life and vigor would be experienced in every part of the body. (*3T* 490)

Current research:

The January 15, 1997 issue of *Internal Medicine News* (33) Jancin reported that "women who walk at least 3 hours per week have a sharply lower risk of acute MI [myocardial infarction] and stroke than do sedentary women. And the faster they walk, the lower their risk, according to the latest findings from the ongoing Nurses' Health Study." During the eight-year follow-up, the brisk walking group had only about half the risk of both coronary heart disease and stroke as compared to the sedentary women.

A study reported in a 1995 issue of *Archives of Internal Medicine* suggests that the risk of myocardial infarction among post-menopausal women was reduced by about 50% with modest leisure-time energy expenditures (equivalent to 30 to 45 minutes of walking three times a week). This is after taking into account confounding factors and known coronary risk factors such as smoking and cholesterol (Lemaitre, Heckbert, Psaty, and Siscovick 2302-08).

A 1996 summary of the treatment options for non-insulin-dependent diabetes mellitus given in *Mayo Clinic Proceedings* begins by saying that "diet and exercise are the cornerstone for the management of' non-insulin dependent-diabetes mellitus (Tan and Nelson 763-68).

SALT

E. G. White:

> 1901: At one time Doctor _____ tried to teach our family to cook according to health reform, as he viewed it, without salt or anything else to season the food. Well, I determined to try it, but I became so reduced in strength that I had to make a change; and a different policy was entered upon with great success. I tell you this because I know you are in positive danger. Food should be prepared in such a way that it will be nourishing. It should not be robbed of that which the system needs. . . .
>
> I use some salt, and always have, because from the light given me by God, this article, in the place of being deleterious, is actually essential for the blood. The whys and wherefores of this I know not, but I give you the instruction as it is given me. (*CDF* 344)
>
> 1883: Food should be prepared in as simple a manner as possible, free from condiments and spices, and even from an undue amount of salt. (*CDF* 340)
>
> 1909: Food should be prepared in such a way that it will be appetizing as well as nourishing. It should not be robbed of that which the system needs. I use some salt, and always have, because salt, instead of being deleterious, is actually essential for the blood. (*9T* 162)

Current research:

Of late the scientific community has been somewhat confused as to what to do with the salt issue. Numerous studies demonstrate that sodium restriction lowers the rates of high blood pressure and, by inference, those of heart disease. A recent review in the *Journal of the American College of Nutrition* again emphasizes that lowering the consumption of NaCl [sodium chloride—table salt] is a standard part of the non-pharmacologic treatment of hypertension (Haddy and Pamnani 428-38). Based on this and a multitude of other studies, it is common

practice to tell hypertensive patients not to add salt to their food. The common complaint is that food tastes terrible, even though many of the patients later say that they have gotten accustomed to it.

However, some recent research has thrown these studies into question. In 1995 Alderman, Madhaven, and others reported a link between low-sodium intake and *increased* cardiovascular morbidity and mortality in patients with mild to moderate hypertension (1144-52). A recent subgroup analysis from that study demonstrates an inverse relationship between low sodium intake and increased risk for myocardial infarction (Alderman, Sealey, et al 682S-86S). That is, the lower the salt intake, the higher the MI risk.

Without understanding the medical reasons, Ellen White was given insight into this issue and wrote that while an undue amount of salt should not be consumed, *some* salt should be used in the diet. Many health reformers in her day were promoting a *no*-salt diet. She saw this was an extreme to be avoided.

MIND-BODY CONNECTIONS

Even though not yet explicitly included in the current recommendations for hypertension, the medical literature is beginning to point to the harmful effect of mental stress on physical health, particularly the health of the cardiovascular system. I anticipate that standard treatment in the future will highlight the importance of a healthy relationship between the mind and the body, which would tend to reduce the risk of hypertension and coronary artery disease.

In the 19th century Ellen G. White wrote about the relationship between mental and physical health. First, let us look at some of her insights and then we will review some of the medical research.

E. G. White:

> 1905: The relation that exists between the mind and the body is very intimate. When one is affected, the other sympathizes. The condition of the mind affects the health to a far greater degree than many realize. Many of the diseases from which men suffer are the result of mental depression. Grief, anxiety, discontent, remorse, distrust, all tend to break down the life forces and to invite decay and death. . . .
>
> Courage, hope, faith, sympathy, love, promote health and prolong life. A contented mind, a cheerful spirit, is health to the body and strength to the soul. 'A merry [rejoicing] heart doeth good like a medicine' (Prov. 17:22).
>
> In the treatment of the sick the effect of mental influence should not be overlooked. (*MH* 241)
>
> 1876: The sympathy which exists between the mind and the body is very great. When one is affected, the other responds. The condition of the mind has much to do with the health of the physical system. If the mind is free and happy, under a consciousness of rightdoing and a sense of satisfaction in causing happiness to others, it will create a cheerfulness that will react upon the whole system, causing a freer circulation of the blood and a toning up of the entire body. (*4T* 60)
>
> 1875: Between the mind and the body there is a mysterious and wonderful relation. They react upon each other. (*3T* 485)
>
> 1872: Great wisdom is needed by the physicians at the Institute in order to cure the body through the mind. But few realize the power that the mind has over

> the body. A great deal of the sickness which afflicts humanity has its origin in the mind and can only be cured by restoring the mind to health. (*3T* 184)

Current research:

A 1995 article in *Mayo Clinic Proceedings* reported on the medical consequences of psychological distress in patients with coronary artery disease. The study measured psychological distress with the SCL-90R (Symptoms Checklist-90—Revised), which is a well-validated, self-reporting questionnaire that measures general psychological distress and symptoms such as somatization, depression, anxiety, and hostility. This study reported that patients who had suffered a first cardiac disease event (myocardial infarction or out-of-hospital cardiac arrest) *who also had increased SCL-90R scores (indicating they were under more distress)* were found to have about 2.5 times the risk of being rehospitalized for cardiac symptoms within six months of the first event (Allison et al. 734-42). These individuals with high scores/high distress also had a greater than five-fold increase in the risk of experiencing a new cardiac event or cardiac death within six months of the first event.

In 1996 the *Archives of Internal Medicine* reported a meta-analysis of 23 randomized controlled trials that evaluated the impact of psychosocial interventions in the rehabilitation of cardiac patients (Linden, Stossel, and Maurice 745-52). During the two-year study, those individuals who initially received psychosocial interventions (some brief, some extended, and quite diverse in nature, but globally classified as stress management interventions) had only a 59% risk of mortality as compared to those who had no intervention, and mortality was even less in those studies looking at patients for longer than two years. The individuals who received the initial psychosocial intervention also had only a 54% risk of recurrence of cardiac disease as compared to those who had no intervention. In other words, the group who had no intervention had a 70% increased risk of mortality (odds ratio of 1.70). The group who had no intervention had an 84% increased risk of recurrence of cardiac disease (odds ratio of 1.84). [Odds ratios approximate risk ratios, when incidence rate is small. In terms of relative risk, RR is the risk of a group that is exposed compared to a group that is not exposed. So if the RR is 2, that means the risk of the exposed group is twice that of the group that is not exposed.]

A 1996 paper in *Mayo Clinic Proceedings* reported that hostile patients who were to undergo a percutaneous transluminal coronary angioplasty (PTCA) [balloon dilation of stenosed coronary arteries] had a higher rate of re-stenosis [re-blocking of the treated artery] after the procedure than the non-hostile patients (Goodman et al 729-34). Patients who were to have a PTCA underwent a structured interview in which hostility components were measured. Those individuals with high-hostility ratings were almost 2.5 times more likely to have re-stenosis of their PTCA than those with low-hostility scores. It should be noted, however, that this was a study with a small sample size (41 patients).

The following three papers specifically looked at the study subjects in a prospective fashion, meaning that the patients were followed over time, *before* the development of the specific illness. In 1996 two papers from *Circulation* addressed depression and subsequent myocardial infarction:

The first one was the report of a 27-year cohort study from Denmark (Barefoot and Schroll 1976-80). It found that those individuals with high scores for depression on the MMPI at the beginning of the study had a 70% higher probability for having an acute myocardial infarction (RR of 1.70) and a 59% increased risk of death from all causes (RR of 1.59). This was after controlling for traditional cardiac risk factors.

The second one is part of the Baltimore Epidemiologic Catchment Area Study. In this

study (Pratt et al 3123-29), one group of subjects with no history of cardiac disease was followed for 13 years. At baseline entry into the study, those individuals who had a history of a major depressive episode or dysphoria (two weeks of sadness) demonstrated a marked increase in the risk of a myocardial infarction during the 13 years of the study: The risk doubled with a history of dysphoria and more that quadrupled (RR 4.54) when there was a history of a major depressive disorder.

The third prospective study, the National Health and Nutrition Examination Survey I Epidemiologic Follow-up Study (reported in a 1997 issue of *Archives of Family Medicine*), considered the symptoms of anxiety and depression as risk factors for hypertension (Jonas, Franks, and Ingram 44-48). The investigators found that individuals who reported high levels of anxiety or depressive symptoms (but less than the full-blown clinical depression syndrome) at the beginning of the study were at elevated risk for developing hypertension nine years later. The rate of hypertension nearly doubled in those individuals as compared to those with low levels of anxiety and depressive symptoms.

FOR FURTHER RESEARCH

E. G. White:

One must also realize that there are topics about which E. G. White wrote that have not yet been fully supported by current medical science. For example, she encouraged total abstinence from alcoholic beverages and the avoidance of coffee and tea, which she saw as harmful and stimulating substances.

> 1903: The pure juice of the grape, free from fermentation, is a wholesome drink. But many of the alcoholic drinks which are now so largely consumed contain death-dealing potions. (*CDF* 436)
>
> 1905: In relation to tea, coffee, tobacco, and alcoholic drinks, the only safe course is to touch not, taste not, handle not. The tendency of tea, coffee, and similar drinks is in the same direction as that of alcoholic liquor and tobacco, and in some cases the habit is as difficult to break as it is for the drunkard to give up intoxicants. [In my medical practice I hear a majority of my patients tell me they find it harder to quit smoking or to give up their morning cup of coffee than they did to stop drinking.] (*MH* 335)

Current research:

Recently there have been reports that one to two glasses of wine are protective for the heart (e.g., Rimm, Klatsky, Grobbee, and Stampfer 731-36; and Pearson 3023-25). This is in direct contradiction to what Ellen G. White wrote.

Of note in regards to the use of alcohol for the prevention of coronary heart disease: at the 1997 American College of Cardiology annual meetings a presentation reported that purple grape juice contains a phytochemical that is believed to be the cardioprotective agent in red wine (Jancin, Platelet Activity 4). This presentation referenced a prior 1995 study in *Circulation* (Demrow, Slane, and Folts 1182-88). Thus, it may not be the alcohol in the wine that is beneficial for health but rather this cardioprotective phytochemical, which can be found in unfermented grape juice. Time will tell us whether Ellen White was correct in her statements about alcohol, coffee, and tea. Additional research should be done in these areas.

CONCLUSION

In summary, Ellen G. White played a vital and crucial role in the initiation and

development of Loma Linda University (formerly College of Medical Evangelists). A review of her writings on health has demonstrated their relevance for the modern physician.

In the United States the major illnesses that are seen in Internal Medicine offices are hypertension (first), diabetes mellitus (second), and coronary heart diseases (ninth and tenth).

In reviewing what the current Internal Medicine literature has to say in regards to the treatment and prevention of these major illnesses, one can see that from 1863 to the early 1900s Ellen G. White wrote with farsighted accuracy, and wisdom beyond her education, about these same issues. I believe it is accurate to say that, even if modern research is slow to discover all that God would have us do to "prosper and be in health," the physician who practices medicine within the framework of her writings will never be behind the times.

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KEY TO ABBREVIATIONS OF E. G. WHITE BOOK TITLES

CDF—Counsels on Diet and Foods

CH—Counsels on Health

MH—The Ministry of Healing

2SM—Selected Messages, Book 2

1T—Testimonies for the Church, Volume 1 (2T etc., for Volumes 2-9)