

Health and Healing Lesson 12 2Q 2010

Nutrition and the Bible

SABBATH

Read memory text – thoughts?

What does it mean to do something to the glory of God?

Jesus loves those who represent the Father, and John could talk of the Father's love as no other of the disciples could. He revealed to his fellow men that which he felt in his own soul, **representing in his character the attributes of God. The glory of the Lord was expressed in his face.** The beauty of holiness which had transformed him **shone with a Christlike radiance from his countenance.** In adoration and love he beheld the Saviour until likeness to Christ and fellowship with Him became his one desire, and in **his character was reflected the character of his Master.** {AA 545.2}

Thoughts?

Are we to reveal God in our lives? What does that look like? Would that include, in addition to loving kindness, if possible physical vitality and mental acuity?

SUNDAY

What was the original diet? Does the original diet have anything to do with bringing glory to God?

In whose image were we made? Are we to live lives that reveal God?

The Bible tells us this earth is a theater to the universe – 1Cor 4:9, what are they learning from this theater?

What was the purpose in the creation of man?

How do we glorify God by our diet?

What lesson would be taught, if we had other options for food, yet slaughtered animals to eat?

What fuel did God design our bodies to run upon? What if you drive a car designed to run upon unleaded fuel and you use diesel?

What happens to our bodies when we use the wrong fuel?

Do we have problems in our society from eating wrong fuel?

1976-80 – 15% of Americans obese

1988-1994- 25% of Americans obese

1999-2000 – 32% of Americans obese

The incidence of diabetes in Americans 30-39 has increased 70% and 1 in 3 diabetics don't know there are diabetics.

MONDAY

Read first paragraph, "As Christians..." thoughts? Was the first sin a temptation of appetite? "Hey Eve, this food is so tasty, so delicious, so scrumptious that it makes all the other fruit in the garden taste nasty"? Was it hunger that caused Eve to take the fruit? Was it appetite at all?

"Eve believed the words of Satan, and **the belief of that falsehood in regard to God's character, changed the condition and character of both herself and husband.** They were changed from good and obedient children into transgressors..." RH, January 5, 1886 par. 8

What was the real temptation? To doubt God's goodness, to believe lies about God and then take what was not theirs to take, in order to do what? To taste a new delicacy, to satisfy hunger or appetite? Or to attain power or ability?

Was the behavior of taking the fruit the primary problem or the secondary problem? Was the primary problem the believing lies about God and rebelling in heart, which was subsequently manifested in the behavior?

This is the problem with the Penal model of thinking, it always focuses on behavior and fails to see the real problem and therefore confuses.

Did Adam and Eve, in the Garden, have a problem with appetite? No! but since the fall do we? Why?

Is there anything beyond nutritional value in maintaining a healthy diet? What about gaining self-mastery, self-governance, learning to develop prefrontal cortex control over the limbic system?

How did the diet of mankind change after the flood? Could it be a contributing factor in the shortening of lifespan?

How do you understand the idea of clean and unclean meats? What is the difference? Is there an underlying principle? Is it merely Jewish or are there still such things today?

Do the foods we eat really matter? Can they affect mood and brain chemistry?

Adapted from: http://www.scielo.br/scielo.php?pid=S0100-879X1998001200002&script=sci_arttext&tlng=en

Neurotransmitters and neuromodulators are basic units of chemical communication within the nervous system. These include a variety of phenethylamines and their derivatives (dopamine, norepinephrine, epinephrine, tyramine, octopamine, and tetrahydroisoquinolines), indoleamines (serotonin, melatonin, and tryptamine), cholinergics (acetylcholine and choline), amino acids and their derivatives (glutamate, aspartate, glycine, taurine, histamine and gamma-amino butyric acid), nucleosides (adenosine and inosine), hormones (prostaglandins, corticosteroids, estrogen,

testosterone, thyroid hormone and many others), and peptides (enkephalin, endorphin, substance P, cholecystokinin, somatostatin, cyclo (His-Pro), thyrotropin releasing hormone and many others).

Most of these are synthesized *de novo* using precursors provided by the food that we eat and thus are under direct influence of the diet.

A carbohydrate-rich/protein-poor diet increases and a protein-rich diet decreases brain serotonin synthesis.

The synthesis of serotonin in the brain is limited by the availability of tryptophan. The large neutral amino acids (LNAA), tryptophan, valine, leucine, isoleucine, methionine, phenylalanine, and tyrosine, share the same transport carrier across the blood-brain barrier (4). At physiologic blood amino acid concentrations, there is competition for available carrier sites. Therefore, the transport of blood tryptophan into the brain is proportional to the ratio of its concentration to that of the sum total of other LNAA (4).

Consumption of a protein-rich meal raises the blood level of many amino acids. Tryptophan is one of the least common amino acids in dietary protein. **Therefore, a protein-rich meal contributes proportionately more competing LNAAs than tryptophan, resulting in reduced entry of tryptophan into the brain and reduced serotonin synthesis.**

Conversely, a carbohydrate-rich meal can also alter blood amino acid levels (5). This effect is mediated by the action of insulin, which promotes the uptake of most amino acids by muscle, which accounts for >45% of lean body weight. Muscle metabolizes branch-chain amino acids, thereby lowering their concentration in the blood. Plasma tryptophan levels are unaltered by carbohydrate consumption, and insulin does not promote the net uptake of tryptophan into muscle because this amino acid is largely bound to low-affinity, high-capacity sites on albumin. Normally, 75 to 85% of plasma tryptophan is bound to albumin. When insulin is secreted, the plasma levels

of nonesterified fatty acids (NEFAs) fall because insulin promotes uptake of NEFAs by adipocytes. NEFAs also are adsorbed on circulating albumin, thereby increasing the number of sites available on albumin for binding tryptophan. This rise in bound tryptophan compensates for the slight fall in plasma free tryptophan caused by insulin-mediated uptake of amino acids by muscle. The total amount of tryptophan in plasma (bound plus free) determines the rate of transport of tryptophan into the brain because the affinity of the transport system for tryptophan is much greater than the affinity of albumin for tryptophan. Thus, ingestion of a high-carbohydrate/low-protein meal facilitates entry of tryptophan into the brain (6).

However, obesity as well as chronic stress, including worshipping a wrathful god construct, alters this dynamic as it increases insulin resistance. With insulin resistant the fat and muscle cells don't respond normally and this results in less tryptophan transport to the brain and another factor in mood and anxiety disorders.

Once in the brain, tryptophan undergoes a series of enzymatic reactions, resulting in the synthesis of the neurotransmitter serotonin. The first (and the rate-limiting) step in the conversion of tryptophan to serotonin is hydroxylation of tryptophan by the enzyme tryptophan hydroxylase, a low-affinity ($K_m = 0.4 \text{ mM}$) enzyme that is abundant in the brain. Accordingly, whenever the brain tryptophan level rises, more serotonin is produced (7).

Serotonin

Serotonin is a chemical the brain produces from tryptophan. Where do we get tryptophan? From the protein in our food. Brain serotonin controls many different types of bodily functions, including appetite, body temperature, libido, and mood, to name a few. Some of the foods rich in serotonin and tryptophan banana, pineapple, plum, nuts, milk, and turkey.

Cholecystokinin

Cholecystokinin (CCK) is found naturally in our brain and gut. Soon after we begin to eat, CCK begins to be released from our gut. When the blood level of CCK rises to a critical level, we feel satiated and stop eating (12). The release of CCK after satiety has been achieved is terminated by the action of trypsin on gut cells (13,14). For that reason there is now substantial interest in developing CCK as a drug for appetite control. Unfortunately, large doses of CCK act on sites in the brain that control anxiety and panic behavior (15). One solution to this problem might be the use of food rich in CCK. Unfortunately, to date we know of no such natural food. This does not mean CCK does not exist in natural foods, only that no one has taken time to screen common foods for this peptide. Meanwhile, there are data to suggest that the use of certain foods to increase blood CCK levels may be possible. For example, many animal and human studies show that a diet containing soy protein, a rich source of trypsin inhibitor, may increase circulating level of CCK. Actually, any food rich in trypsin inhibitors should result in increased CCK secretion and early satiety.

The relationship between food and mood in seemingly normal individuals is not a simple one but instead depends on the time of day, the type and macronutrient composition of food, the amount of food consumed, and the age and dietary history of the subject (39). For example, while skipping breakfast impairs cognitive performance (40), a larger-than-normal breakfast improves recall performance but impairs concentration (41). Furthermore, changes in the macronutrient composition of breakfast have differential effects on mood (42). For example, changes in mood have been produced most effectively by raising brain serotonin levels by administering tryptophan or by supplementing a carbohydrate-rich/protein-poor diet with tryptophan (43)

References

4. Pardridge WM (1977). Regulation of amino acid availability to the brain. In: Wurtman RJ & Wurtman JJ (Editors), *Nutrition and the Brain*. Raven Press, New York, 141-204.

5. Adibi SA, Morse EL & Amin PM (1975). Role of insulin and glucose in the induction of hypoaminoacidemia in man: Studies in normal, juvenile diabetic, and insulinoma patients. *Journal of Laboratory and Clinical Medicine*, 86: 395-409.
6. Fernstrom JD & Wurtman RJ (1971). Brain serotonin content: Increase following ingestion of carbohydrate diet. *Science*, 174: 1023-1025.
7. Fernstrom JD & Wurtman RJ (1972). Brain serotonin content: Physiological regulation by plasma neutral amino acids. *Science*, 178: 414-416.
8. Beas-Zarate C, del Angel Meza AR, Morales-Villagran A & Feria
12. French SJ, Murray B, Rumsey RDE, Sepple CP & Read NW (1993). Is cholecystokinin a satiety hormone? Correlations of plasma cholecystokinin with hunger, satiety and gastric emptying in normal volunteers. *Appetite*, 21: 95-104.
13. Calam J, Bojarski JC & Springer CJ (1987). Raw soya-bean flour increases cholecystokinin release in man. *British Journal of Nutrition*, 58: 175-179.
14. Watanabe SI, Takeuchi T & Chey WY (1992). Mediation of trypsin inhibitor-induced pancreatic hypersecretion by secretin and cholecystokinin in rats. *Gastroenterology*, 102: 621-628.
39. Rogers PJ & Lloyd HM (1994). Nutrition and mental performance. *Proceedings of the Nutrition Society*, 53: 443-456.
40. Pollitt E, Liebel RL & Greenfield D (1981). Brief fasting, stress and cognition in children. *American Journal of Clinical Nutrition*, 34: 1526-1533.
41. Michaud C, Musse N, Nicolas JP & Mejan L (1991). Effects of breakfast size on short-term memory concentration and blood glucose. *Journal of Adolescent Health*, 12: 53-57.
42. Lloyd HM, Rogers PJ, Hedderley DI & Walker AF (1996). Acute effects on mood and cognitive performance of breakfasts differing in fat and carbohydrate content. *Appetite*, 27: 151-164.

TUESDAY

Read first paragraph, “As we...” thoughts?

Have you ever tried to share healthful living ideas with non SDAs?
 What kind of responses have you experienced? What were barriers?
 What truth did the non-SDAs bring to the discussion?

Is it true that the ceremonial laws were done away with at the Cross?

How has this been twisted by Satan to damage believers? Has the termination of the ceremonial system changed the laws of health? If something was unhealthy for the human body before Christ died is it healthy for the human body today? Or is it still unhealthy?

And if our bodies are diseased does that impact the functioning of the brain and if our brain doesn't work as well does that impair our ability to discern truth?

Accept him whose faith is weak, without passing judgment on disputable matters. ² One man's faith allows him to eat everything, but another man, whose faith is weak, eats only vegetables. ³ The man who eats everything must not look down on him who does not, and the man who does not eat everything must not condemn the man who does, for God has accepted him. Romans 14:1-3

Thoughts about this?

Here is my paraphrase:

Romans 14:1 The young in Christ often have weak confidence in God and limited understanding of his methods, so don't be critical with them and don't argue over trivial matters. ² Consider foods offered to idols: A mature Christian, whose trust in God and understanding of his methods is strong, recognizes an idol is just a piece of wood or stone and cannot affect the nutrition of the meat offered to it – so he will eat the meat without worry. But the immature Christian, whose trust in God and understanding of his methods is weak, continues to struggle with misconceptions about idols and thinks that maybe the idol has the power to contaminate the meat offered to it, and thus eats only the vegetables that were not set before the idol. ³ The mature man, who eats everything that is healthy, must not demean and make fun of the man still struggling with fear and insecurity over what he eats; and the man afraid to eat all healthy foods, must not condemn as wicked the man who eats everything healthy, for he is at peace with God.

When we eat food what actually happens to the food once it enters our body? It gets digested, meaning, we get energy, but do we get more than energy? We get the building blocks of our bodies.

Omega three fatty acids rather than being burned as energy are assimilated into our body, they become part of neuronal membranes and keep them healthy. Likewise the food we eat becomes the tissues of our bodies. Does this give us insight into

what Christ meant when He said, “unless you eat my flesh and drink my blood you have no part with me”?

How are we to assimilate Christ?

Are there examples in Scripture of eating truth but it turning sour?

Then the voice that I had heard from heaven spoke to me once more: “Go, take the scroll that lies open in the hand of the angel who is standing on the sea and on the land.”

⁹ So I went to the angel and asked him to give me the little scroll. He said to me, “Take it and eat it. It will turn your stomach sour, but in your mouth it will be as sweet as honey.”

¹⁰ I took the little scroll from the angel’s hand and ate it. It tasted as sweet as honey in my mouth, but when I had eaten it, my stomach turned sour. Revelation 10:8-10

What does this mean, sweet to eat but sour in stomach? The little book is Daniel, sweet to eat was the initial understanding of the prophecies, but the sour was the Great Disappointment. Why did it turn sour? They misunderstood its true meaning.

Does what a person believes have anything to do with what kind of impact the Bible has on them? Can a person study the Bible with the wrong mindset and actually be harmed by it?

What about with actual physical food, can our beliefs alter our experience with food? Any examples?

Television watching alters our perceptions, values and beliefs.

- Before the introduction of American TV into Fiji there was zero eating disorders, after the introduction of American TV eating disorders skyrocketed to 15% in adolescent girls and the more TV exposure the higher the risk
- The number one factor contributing to the likelihood a teen will drink or smoke is seeing it done in movies or on TV

Does TV affect the food choices people make? Absolutely!

WEDNESDAY

Read second paragraph, “Just because...” thoughts?

Have you ever experienced a cultural caste system of dietary purity? Those with the least animal products are more righteous than those with the most? Why is this defective thinking?

But what is the truth about vegetarian diet? Does it matter? Are there advantages?

What are healthy foods?

- Spinach
- Blueberries
- Pomegranate
- Nuts (almonds, pecans, walnuts)
- Omega 3 fatty acids (flax, chia, cold water fish oil)
- Whole grains (oats, flax, barley)
- Olive oil

THURSDAY

Does being an Adventist make a difference in health?

Adventist Health Study 1 (AHS-1)

An additional study (1974–1988) involved approximately 34,000 Californian Adventists over 25 years of age. Unlike the mortality study, the purpose was to find out which components of the Adventist lifestyle give protection against disease.

The data from the study have been studied for more than a decade and the findings are numerous – linking diet to cancer^[2] and coronary heart disease.^{[3][4]}

Specifically^[1]

- On average Adventist men live 7.3 years longer and Adventist women live 4.4 years longer than other Californians.
- Five simple health behaviors promoted by the Seventh-day Adventist Church for more than 100 years (not smoking, eating a plant based diet, eating nuts several times per week, regular exercise and maintaining normal body weight) increase life span up to 10 years.
- Increasing consumption of red and white meat was associated with an increase of colon cancer.
- Eating legumes was protective for colon cancer.
- Eating nuts several times a week reduces the risk of heart attack by up to 50%.
- Eating whole meal bread instead of white bread reduced non-fatal heart attack risk by 45%.
- Drinking 5 or more glasses of water a day may reduce heart disease by 50%.
- Men who had a high consumption of tomatoes reduced their risk of prostate cancer by 40%.
- Drinking soy milk more than once daily may reduce prostate cancer by 70%.

FRIDAY

Questions 1-4 read and discuss

1. [^] [^] [^] [^] [^] "Religion and Health Study Progress". *Adventist Health Studies Report 2008 V: 5*. 2008.
2. [^] ["The Adventist Health Study: findings for cancer"](#). Loma Linda University. Retrieved 2008-05-31.
3. [^] ["The Adventist Health Study: findings for coronary heart disease"](#). Loma Linda University. Retrieved 2008-05-31.
4. [^] ["The Adventist Health Study: findings for nuts"](#). Loma Linda University. Retrieved 2008-05-31.