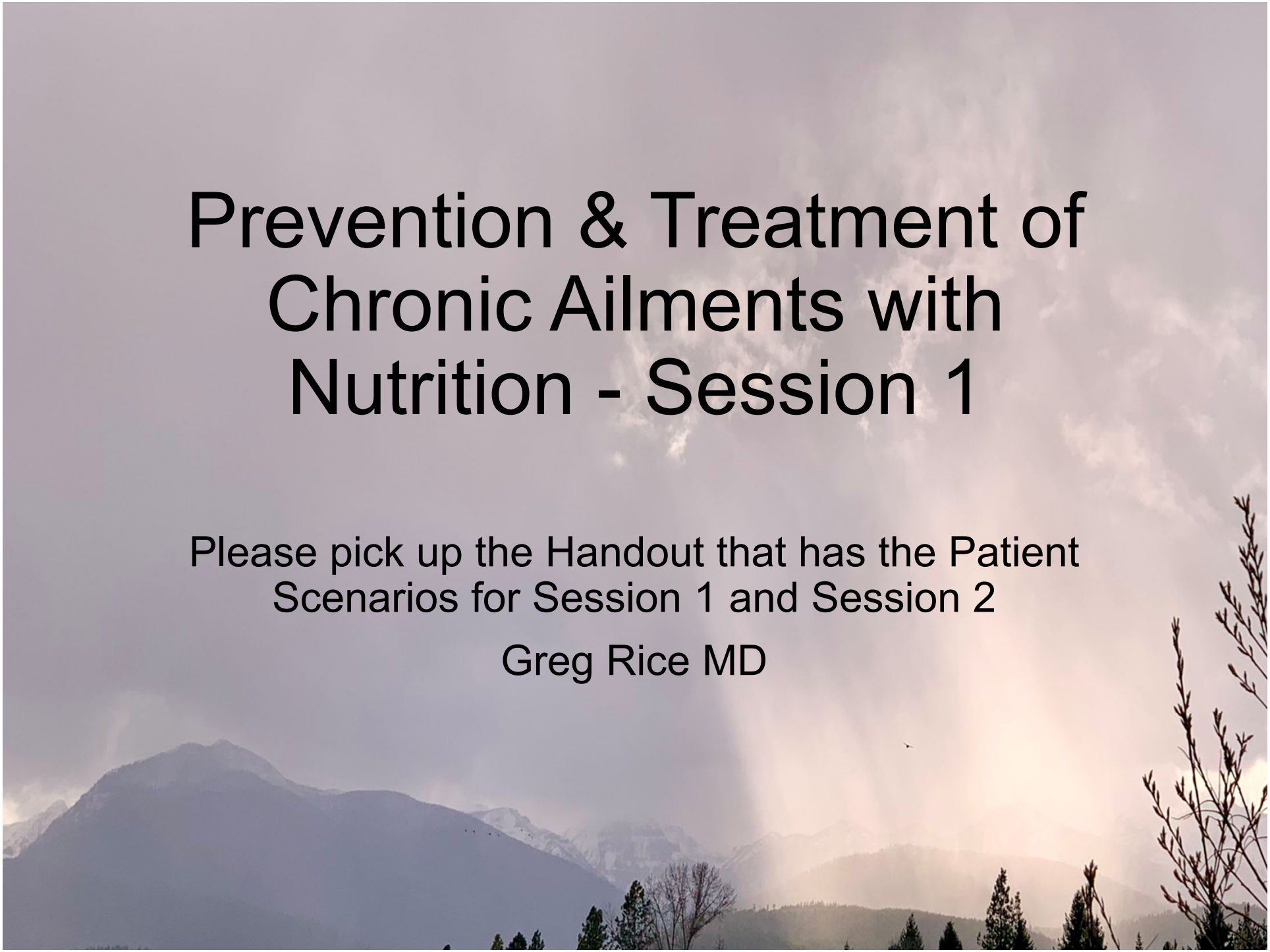

Prevention & Treatment of Chronic Ailments with Nutrition - Session 1

Please pick up the Handout that has the Patient Scenarios for Session 1 and Session 2

Greg Rice MD

Learning Objectives

1. To learn what science has discovered about the pathophysiology and the role of nutrition in chronic diseases such as vascular disease, diabetes, dementia and common cancers.

2. To be able to better navigate all the conflicting and varied types of nutritional information that doctors and their patients are confronted with.

3. To be confident counseling patients about why and how dietary changes can improve their health.

5. In the 1970s & 80s Nathan Pritikin's medical research (circle all that apply)

A. showed that a diet mostly of whole grains, minimally processed vegetables, whole fruit, plain nuts and small amounts of fish, lean meats, and low-fat dairy will improve the health of patients with symptomatic heart disease.

B. proved very little as the studies were too small and too poorly controlled.

C. showed that dietary treatment works better than medical surgical treatments in many cases of symptomatic heart disease.

D. was rejected by national medical organizations such as the National Heart, Lung, and Blood Institute (NHLBI), the American Diabetes Association and the America Heart Association.

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A. Insulin Resistance was finally discovered in 1997.

B. Insulin's main function is to regulate blood sugars.

C. When insulin binds its receptors, it signals the cell to carry out specific functions that are important to the health of the organ in which it is located.

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10. Which of these statements are true about the cells that line your blood vessels?

A. They are called endothelial cells.

B. When they are not functioning properly, they allow LDL particles to pass into the wall of the artery and can lead to atherosclerosis, stenosis and even occlusion.

C. Dysfunctional endothelial cells can increase the risk of DVT and/or pulmonary emboli.

D. They are poor at sensing bacteria in the blood. The white cells in the blood stream take care of that.

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18. Studies of people staying on GLP-1 analogs are showing some reduction in a variety of chronic illnesses. **Which of the following statements are likely true regarding this reduction?**

A. The weight loss stimulates a healthier microbiome which reduces unhealthy metabolites such as LPS.

B. Many long-term users of GLP-1 analogs lose their desire to eat UPF. Some say it tastes bad.

C. Long-term users of GLP-1 analogs are often choosing whole fruit and other whole plant food over UPF because it tastes better.

D. The improved blood sugars seen on long term users of GLP-1 analogs reverse insulin resistance.

E. GLP-1 analogs directly restore the natural satiety-hunger cycle that many UPF users have lost.

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19. Processed foods are often being promoted as having lots of fiber. Food companies add processed fiber to the mixture of ingredients in the food. Examples of these additives are inulin, polydextrose, wheat bran, soy fiber, cellulose, corn bran, and pea hull fiber. They are often found in granola bars, ice cream, soups, protein bars, cereals, and cookies. **Which of the following statements are true?**

A. Food containing artificial fibers listed above have been shown to reduce the incidence of common chronic diseases in long term studies.

B. Even though these fiber additives are artificially made using chemical techniques, they are still very beneficial to our health.

C. These products are used in UPF for a variety of reasons. Many of them contain important vitamins and minerals that improve one's health.

D. Fiber in its natural state as part of the whole minimally processed plant food that we eat has been shown to reduce the incidence of many common chronic illnesses.

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22. Microvascular dysfunction plays a role in chronic diseases of several organs. **Which of the following statements are backed by scientific research?**

A. The arterioles and capillaries control regional blood flow in the brain. Dysfunction of their endothelial cells can trigger reduced cognition in young hypertensives and can trigger dementia symptoms in the elderly.

B. People with claudication, who have improved symptoms with exercise training, do not show improved endothelial cell function.

C. Poor endothelial cell function increases the risk of getting pre-eclampsia.

D. False positive exercise tests (ischemic looking treadmill test with a normal heart cath) likely indicate significant coronary microvascular dysfunction.

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Session 1 Patient Scenario Part 1

Stella is a 29-year-old married female new to the area in for a consult about her hypertension. She has one 6-year-old child who was born at 33 weeks due to pre-eclampsia. He has been diagnosed with mild attention deficit disorder and is getting help at school. Dad took a new job at the Forest Service Supervisor's Office and Stella works part time for a local tax accountant.

Stella and her husband want to have another child but are hoping there is a way to prevent what happened with her last pregnancy. She has a high school education and is an avid reader. You have her records of recent blood tests, IUD insertion 2 years ago with a normal pap smear, and her only pregnancy and delivery. She feels well today.

Session 1 Patient Scenario Part 1 - continued

Her blood pressure is 140/86 and other VS are normal. Her BMI today is 28.2. Her records show 5 months ago normal values for CBC, HDL is 38, Triglycerides at 220, CMP normal except fasting glucose is 102.

She is good about taking her medication and checks her BP about once a week and it varies in the range of 130/80 to 145/92. She takes Lopressor 50 mg bid, Amlodipine 10 mg daily, HCTZ 50 mg daily. She has no allergies, no surgeries in the past, and no serious injuries or hospitalizations other than the birth of her only child. She had normal childhood vaccines including HPV vaccines. Her last screening for cervical cancer was 2 years ago with her IUD insertion.

What questions do you have for Stella?

List at least 3 important questions you want to ask Stella and discuss in your group briefly why you would ask them.

1.

2.

3.

What cells in Stella's body are causing her hypertension?

What is happening inside these cells that causes the blood vessels to misbehave?

Session 1 Patient Scenario Part 2

You discover Stella has a good marriage, has good support from family and is making new friends. Her son is making progress at school.

Her mom has hypertension and type 2 diabetes. MGM had a stroke. Her dad has hypertension and her PGF has dementia. She has two younger siblings. One has obesity and hypertension. The other is healthy.

LMP 2 weeks ago was normal.

Her diet is typical of American working mothers. She has a latte with bagel and cream cheese for breakfast. She often skips lunch but has coffee with creamer and goodies at work. Dinner is usually Pizza or burgers with French fries during the week. On the weekends she often has a grilled steak with chips, baked beans or mac and cheese with ice cream and brownies for dessert.

List two questions you could ask her to better understand about her nutritional knowledge:

1.

2.

What could you say to her or ask her to find out if she is open to change? List two things.

1.

2.

List two things that could motivate her to change.

1.

2.

Prevention & Treatment of Chronic Ailments with Nutrition - Session 2

3. There is no evidence that the endothelial cells that line the brain's arterioles and capillaries as well as the endothelial cells that line the cerebral lymphatic system (called the glymphatic system) play a major role in the development of dementia.

A. True.

B. False

3. There is no evidence that the endothelial cells that line the brain's arterioles and capillaries as well as the endothelial cells that line the cerebral lymphatic system (called the glymphatic system) play a major role in the development of dementia.

~~A. True.~~

B. False

4. Brain imaging and brain autopsy findings in patients with dementia do not always show the severity of the patient's dementia. There are many cases where the brain MRI abnormalities are mild, but the patient has marked dementia. Also, there are documented cases of people with marked dementia clinically who have shown dramatic improvement after a fecal transplant. **The most likely explanation for these phenomena is that autopsy and imaging do not show the degree of endothelial cell dysfunction which can be reversible.**

A. True

B. False

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A. True

~~B. False~~

8. There has been a lot in the medical news about cancer in the last few years. **Which of the following statements correctly represent these news items?**

A. The IARC under the World Health Organization considers alcohol a Group 1 carcinogen (strong evidence that it causes cancer). In January this year the U.S. Surgeon General's Advisory report stated that alcohol was a leading cause of cancer accounting for abut 100,000 cases a year in the U.S.

B. The American Cancer Society’s annual report in January 2024 showed that finally the incidence of cancer is going down.

C. Research over the last 5 years clearly shows that fructose stimulates cancer cells to grow and divide because of its ill effects on the Liver.

D. Alcohol consumption likely contributes to the increasing incidence of colorectal cancer in adults under 50.

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10. You have a friend and co-worker that is 38 years old. She is concerned about colon cancer because her 64-year-old dad was just diagnosed with invasive colon cancer. She wants your opinion about what she can do to reduce her risk. **Which of the following statements would be reasonable advice?**

A. If no other family members have colon cancer, then she should wait until she is 50 to get screened for colon cancer.

B. You ask her about UPF and drinks and her meat consumption. You give her some ideas about how to avoid processed meat and grilled meat and how to add whole plant food to her diet.

C. You show her the web site for Cologuard and recommend she does this home test every six months.

D. You reassure her that, with some simple dietary changes, she can significantly reduce her risk of getting colon cancer. You print out the current USPST guidelines for colon cancer screening.

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11. Emulsifiers are a bit of a mystery when it comes to food additives. **Which of the following statements are true regarding them?**

A. The FDA has approved 170 different emulsifiers. The FDA approval was by a method called Generally Regarded As Safe (GRAS) rather than requiring studies to prove their safety.

B. Emulsifiers have shown inflammation of the colon and the development of the metabolic syndrome in mice.

C. A very large prospective study done in France showed an increased incidence of prostate and breast cancer in adults who consumed the most emulsifiers in their food and drink.

D. Coffee mate and International Delight creamers are the safest because they do not have emulsifiers in them.

E. All the above.

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16. Cancer patients are concerned about a recurrence of cancer or a new cancer forming. **Which of the following statements are true?**

A. Getting a recurrence or a new cancer is only slightly higher in cancer survivors.

B. Getting rid of insulin resistance and signs of the metabolic syndrome can reduce the recurrence of breast cancer.

C. Cutting out processed meat and dairy products (such as cheese) can reduce the chance of a recurrence in men with prostate cancer.

D. Taking antioxidant supplements reduces the risk of recurrence in breast cancer patients.

E. Patients with invasive colon cancer can reduce their risk of recurrence by eating a diet of mostly whole grain, vegetables and fruits.

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A friend's sister brings in her dad from out of town to see you. She brought him with her today because he was starting to fail at home. She is thinking about having him stay here with her. He is 76 years old and his wife died a year ago. Four months ago, he was hospitalized for heart failure. You have his records. It shows he has heart failure with preserved ejection fraction. His heart catheterization shows diffuse disease with significant micro-vascular disease. He did not have any correctable coronary disease, just all diffuse small vessel disease. He is on lots of medications. He has a cardiology appointment in a month in a nearby medical center.

The daughter reports his edema is worse. He has been sleeping in a recliner and has trouble walking very far due to SOB and some chest pains. He cannot tolerate compression stockings or wraps. He has no sores on his legs. He recently developed type 2 diabetes and has had trouble with hypertension for years. He has osteoarthritis in his hips and he thinks it is getting worse. His daughter is a nurse but is taking time off to care for him. She is very concerned that he is declining physically and mentally. His is not as sharp and alert as he was a year ago. He was not like this at all before her mom died. The daughter says his diet is “terrible” since his wife died, and she is planning on cooking for him but is unsure about what foods are best.

BP 145/88, P 85 and regular, RR 20 and slightly labored when talking, T 97.6. O2 sat is 90% on room air. He is quiet but responds appropriately. He is oriented, but passive and his daughter answers a lot of the questions. He is 5’ 7”, Wt 198 lbs. BMI is 31. He has 2-3+ edema to his knees. Legs are red but not tender. His feet have normal sensation. He is sitting in a clinic wheelchair as he cannot walk very far without having to sit down. His recent lab shows normal CBC, CMP OK except sodium at 134, creatinine at 1.5, and BUN 25. LFTs are mildly elevated. A1c is 8.3 on metformin and glargine insulin. He can get to the BR on his own at home, but it is only a few steps away. He uses a urinal at night. He seems apathetic and is ok with his daughter helping him out. He does not use alcohol or cigarettes. He was in a precarious situation at home with a neighbor getting things at the store for him.

What would be the best and safest way to treat this patient? List the pros and cons of each of the following:

A. Begin Semaglutide

Pros _____

Cons_____

B. Up his water pills to improve his swelling and SOB

Pros _____

Cons_____

C. Discuss adjusting his diet with him and his daughter

Pros _____

Cons_____

What would be the best and safest way to treat this patient? List the pros and cons of each of the following:

D. Begin Jardiance to reduce swelling and improve his blood sugar

Pros _____

Cons_____

E. Refer to diabetic specialist

Pros _____

Cons_____

F. Adjust cardiac and blood pressure meds to get his BP lower

Pros _____

Cons_____

Next you find out the following information:

You asked the daughter what was in his cupboards and refrigerator at home. She said not a lot but had found a partially eaten box of doughnuts, two packages of cookies, 2 cans of Dinty Moore Beef Stew and some Top Ramon. He had 2 empty liter bottles of Dr Pepper on the counter with a half full one, Beef Smokies and some frozen hamburger patties in the frig.

In the above UPF he had in his home, what are some of the unhealthy things in those foods? What is missing?

Describe his large intestine microbiome and the health of the epithelial cells that line the colon.

What metabolic physiologic processes have been going on inside him that contributed to his:

A. Hypertension

B. Diabetes

C. Heart Disease

Of these three things, which are amenable to treatment with a healthier diet?


Thanks for
Your
Participation!