

Villanova University Fitzpatrick College of Nursing  
MacDonald Center for Nutrition Education and Research  
Monthly Webinar Series for Health Professionals

**MCNER Presents: Plant-Based Eating for Health: A 2024 Deep Dive Literature Review**

**Andrew M. Freeman, MD, FACC**

**11/13/2024**

Audio Transcript

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00:01:03.260 --> 00:01:21.860

Lisa Diewald, MS, RD, LDN: Good afternoon. Welcome to our November MacDonald's Center for Nutrition, Education and Research Webinar. My name is Lisa Dewald, and I'm the Associate director for the Villanova University's, Fitzpatrick College of Nursing's, MacDonald's center for nutrition, education and research. I have the pleasure of being the moderator for today's webinar.

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Lisa Diewald, MS, RD, LDN: We're very excited today to continue our 3 part series on plant-based eating.

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00:01:27.530 --> 00:01:38.030

Lisa Diewald, MS, RD, LDN: As we mentioned before, we're welcoming speakers throughout the Fall Webinar series to present a variety of different perspectives and research on plant-based eating.

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Lisa Diewald, MS, RD, LDN: We have a tremendous interest in this webinar from health professionals, primarily dietitians, nurses, and nurse practitioners. So we're glad you're here.

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Lisa Diewald, MS, RD, LDN: Despite advances in medications, heart disease continues to rise in the United States affecting approximately 50% of Americans, and it remains the leading cause of death in the

United States. Lifestyle medicine approaches, including the use of plant predominant eating styles have been shown to be beneficial in both cardiovascular disease, treatment and prevention.

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Andrew Freeman, MD, FACC, FACP: -

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Lisa Diewald, MS, RD, LDN: Given rapidly evolving research on plant-based diets, staying abreast of the latest evidence base is challenging but necessary in fine-tuning, patient guidance and recommendations. So today's Webinar, our second in the series, is presented by Dr. Andrew Freeman, a cardiologist with a passion for prevention, who will focus on the most recent 2024 research on plant-based eating and familiarize health professionals with additional evidence base that can form the basis of recommendations to reduce risk.

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00:02:40.920 --> 00:02:59.090

Lisa Diewald, MS, RD, LDN: Remember, as always, that one size does not always fit all, and it's important to be open to a variety of perspectives and research that lead to sensitive and compassionate conversations with patients that promote realistic, effective, and most importantly sustainable changes. So we're glad you're here with us today.

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Lisa Diewald, MS, RD, LDN: Today's webinar objectives are to review the most recent research on plant-based diets from an extensive 2024 literature review and to identify ways to apply this research to clinical practice, patient care and counseling.

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Lisa Diewald, MS, RD, LDN: Pdfs of today's presentation will not be posted. However, this presentation is being recorded, and will be posted within the next week.

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Lisa Diewald, MS, RD, LDN: Villanova University and Louise Fitzpatrick College of Nursing is accredited as a provider of nursing

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Lisa Diewald, MS, RD, LDN: continuing professional development by the American nurses, credentialing Centers Commission on accreditation. This activity awards one contact hour to nursing professionals. This activity also awards one CPEU in accordance with the Commission on Dietetic Registration CPEU prior approval program. This is a level 2 activity and suggested performance indicators are listed on the slide.

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Lisa Diewald, MS, RD, LDN: If you used your phone to call into the webinar today and want CE credit for attending, please just take a moment afterwards to email us at [mcner@villanova.edu](mailto:mcner@villanova.edu), and provide your name so that we can send you a link to an evaluation as well as the CE Certificate.

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00:04:10.050 --> 00:04:18.979

Lisa Diewald, MS, RD, LDN: If you have any questions, you're encouraged to send them in during Dr. Freeman's presentation he will answer as many as possible time permitting following the presentation.

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00:04:20.190 --> 00:04:25.370

Lisa Diewald, MS, RD, LDN: Now I have the privilege of introducing today's speaker, Andrew Freeman, Md.

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Lisa Diewald, MS, RD, LDN: Is a Fellow of the American College of Cardiology, Fellow of the American College of Physicians, a board-certified cardiologist,

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Lisa Diewald, MS, RD, LDN: Director of clinical Cardiology and Operations and Director of CVD. Prevention at National Jewish Health in Denver, Colorado.

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00:04:43.950 --> 00:05:13.169

Lisa Diewald, MS, RD, LDN: Dr. Freeman earned his MD With research honors from the University at Buffalo's Jacobs School of Medicine and Biomedical Sciences, completed an Internal Medicine Residency at Brown University, Rhode Island Hospital, and a Cardiology fellowship at Temple University Hospital. Dr. Freeman combines both traditional and Western medicine with a holistic approach on overall wellness and disease prevention through a combination of advanced cardiology, diagnostics, and lifestyle prevention

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00:05:13.290 --> 00:05:18.989

Lisa Diewald, MS, RD, LDN: including a whole foods, plant-based diet, regular exercise, mindfulness, and support.

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00:05:19.060 --> 00:05:41.950

Lisa Diewald, MS, RD, LDN: In addition to being a frequent featured speaker for CNN, he is also sought after speaker for both health, professional and consumer audiences. Dr. Freeman holds leadership positions at both local and national chapters of the American College of Cardiology, and is the regional lead for the popular walk with a doc program in Denver, a favorite with patients for over 14 years.

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00:05:43.700 --> 00:05:59.300

Lisa Diewald, MS, RD, LDN: Dr. Freeman's disclosures are listed on the slide, and he will also provide his disclosures prior to beginning his presentation the relevant financial relationships listed have been mitigated. There are no relevant financial relationships with ineligible companies for those involved in planning the activity.

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00:05:59.330 --> 00:06:23.500

Lisa Diewald, MS, RD, LDN: The planners will review participant feedback to evaluate for real or perceived commercial bias in any activity. And so with that, I want to extend a warm welcome to Dr. Freeman, and invite him to share his screen for the presentation, which is chock full of new evidence to provide clarification and guidance for all of us in our relationships with patients and client care and counseling. We'll circle back after his presentation as time permits

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00:06:24.890 --> 00:06:25.949

Lisa Diewald, MS, RD, LDN: for Q&A.

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00:06:28.170 --> 00:06:30.649

Andrew Freeman, MD, FACC, FACP: All right. Well, thank you. Can everyone hear me?

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00:06:32.900 --> 00:06:36.669

Lisa Diewald, MS, RD, LDN: I can. So I I think we're good.

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Andrew Freeman, MD, FACC, FACP: So, for those of you that haven't seen me speak before, usually what I do is I try to comb through the literature and pull out all of the important nutrition research and articles that have been put together over the last several months to year, sometimes a little longer than that, and try to really show you just how powerful nutrition can be in everyday practice of medicine.

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Andrew Freeman, MD, FACC, FACP: Lots of disclosures here.

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00:07:00.380 --> 00:07:14.109

Andrew Freeman, MD, FACC, FACP: Just a couple of important notices. Obviously there are many well done, randomized trials showing the efficacy of plant-based diets. There are some studies that are observational, however, and they do not show cause, but show significant relationships.

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00:07:14.620 --> 00:07:33.479

Andrew Freeman, MD, FACC, FACP: And before I get too much further in, and I'm sure that you, as a nutrition and dietetics group, probably get these questions even more than I do. But if you are plant-based you can certainly get enough protein. And in general there's really very limited concern about protein in the Western world. Obviously, typically protein deficiency follows calorie deficiency.

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Andrew Freeman, MD, FACC, FACP: But pound for pound, spinach, kale and broccoli actually have more protein than most of the animal products that people consume.

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Andrew Freeman, MD, FACC, FACP: So, let's start off with some stats. And I always like to do this, because each year it seems to get more grim, and I'm waiting for somebody to really call it out and make a big change in the world, but it looks like by more than half of the world by 2035, which is only about 10 years from now, will be overweight or obese.

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Andrew Freeman, MD, FACC, FACP: The World Obesity Federation's Atlas predicts that 51% of the world, or more than 4 billion people will obese will be obese or overweight in the next 12 years. And childhood obesity could more than double, which is a major problem, because that's the pipeline for adults that are obese as well.

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Andrew Freeman, MD, FACC, FACP: The cost of society is significant. The thought is that more than 4 trillion dollars annually are spent on lifestyle, related diseases in this regard.

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Andrew Freeman, MD, FACC, FACP: Sadly, I'm always shocked to see some of these types of things come out, but it turns out that, despite over a hundred-year reign as the number one killer: heart disease. More than half of US adults don't know that that's the leading cause of death.

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00:08:38.980 --> 00:08:54.629

Andrew Freeman, MD, FACC, FACP: In fact, heart disease has now been leading cause of death in this country for 100 years since 1921, said the President of the American Heart Association. Somehow people just don't know this. So, if you didn't know now, you know, and please tell a friend.

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Andrew Freeman, MD, FACC, FACP: Starting the year off right is always helpful. And in this interesting study that was just published, looking at data from the nurses, health study and health professionals follow up study which are frequent databases of query. These folks were followed for 36 years. They compared diets based on the alternative healthy

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Andrew Freeman, MD, FACC, FACP: eating index, and those with the lowest quintiles of score in this dietary index had nearly 20% more mortality. And one of the things that I want to point out for those of you that don't practice medicine per se is the magnitude effect with nutrition and lifestyle really beats almost every drug that's ever been used for any disease. And so you're going to see numbers here that are humongous. And I want you to remember how powerful the tools we all wheel together can be in improving the populations health.

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Andrew Freeman, MD, FACC, FACP: As you probably know, the vast majority of Americans consume almost no beans or legumes, but it turns out they are really superfoods, and in this large study, looking at over a million participants. If you look at higher versus lower intakes, people did much better, less death, less stroke, and interestingly, for every 50 grams per day in legume intake was associated with a 6% reduction in all-cause mortality, and of course I always joke that if you could get another 1,000 grams per day or something, maybe you'd never die.

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00:10:11.900 --> 00:10:30.840

Andrew Freeman, MD, FACC, FACP: And how about in this particular situation? This is interesting. So phytoestrogen estrogens, which are plant-based estrogens. Again, from the prior studies I mentioned, looking at higher intakes versus lower intakes, it turns out that when you eat more you have less cardiovascular death, cancer, death and overall non-cancer CVD death is less.

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Andrew Freeman, MD, FACC, FACP: The same thing is being shown to occur in the United Kingdom, and lots of Western Europe.

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Andrew Freeman, MD, FACC, FACP: -

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Andrew Freeman, MD, FACC, FACP: If you look at some of the stats here, more working people are reporting long term health conditions with at least one people who are economically inactive or disabled, has risen to over 2.5 million people.

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00:10:50.080 --> 00:11:15.840

Andrew Freeman, MD, FACC, FACP: For those economically inactive they had more than one health condition, and I would agree that the days of having a patient who has just high blood pressure, or just high cholesterol, or even just a heart attack, are basically gone. Everybody's got high blood pressure, high cholesterol, diabetes, obesity, heart disease, heart failure. It's crazy. And so the UK is facing this as well, and it's costing their economy 150 billion pounds a year.

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Andrew Freeman, MD, FACC, FACP: And, in fact,



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Andrew Freeman, MD, FACC, FACP: The National Health Service in the UK was forced to clear up the dirt as obesity soars, and their statement was, unless the health ministers abandoned their reluctance to encourage people to live healthier lives, the health services risk become unaffordable.

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Andrew Freeman, MD, FACC, FACP: Imagine that you have a health minister in your country that is reluctant to encourage people to live healthier- mind blowing.

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00:11:40.710 --> 00:11:56.929

Andrew Freeman, MD, FACC, FACP: Now, it also starts with kids, and, as I mentioned earlier, we have a major problem here in the US. And it turns out that 32% of children under 5 years old didn't need a single fruit in a day. 49% did not consume a vegetable, and 57% had at least one sugar sweetened drink every week.

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00:11:58.610 --> 00:12:25.610

Andrew Freeman, MD, FACC, FACP: This was a great study looking at Carotenes, and they looked at this, and they found that positive associations were found when people had Carotenes in their blood with cholesterol markers and subjects that had atherosclerosis had much lower levels. The authors said that in our study subjects with atherosclerotic plaque presence showed significantly lower, almost half of, the plasma concentrations of total alpha and beta carotenes. So basically, eat up those carrots they're pretty powerful.

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00:12:26.110 --> 00:12:41.439

Andrew Freeman, MD, FACC, FACP: By the way, for those of you unfamiliar with what those vegetables are in the upper corner. It turns out that the vast majority of carrots before modern times were not orange. They were all the other colors. So if you haven't tried a non-orange carrot you're missing out. Rainbow carrots are pretty amazing.

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00:12:42.280 --> 00:13:06.060

Andrew Freeman, MD, FACC, FACP: Now, a lot of data has come out more recently, particularly regarding pregnancy and dietary interventions, and, as you may know, the field of cardio obstetrics has emerged because there's so much overlap between diseases that are high risk during pregnancy and later life development of coronary or other heart diseases in this relatively high risk, pregnant population. They randomized people to a Mediterranean diet

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Andrew Freeman, MD, FACC, FACP: or a mindfulness-based stress reduction program, and it turns out that the Mediterranean diet actually had a marked improvement in their perceived stress and anxiety scores. So really, what you eat may have a big effect on your mental state, particularly during pregnancy.

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00:13:20.230 --> 00:13:42.290

Andrew Freeman, MD, FACC, FACP: If you are pregnant, eat more fiber. In this interesting study, the amount of fiber you ate correlated to how well your children did, and if you ate more fiber, or if you ate less fiber in this study, you had 51% more risk of delayed communication in your child, 45% worse, fine motor skills, 46% worse problem solving skills and 30% worse personal social skills just by the amount of fiber.

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00:13:42.390 --> 00:13:43.510

Andrew Freeman, MD, FACC, FACP: Pretty amazing.

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00:13:44.220 --> 00:13:57.019

Andrew Freeman, MD, FACC, FACP: Now for those of you that have seen me talk before, you may have noticed that there are a lot of studies over the last, probably 6 to 7 years about eggs and the development of diabetes, and it turns out that the more eggs we eat, the more diabetes risk we develop, unfortunately.

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Andrew Freeman, MD, FACC, FACP: And in this large study of 11 prospective studies for what every 100 milligrams of added cholesterol, the risk increased by 5% when we compare the highest to lowest risk, the risk increased by 15%. And it turns out that western countries were worse, and there have been many studies over the years that have shown that backyard chicken, eggs, or even European eggs may be healthier than American eggs. Nobody knows exactly why, but regardless avoiding animal products, which are the only dietary source of cholesterol, is best for diabetes prevention.

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Andrew Freeman, MD, FACC, FACP: Now, lots more push, if you will, out in the media and the public for Ketogenic diets. And you'll see a number of studies this year that came out about this, and what they showed was those diets of 305 people eating a low carb, high fat diet, with about 1,200 people eating a standard diet.

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Andrew Freeman, MD, FACC, FACP: The UK Biobank followed people for more than 10 years. About 12 years of follow up and after adjustment for other risk factors such as diabetes, high blood pressure, obesity, people on a low carb, high fat diet, had 2 times higher risk of having major cardiovascular events, and, of course, higher cholesterol.

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Andrew Freeman, MD, FACC, FACP: The same has been shown over the years for prostate cancer. Men who closely follow a plant-based diet, lower the risk for disease progression and for cancer compared to those who did not, in big magnitude 52, or even 53%. Men who were older if they exercised and followed this diet had an even bigger response.

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00:15:20.230 --> 00:15:41.090

Andrew Freeman, MD, FACC, FACP: Now, many of you may have been nervous, or are nervous to recommend plant-based diets to your patients who have chronic kidney disease, but it turns out that a vegetarian diet improves renal filtration and overall kidney function, and many of the risks that we were worried about, particularly with phosphates and proteins, and all of that are usually mitigated to some degree by a plant-based diet.

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00:15:41.610 --> 00:16:04.879

Andrew Freeman, MD, FACC, FACP: In fact, in this large study of 117,000, plus participants, though they were followed for 10 years, and it turns out that if they were following a more plant-based diet, they actually had 18% less chronic kidney disease. And they also concluded in this large prospective cohort study, that greater dietary, plant protein intake was associated with a lower risk of incident of chronic kidney disease.

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00:16:06.020 --> 00:16:28.869

Andrew Freeman, MD, FACC, FACP: Now, this is really interesting. You may have heard over the years a number of times where calcium supplements were somehow implicated in an increased risk of cardiovascular events. In this larger study of 400 plus 1,000 in the Uk Biobank. It turns out that habitual calcium supplementation, particularly in diabetics, was associated with more cardiovascular disease, incidence, mortality, and all-cause mortality,

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00:16:28.890 --> 00:16:31.590

Andrew Freeman, MD, FACC, FACP: but not in people without diabetes.

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00:16:31.610 --> 00:16:39.119

Andrew Freeman, MD, FACC, FACP: What I continue to point out is the emerging concept that's coming down the pike is that cardiometabolic renal disease is one syndrome.

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Andrew Freeman, MD, FACC, FACP: So when we treat heart failure or coronary disease, or a heart attack or sleep, apnea, obesity, diabetes, high cholesterol, whatever it may be, or chronic kidney disease,

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00:16:49.180 --> 00:17:13.020

Andrew Freeman, MD, FACC, FACP: these are all the same disease, but different facets of that same disease. So it may not be that calcium supplements are the problem, but maybe calcium supplementation

is simply a marker of poor diets. As an example, we get a lot of calcium from eating green, leafy vegetables and a lot of people don't eat any green, leafy vegetables, and that may simply indicate that they may be sicker in terms of how they live every day.

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Andrew Freeman, MD, FACC, FACP: Now this was an interesting article that came out in JAMA Cardiology, and what it showed that over the last several years many people have at least one chronic cardiometabolic renal disease, 8% had at least 2 and 1.5% of the cohort study here had 3.

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Andrew Freeman, MD, FACC, FACP: The most common was chronic kidney disease plus type, 2 diabetes. So, in short, lots of comorbid conditions are now coming in together, which is also why we're seeing a whole slew of what we would call traditional diabetic drugs. SGLT-2s and GLP1s are suddenly coming forward, and it turns out that they not only help diabetes, but they also help heart disease and high blood pressure, high cholesterol, kidney disease, etc. So pretty powerful data reinforcing all that's emerging.

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00:17:55.380 --> 00:18:23.939

Andrew Freeman, MD, FACC, FACP: This was an interesting study about vision in Japan, and it turns out that the more fat you ate, the more retinopathy, particularly diabetic retinopathy people had. And interestingly, authors were commenting that these results suggest that a high intake of fat and saturated fat may affect the development of diabetic retinopathy, even in individuals whose total fat intake is generally much lower, that of Westerners. Remember, this study was in Japan, and Americans eat far much more fat than almost everywhere else in the world.

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00:18:25.410 --> 00:18:48.920

Andrew Freeman, MD, FACC, FACP: Now you may also have seen that more and more data is coming out about fertility. And, in fact, interestingly, there was just a study showing that one of the newer GLP1 drugs may actually improve fertility, but it turns out that when you cut all the cardiometabolic risk, fertility improves, and in this particular study, when folks were following a Mediterranean diet, all of their usual markers improved, and it was thought to be related to the antioxidants, and I would argue

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00:18:48.920 --> 00:19:00.410

Andrew Freeman, MD, FACC, FACP: getting rid of inflammation. Remember that inflammation is the root cause for all disease, and if we can control inflammation through the way we live, i.e., The way we eat many times. Many diseases will get better.

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00:19:00.470 --> 00:19:19.790

Andrew Freeman, MD, FACC, FACP: I also want to point out for those of you that are eating a so-called Mediterranean diet: Be sure you're eating a traditional Mediterranean diet. Not the American take on it. If you're eating piles of feta and lamb, that is not a Mediterranean diet. That's an American diet. A Mediterranean diet is a predominantly plant-based diet, with small amounts of those other foods.

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00:19:20.680 --> 00:19:42.779

Andrew Freeman, MD, FACC, FACP: Now this was a really fascinating article, so this was a genome wide association to study genetic variants associated with high, fat mass, people who were obese, and then they combined them to generate a polygenic risk score, and it turns out that if you took these patients who are at highest risk for being obese by their genes and fed them a plant-based diet, they actually had much less risk of becoming overweight.

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00:19:42.910 --> 00:19:54.899

Andrew Freeman, MD, FACC, FACP: And so the authors say that this effect, this diet, could offset the effects of high genetic risk for high body, fat and modulating nutrient intakes might overcome this genetic risk.

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00:19:54.930 --> 00:20:05.820

Andrew Freeman, MD, FACC, FACP: So, for many people who feel like they are fated to be overweight or fat, or whatever it may be, it turns out that what you eat and how you live may prevent that expression of those genes.

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00:20:06.830 --> 00:20:26.429

Andrew Freeman, MD, FACC, FACP: This was an interesting study also that came out. These were people in an early addiction treatment program who followed a plant-based diet, and they followed things like self-esteem resilience. And it turns out that the people who follow these diets best actually had significantly more self-esteem and resilience. So eating better has a total body effect that's pretty powerful.

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00:20:27.420 --> 00:20:52.340

Andrew Freeman, MD, FACC, FACP: This was a study out of Denver, where they gave people garden plots. Now, where you guys are in Villanova everybody has a garden, but in Philly, where I trained at Temple, up the street. There were garden plots available in many of the cities, and so people who don't have access to their own backyard or land will be given garden plots if they want. And so people who got these garden plots were followed for 6 months, and it turns out

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00:20:52.340 --> 00:21:03.470

Andrew Freeman, MD, FACC, FACP: that they visited them more. They ate more fiber, meaning they were eating what they were growing, and they had upped their physical activity and saw stress and anxiety levels decrease. So for those of you that are stressed out:

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00:21:03.730 --> 00:21:05.089

Andrew Freeman, MD, FACC, FACP: Consider gardening

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00:21:06.160 --> 00:21:34.859

Andrew Freeman, MD, FACC, FACP: now. Of course, I would be remiss to tell you that eating well is the only way to get better. But I would always tell people that there are 5 important ways, and the big one, of course, is exercise. Diet of course, we're talking about. And then stress relief, sleeping enough, and then believe it or not, connecting with others. But exercise is truly the elixir of youth, and in this particular study they looked at leisure time, physical activity, and they followed people for over 30 years. And if you met these guidelines

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00:21:34.860 --> 00:21:57.429

Andrew Freeman, MD, FACC, FACP: of up to 299 minutes you had much lower risk of dying overall from a variety of diseases, including cardiovascular disease. But if you were to exceed that up to 600 minutes a week, you would even further lower your risk of dying. So be sure you were exercising. Eating well is amazing, but exercise is even more powerful to amplify that effect.

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00:21:58.370 --> 00:22:23.010

Andrew Freeman, MD, FACC, FACP: Now, another fascinating study, I thought, involves this thing called brain derived neurotrophic factor, and this promotes neuroplasticity, which is the ability of your brain to sort of learn and make new pathways. And if you want more of this, there's a few ways to get it. You could fast for 20 h you could do light exercise, 90 min of low intensity cycling, or you could just do 6 min of vigorous cycling, or you can combine them.

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00:22:23.260 --> 00:22:37.089

Andrew Freeman, MD, FACC, FACP: And of course, brief, vigorous exercise was the most efficient way to increase this. BDNF increased by up to 5 times more compared to fasting or prolonged activity. So, in short, get your exercise in and make sure a good chunk of it is vigorous.

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00:22:38.080 --> 00:22:53.240

Andrew Freeman, MD, FACC, FACP: Another study with exercise here: these were nearly half a million participants free of dementia. And it turns out, if you're sedentary for up to 8 hours a day, increased risk of dementia by 7%. But if you exceeded 8 hours a day that risk was up by 25%.

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00:22:53.290 --> 00:23:11.239

Andrew Freeman, MD, FACC, FACP: Replacing sedentary time with exercise reduced the risk of dementia, particularly in those with a genetic risk factor meaning higher ApoE levels. Again, another study this year that shows that what you have genetics is only part of the equation, the environment you put those genes in really seems to matter.

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00:23:12.360 --> 00:23:31.190



Andrew Freeman, MD, FACC, FACP: If that's not enough to scare you, the media and the mainstream lay press picks up all this stuff all the time. So if you're buying things on Amazon, beware of donkey meat you may get. You might remember in years past there were, you know, IKEA had horse in its meatballs and all these other things. So just be careful what you're buying.

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00:23:32.280 --> 00:23:50.949

Andrew Freeman, MD, FACC, FACP: This was an interesting study out of Malmo in Sweden. They followed about 24,000 participants for about 25 years, and it turns out that when people were following the eat lancet, diet, and the Lancet is a big medical journal in Europe which rivals say the New England Journal of Medicine.

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00:23:50.950 --> 00:24:08.240

Andrew Freeman, MD, FACC, FACP: They have an entire series on planetary health and plant-based eating and human nutrition. It's mind blowing if you haven't seen it, look it up, but regardless. Their diet is a predominantly plant-based diet, and if you follow that diet, you actually had 20% less heart attack, which was consistent across genders.

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00:24:09.050 --> 00:24:17.830

Andrew Freeman, MD, FACC, FACP: Now, many of my patients will say to me, Doc, it's so great that you're doing this. I'd love to do this, but I'm a weightlifter, or I depend on my muscles for my work, and I don't want to become weak.

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00:24:17.960 --> 00:24:44.899

Andrew Freeman, MD, FACC, FACP: And this was a great study that did all the usual cross-sectional area body lean mass through dexa, scans, muscle, volume, etc., etc. And it turns out. There are no significant differences, and a high protein vegan diet is as effective for optimal skeletal muscle development. If you haven't watched that movie, "the game changers" take a look at it. You can find that the strongest man on the planet is now fully plant based. Even Arnold Schwarzenegger is plant-based. So it really does work

104

00:24:46.160 --> 00:25:09.339

Andrew Freeman, MD, FACC, FACP: Now for many of you who have been following the sugar sweetened beverage story, you know those are relatively dangerous, but it turns out that a lot of the artificially sweetened foods are also interestingly, potentially dangerous. So in this interesting, untargeted, metabolic study, they looked at polyol sweetener levels, and these were erythritol in particular, and it increased MACE, major adverse cardiovascular events.

105

00:25:09.340 --> 00:25:19.570

Andrew Freeman, MD, FACC, FACP: It turns out it made platelets stickier, and they actually did a little pilot where they took healthy individuals and gave them erythritol. And it turns out that it makes their

106

00:25:19.570 --> 00:25:22.530

Andrew Freeman, MD, FACC, FACP: platelets significantly stickier. Interestingly.

107

00:25:22.660 --> 00:25:40.799

Andrew Freeman, MD, FACC, FACP: It increases the event rate by over 20%. So I would caution you to really focus on not using artificial sweeteners at all, if possible, and remember that sugar alcohols, which we once thought were perhaps stable may not be as much good as we once thought, and they may be potentially dangerous.

108

00:25:41.260 --> 00:26:05.349

Andrew Freeman, MD, FACC, FACP: Now, how about osteoporosis? This was an interesting study of 10,000 adults over the age of 60. They did ultrasounds of their heel bones, and it turns out, if you ate a healthy, plant-based diet, you actually had higher bone mineral density than those eating animal foods, and it turns out that this is a protective way against osteoporosis. For those of you that all grew up like I did with the concept that you needed a milk mustache for strong bones, a lot of that has been largely debunked at this point.

109

00:26:06.790 --> 00:26:23.329

Andrew Freeman, MD, FACC, FACP: Who doesn't want a bigger brain, right? A more functional brain? In this interesting study of 6,000 participants, if you ate magnesium, rich foods like leafy greens and nuts,

you had larger brain volumes and better brain health with less white matter lesions. And this effect was particularly notable among premenopausal women.

110

00:26:24.530 --> 00:26:48.580

Andrew Freeman, MD, FACC, FACP: This was an interesting review that came out of nutrients looking at LDL, (Low density lipoprotein) lowering diets. What they said here is food such as nuts and brands, especially within a prudent plant-based diet, low in saturated fat, complemented by supplements if needed, lowers LDL, and a combination has been shown to lower LDL by 20%, and a nutritional approach requires backing from industry

111

00:26:48.580 --> 00:26:58.680

Andrew Freeman, MD, FACC, FACP: to market and develop LDL lowering products before we go towards drugs and the clincher at the bottom is energetic: Support from health professionals is vital.

112

00:27:00.880 --> 00:27:24.029

Andrew Freeman, MD, FACC, FACP: For those of you that haven't followed the TMAO story. I encourage you to take a look at it. It's very fascinating. It involves the new frontier of gut flora, and it turns out, if you're an omnivore or a carnivore, if you eat carnitine or choline containing foods, your body produces TMAO and TMAO is associated with earlier heart disease, heart failure, overall death. In this case also, kidney failure

113

00:27:24.030 --> 00:27:34.610

Andrew Freeman, MD, FACC, FACP: and a variety of other negative outcomes. In my prior talks I've done a whole thing on TMAO. But in the name of science, they've actually done studies where they fed a vegan a steak.

114

00:27:34.610 --> 00:27:42.149

Andrew Freeman, MD, FACC, FACP: It turns out that their gut Flora wasn't present that could convert the carnitines and choline in that food into TMAO.

115

00:27:42.160 --> 00:27:52.760

Andrew Freeman, MD, FACC, FACP: So eating well, remember, when you eat well, and you eat plant-based. The first thing you feed are your gut flora, and healthy gut flora seem to have a major effect on how we do overall.

116

00:27:53.470 --> 00:28:02.990

Andrew Freeman, MD, FACC, FACP: The take-home message in this study was, it's positively associated with mortality, especially due to cardiovascular and renal disease even across races.

117

00:28:04.240 --> 00:28:23.370

Andrew Freeman, MD, FACC, FACP: How about in this interesting study, they looked at a variety of different low, fat, and plant-based diets, and it turns out that the vast majority of them significantly reduced the risk of all cause, mortality and cardiovascular mortality, stroke, etc, in the range of 50%, sometimes more, and the absolute effects were even more pronounced for people who are already high risk.

118

00:28:24.990 --> 00:28:51.939

Andrew Freeman, MD, FACC, FACP: Now I oversee our service line here at National Jewish Health, and so I get some of the cardiovascular business journals and other things like that, and I was pleasantly surprised when this came across the very first thing on the front page, said plant-based diets linked to lower cholesterol, reduce risk of blocked arteries. So I think people are starting to realize that there may be a significant prevention business out there and then, of course, remember that all of our healthcare administrators are suffering from what I would call the American curse.

119

00:28:51.940 --> 00:28:59.720

Andrew Freeman, MD, FACC, FACP: Which is where we work hard our whole lives. We save our money, we get ready to retire, and we don't just drop dead, but we get to suffer with heart attack, strokes and dementia.

120

00:28:59.720 --> 00:29:10.990

Andrew Freeman, MD, FACC, FACP: So I think people are becoming more and more aware of this as time goes on, and maybe we can see some big changes in the way our policies are written where maybe we can have healthier foods for all available everywhere.

121

00:29:12.410 --> 00:29:33.180

Andrew Freeman, MD, FACC, FACP: Now this was an interesting study, looking at lipids or cholesterol with plant-based diets, and there were 30 trials included over the last 43 years. And it turns out that even compared with an omnivorous group, we can get a 7% drop in total cholesterol and LDL 10% drop. And, as you may know, the Europeans are a bigger fan of using apolipoprotein B

122

00:29:33.180 --> 00:29:43.419

Andrew Freeman, MD, FACC, FACP: which out predicts LDL for cardiovascular events, and they saw a 14% drop, and the effect sizes were similar, no matter where they tested them, or how the study was designed.

123

00:29:44.680 --> 00:30:12.430

Andrew Freeman, MD, FACC, FACP: Now for those of you that may follow the National Lipid Association: You may have seen this great study that came out, and it showed that a healthy dietary pattern improves Dyslipidemia and other ASCVD Risk and combining nutrition interventions has an additive effect for reducing it, and interventions for triglyceride elevation require individualization and dietician administered medical nutrition therapy benefits lipid management. I know no brainers for most of us, but again, it's nice to see it in print.

124

00:30:13.140 --> 00:30:19.830

Andrew Freeman, MD, FACC, FACP: Now you may know that the United States has some of the fastest growing rates of colorectal cancer amongst people under 40.

125

00:30:19.920 --> 00:30:40.660

Andrew Freeman, MD, FACC, FACP: And if you look here, this was an interesting study, following nearly 5-million-person years, and for every 10 point increase in the healthy, plant-based diet index score, significantly lower risk of total digestive system, cancers, GI tract cancers, accessory organ cancer. Those are things like the gallbladder, etc. And liver cancer, a whopping, 32% less.

126

00:30:42.330 --> 00:30:57.070

Andrew Freeman, MD, FACC, FACP: You may know that chronic disease is also affected, and this is an interesting way of looking at it out of the UK Biobank. Again, people who had higher, healthy, plant-based diet index scores had significantly reduced risk of death from all causes.

127

00:30:57.070 --> 00:31:17.640

Andrew Freeman, MD, FACC, FACP: and then reduced risk of death from a variety of others. Now, interestingly, and this has been shown several times now that if you are a junk food vegan, you're eating mostly processed sort of highly adulterated foods, you actually had significantly higher rates of death cancer and cardiovascular disease.

128

00:31:19.090 --> 00:31:41.029

Andrew Freeman, MD, FACC, FACP: How about this interesting study. This was a cross-sectional analysis, over 525 healthy participants, and they found that Polyphenols were showing that people who had higher polyphenols ate better, particularly amongst flavonoids, and it turns out that higher polyphenol intake, including flavanones, was associated with a plant rich dietary pattern.

129

00:31:41.100 --> 00:31:58.039

Andrew Freeman, MD, FACC, FACP: For those of you wondering where you can get your flavonoids, your polyphenols, there is a little chart in the bottom. Almonds, apples, berries, olives, cherries, spinach, cloves, dark chocolate flax seeds, soybeans, all the good things we probably recommend regularly to our patients. Many people are surprised to learn about chocolate.

130

00:31:58.070 --> 00:32:08.560

Andrew Freeman, MD, FACC, FACP: Remember that chocolate in itself is probably helpful until we adulterate it with large amounts of dairy milk, fat, and sugar, so try to eat it as close to the way it comes in nature as you can.

131

00:32:09.620 --> 00:32:24.319

Andrew Freeman, MD, FACC, FACP: Now remember, the root cause for all disease, as I mentioned earlier, is inflammation, and if we can control inflammation through the way we live, the way we eat, you'll do better. And this interesting study that had nothing to do with nutrition, it turns out that CRP, which is a measure of inflammation,

132

00:32:24.320 --> 00:32:40.199

Andrew Freeman, MD, FACC, FACP: was the most predictive of cardiovascular events. So in terms of people who had the highest CRP levels, the MACE was 31% more. But look at cardiovascular mortality and all-cause mortality, 168% more and 142% more.

133

00:32:40.200 --> 00:32:45.740

Andrew Freeman, MD, FACC, FACP: And these out predicted LDL, the bad cholesterol, by an unbelievable amount. So eye-opening.

134

00:32:47.110 --> 00:33:06.309

Andrew Freeman, MD, FACC, FACP: For those of you that drink alcohol in moderation, you might want to consider drinking less, as you may know, most of the professional societies no longer recommend it. This was an interesting meta-analysis of 107 studies with 5 million participants, and it turns out that people who drank even a little bit had significantly more mortality, particularly amongst female drinkers.

135

00:33:07.750 --> 00:33:29.589

Andrew Freeman, MD, FACC, FACP: This was a shocking study about urinary tract infections, and it turns out that E. Coli found in meat may be the cause of more than a half a million UTIs in the US. Every year, and they did genomic analyses on the E coli and the other bacteria found. And it turns out that 8% of the E coli UTIs were caused by bacteria strains present and consumed through meat.

136

00:33:30.540 --> 00:33:42.020

Andrew Freeman, MD, FACC, FACP: How about for gallstones. This was an interesting study here that shows that if you had more fiber intake, you had a 56% reduction in gallstones, and the effect was strongest in people who were older and overweight.

137

00:33:43.580 --> 00:34:04.350

Andrew Freeman, MD, FACC, FACP: As I mentioned before, about sugar sweetened beverages, it turns out that if you follow people long enough in this case, 18 years there was an 8% increase in all-cause mortality for each additional sugar sweetened, beverage consumed, dropping by 18% when replacing one drink a day with coffee and the risk of premature death dropped by 16% for tea and water.

138

00:34:05.070 --> 00:34:16.509

Andrew Freeman, MD, FACC, FACP: And if you didn't see this, the WHO has finally come out and said that Aspartame is a possible carcinogen, which I think has been known forever. But they have finally put this in writing

139

00:34:17.940 --> 00:34:36.049

Andrew Freeman, MD, FACC, FACP: For those of you that eat the French fry, which, of course, can be plant-based by its very nature, although if you buy French fries from certain fast-food restaurants, you may find that they're made with beef. So be careful, but regardless, it turns out that if you eat them frequently it's associated with a 12% and 7% higher risk of anxiety and depression.

140

00:34:36.050 --> 00:35:01.330

Andrew Freeman, MD, FACC, FACP: It may be related to Acrylamide, which comes from frying or high heat and starches, and is also associated with a number of cancers. If you ever look carefully at your potato chip bag or your French fries, there is often a little disclaimer that says that this may contain a chemical known in the State of California to be carcinogenic. And of course, if you're not in California, which I imagine most of you are in Pennsylvania, it's still carcinogenic.



141

00:35:02.140 --> 00:35:30.080

Andrew Freeman, MD, FACC, FACP: And how about in this interesting, large meta-analysis, Looking at millions of people, it turns out that red meat consumption, 11% more per every 100 gram per day increment and 26% more for processor meat in just 50 gram increments. Remember that when you eat a hot dog, it could be 100 grams, or 200 grams or more. And then, if your guys are eating things like scrapple, which I would never recommend anyone do, you're looking at just a few bites.

142

00:35:31.380 --> 00:35:58.940

Andrew Freeman, MD, FACC, FACP: How about this interesting study here out of Korea looked at the modified alternative Mediterranean diet score. And it turns out that individuals with higher scores were less likely to report depression, and women with the highest adherence to a Mediterranean diet had a 71% reduced odds of depression, while men, 79% reduced odds. So again, lots of studies this year, showing how our mind may really improve when we eat better.

143

00:36:00.270 --> 00:36:09.229

Andrew Freeman, MD, FACC, FACP: In this interesting study, looking at ALS, which is Lou Gehrig's disease, the mean age of this participant was 57 and a half years old.

144

00:36:09.240 --> 00:36:23.889

Andrew Freeman, MD, FACC, FACP: Higher ALA levels were associated with lower risk of death in people with ALS and also a significantly slower functional decline. So again, what we eat, even after we get diagnosed with the disease may have an impact on our long-term outcomes.

145

00:36:24.900 --> 00:36:40.260

Andrew Freeman, MD, FACC, FACP: Many people are surprised to learn, you know, when I tell them that I work at a respiratory hospital. When people change their diets many times, their respiratory diseases get better and remember things like asthma, COPD, etc., share a huge inflammatory component.

146

00:36:40.260 --> 00:36:57.690

Andrew Freeman, MD, FACC, FACP: So it should be no surprise that when people eat better, and of course, when they exercise better, their breathing typically improves. And in this particular study, they looked at functional parameters like their forced expiratory volume and other things, and they had significantly slower, lung functional decline when eating a predominantly plant-based diet.

147

00:36:58.760 --> 00:37:26.979

Andrew Freeman, MD, FACC, FACP: As I mentioned before, about colorectal cancer, we are at an increasing rate. But this was a really interesting study that, looked at when people are overweight or obese has an impact on the colorectal cancer. It turns out, if you look at this carefully, you'll see that if you are overweight in any of the various times of life, they're relatively similar risk. But if you're obese in middle adulthood, you had a 55% more colorectal cancer risk.

148

00:37:28.830 --> 00:37:41.450

Andrew Freeman, MD, FACC, FACP: This was an interesting study out of Singapore. So these were Chinese folks living in Singapore followed for 20 years. If they followed a more Ketogenic diet, they ended up with a third almost a third, more colorectal cancer.

149

00:37:42.530 --> 00:37:54.779

Andrew Freeman, MD, FACC, FACP: Now many patients say to me, "well, Doc, I really want to cut my weight very drastically and very quickly, how can I do this safely?" And it turns out that if you are going to do a more ketogenic or a lower carbohydrate diet, consider doing it in a plant-based way.

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00:37:54.880 --> 00:37:59.060

Andrew Freeman, MD, FACC, FACP: In this interesting study that looked at 10 studies, nearly half a million people,

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00:37:59.160 --> 00:38:07.160

Andrew Freeman, MD, FACC, FACP: if they did, a low carb, plant-based diet reduced all-cause mortality, whereas an animal-based, low carb diet increased mortality.

152

00:38:07.170 --> 00:38:12.810

Andrew Freeman, MD, FACC, FACP: The plant-based low-carb group did not have a significant impact on the risk of cancer-related deaths.

153

00:38:12.890 --> 00:38:19.690

Andrew Freeman, MD, FACC, FACP: So bottom line is, if you do want to do a low carbohydrate diet, try to do it in a plant-based way.

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00:38:20.910 --> 00:38:37.840

Andrew Freeman, MD, FACC, FACP: In this interesting study, looking at 20 randomized control trials involving nearly 2,000 participants, it turns out that when people ate a vegetarian or vegan diet they significantly lowered their cholesterol, their blood sugar, their body weight and dietary impacts went beyond standard medical therapy.

155

00:38:39.240 --> 00:38:53.710

Andrew Freeman, MD, FACC, FACP: If you're worried about your sleep, it turns out in this small study that if you eat better, you sleep better, and that certainly makes sense. We all know that if we eat a very heavy meal and try to rest, it's sometimes difficult to do so, and this was measured using the Epworth Sleepiness Scale.

156

00:38:55.370 --> 00:39:24.690

Andrew Freeman, MD, FACC, FACP: Many people are surprised to learn that when people eat an anti-inflammatory diet their arthritis gets better, and this has been shown numerous times. This was a 16-week lifestyle program called Plants for Joints, and they followed 66 people who were randomized, 64 people completed, and at 16 weeks the Intervention group had a significant improvement in their WOMAC score. WOMAC is Western Ontario McMaster University Osteoarthritis Index, which is a way of measuring how bad the arthritis is, and, as you would imagine,

157

00:39:25.090 --> 00:39:31.269

Andrew Freeman, MD, FACC, FACP: they lost significant weight, fat mass, and waist circumference compared to the usual standard dietary group.

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00:39:32.940 --> 00:39:52.660

Andrew Freeman, MD, FACC, FACP: You might be following the New York Times. The New York Times has had a huge amount of focus in the last several years on diet and lifestyle, and this was a great one that talked about the link between highly processed foods and brain health. Eating packaged foods like cereal and frozen meals is associated with anxiety, depression, and cognitive decline.

159

00:39:54.300 --> 00:40:08.789

Andrew Freeman, MD, FACC, FACP: There was one study for those of you that are drinking red wine that might show benefit. And this was an interesting study, using men: 42 men. And they looked at the gut microbiota analysis. The TMAO did not change.

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00:40:08.840 --> 00:40:16.450

Andrew Freeman, MD, FACC, FACP: It turns out that there were some positive changes in the gut microbiota and their metabolites after red wine consumption.

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00:40:16.560 --> 00:40:22.990

Andrew Freeman, MD, FACC, FACP: So again, this is not me telling you to drink red wine. But if you do drink, maybe consider drinking red wine and limit it altogether.

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00:40:24.380 --> 00:40:37.999

Andrew Freeman, MD, FACC, FACP: Now, let's say, after I reviewed just this years' worth of data, you decided that none of it resonates with you. Maybe you'll do it for the environment. And if you haven't noticed, the environment around us is changing rapidly, and as of right now we only have one planet to live on.

163

00:40:38.140 --> 00:40:52.920

Andrew Freeman, MD, FACC, FACP: And so we are expecting significantly more extra hot days and heat emergencies as time goes on, and this has a significant impact on the number of people who die every year, and the overall effect could be up to 5 times the number of cardiovascular deaths as time goes on.

164

00:40:53.950 --> 00:41:22.450

Andrew Freeman, MD, FACC, FACP: If you look at this interesting analysis of 55,000 various types of eaters, it turns out that, comparing to a meat-based diet, a Vegan diet, results in just a quarter of greenhouse gas emissions, a quarter of land use, less than half of water use, and 34% of biodiversity loss. The authors concluded that, despite substantial variation due to where and how the food is produced, the relationship between environment and animal-based food consumption is clear and should prompt the reduction of the latter.

165

00:41:23.190 --> 00:41:34.540

Andrew Freeman, MD, FACC, FACP: If you look at a life cycle assessment which is a method to evaluate the environmental footprints, a Vegan diet had just 44% less total environmental impact when compared to the Mediterranean diet.

166

00:41:34.670 --> 00:41:49.340

Andrew Freeman, MD, FACC, FACP: Remember that a true Mediterranean diet, as I mentioned before, is a predominantly plant-based diet, and even a minimal to moderate content of animal foods, the authors say, has a consistent impact on the environmental footprint of the diet and production is powerful.

167

00:41:50.770 --> 00:42:09.559

Andrew Freeman, MD, FACC, FACP: I was floored, and I know that you guys are not far from Hershey, but floored to see a plant-based peanut butter Cup and Hershey bar come out recently. I couldn't believe it, but I think there's enough pressure on a variety of companies out there to produce slightly more healthful options. Now, again, not an endorsement to go out and buy

168

00:42:09.560 --> 00:42:24.549

Andrew Freeman, MD, FACC, FACP: a variety of Hershey's products, because, again, these are highly sweetened and processed foods that I would recommend you limit. But they're available at your local Target and Walmart, and wherever you may shop, so options are coming.

169

00:42:24.920 --> 00:42:31.779

Andrew Freeman, MD, FACC, FACP: As you may have seen in Europe. animal meat and milk sales were dropping, and Vegan versions were hitting record highs.

170

00:42:32.570 --> 00:42:51.410

Andrew Freeman, MD, FACC, FACP: A lot of people talk to me about cost, and you all may hear a lot about this with patients, but it turns out that a whole food plant-based diet is actually the cheapest diet to eat, even when you adjust it to bigger calorie loads, and when you go out to dinner the cost, even though it may cost more in the restaurant, the actual cost to produce the meal is significantly less.

171

00:42:51.660 --> 00:42:56.549

Andrew Freeman, MD, FACC, FACP: Then you might say, well, maybe it's time to make the FARMacy dispense (with an F, not a Ph)

172

00:42:56.780 --> 00:43:03.539

Andrew Freeman, MD, FACC, FACP: In this interesting study of 22 produce prescription locations, food insecurity dropped significantly.

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00:43:04.110 --> 00:43:13.249

Andrew Freeman, MD, FACC, FACP: People, self-reported health status increased significantly, particularly in children. Hemoglobin A1C, a measure of diabetes dropped, blood pressure dropped, and body mass index dropped.

174

00:43:13.380 --> 00:43:34.950

Andrew Freeman, MD, FACC, FACP: I would argue, if you look now in the era of Wegovy and Ozempic, and all these drugs that we're giving out, is it cheaper to spend the \$1400, \$1500, \$2000 a month on those, or is it cheaper to give a family a produce box, or a bean box, or a salad box, or whatever it may be? I know the answer in my mind, but I'll leave it for you to determine.

175

00:43:35.880 --> 00:44:01.679

Andrew Freeman, MD, FACC, FACP: This was interesting, as you probably know, much of the developing world is now experiencing many health crises. And this is happening now in China, as their middle class is significantly expanding, and it turns out that 2/3 of diet related cardiovascular deaths can be attributed to low intakes of whole grains, fruits, vegetables, and nuts, and it was a suboptimal diet was responsible for nearly 16 million disability adjusted life years and the rates are going up.

176

00:44:02.220 --> 00:44:03.070

Andrew Freeman, MD, FACC, FACP: -

177

00:44:04.760 --> 00:44:31.559

Andrew Freeman, MD, FACC, FACP: The last part of this is a plug for some of the mindfulness activities that are out there. But a prospective, non-randomized study was conducted at a tertiary care center, including 75 heart failure patients. 35 participants were in the interventional group. 40 were in the non-interventional group, and it turns out that people who practice Yoga actually had echocardiogram improvement, meaning their heart, actually became better.

178

00:44:31.580 --> 00:44:38.269

Andrew Freeman, MD, FACC, FACP: The functional classes were assessed. And it turns out significant improvement in the interventional group that underwent Yoga.

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00:44:39.990 --> 00:44:50.950

Andrew Freeman, MD, FACC, FACP: If you want to remember 5 important things in this interesting study of nearly 1.5 million people, you want to keep your body mass index, blood pressure, non-HDL cholesterol, smoking and diabetes in check.

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00:44:51.030 --> 00:44:58.449

Andrew Freeman, MD, FACC, FACP: If you could get all 5 of those you could significantly reduce the incidence of cardiovascular disease by more than half.

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00:44:58.920 --> 00:45:07.630

Andrew Freeman, MD, FACC, FACP: The authors concluded that nearly 20% of deaths among women and men may be attributable to these 5 modifiable risk factors.

182

00:45:08.840 --> 00:45:19.920

Andrew Freeman, MD, FACC, FACP: For those of you still eating fish: this may change your mind, but it turns out that some fish may recognize themselves, suggesting that they may be sentient beings which many people did not think.

183

00:45:19.990 --> 00:45:21.899

Andrew Freeman, MD, FACC, FACP: So interesting study here.

184

00:45:23.070 --> 00:45:34.030

Andrew Freeman, MD, FACC, FACP: And then for those of you that follow our ACC professional guidelines, I get to sit on one of the committees that gives the final once over. So every so often I have a little bit of influence, and this is one on heart failure.

185

00:45:34.120 --> 00:45:38.800

Andrew Freeman, MD, FACC, FACP: I was able to put this in there because the author somehow forgot it.



186

00:45:38.820 --> 00:45:52.169

Andrew Freeman, MD, FACC, FACP: Poor nutrition may result in worse heart failure outcomes. In line with the prevention guidelines a low salt plant, forward diet has robust evidence to aid in the management of heart failure with reduced ejection fraction, including their common morbidities.

187

00:45:53.070 --> 00:46:12.389

Andrew Freeman, MD, FACC, FACP: I also have gotten in the past to oversee our intensive cardiac rehab program, which, as you may know, there are two flavors in the United States available Pritikin and Ornish. Ours was the Ornish variant. So what this is a 9 week program participants go twice a week for 4 hours at a time, and they learn how to eat and stress and connect with others and exercise.

188

00:46:12.390 --> 00:46:23.539

Andrew Freeman, MD, FACC, FACP: It has a massive effect on reducing cholesterol, triglycerides, blood pressure, A1C, depression, etc., and year after year, quarter after quarter. The results are just, mind-blowingly positive.

189

00:46:24.060 --> 00:46:40.959

Andrew Freeman, MD, FACC, FACP: So with all of that, success is a low fat 100% whole grain minimally processed, whole food, plant-based diet. If you don't believe me, maybe you'll believe Albert Einstein, who said "nothing will benefit human health and increase our chances of survival for life on Earth as much as the evolution to a vegetarian diet".

190

00:46:41.520 --> 00:47:05.600

Andrew Freeman, MD, FACC, FACP: I do a wonderful program which is done in some parts of the country. I don't know if there's one in the Philly metro area, but see if you can find a doctor, get them inspired to do it. But it's a program called Walk with a Doc, where we walk the walk and talk the talk and eat the eat, and give out a plant-based breakfast that is really quite delicious and easy and surprisingly powerful way to motivate people to change their lifestyle habits.

191

00:47:06.300 --> 00:47:19.009

Andrew Freeman, MD, FACC, FACP: We also have a lovely, plant-based support group where we have a lovely RD who leads it and hosts it with a bunch of other community leaders to help people that are transitioning in this way.

192

00:47:19.700 --> 00:47:34.119

Andrew Freeman, MD, FACC, FACP: And if you're not convinced, after all of this, do your own research read some of these books, watch some of these documentaries get excited about knowledge, because once you take a deep look, there's really no turning back. So with that, I've left some time for questions.

193

00:47:41.250 --> 00:47:48.509

Lisa Diewald, MS, RD, LDN: Thank you, Dr. Freeman. I'm just going to share my screen for a couple quick moments, so you can

194

00:47:48.670 --> 00:47:55.359

Lisa Diewald, MS, RD, LDN: kind of catch your breath. So as far as CE

195

00:47:55.450 --> 00:48:06.950

Lisa Diewald, MS, RD, LDN: credits go, a link to an evaluation will be sent within a day or two, most likely tomorrow. Remember that RNs must complete the evaluation to receive a CE certificate.

196

00:48:07.470 --> 00:48:28.279

Lisa Diewald, MS, RD, LDN: And dieticians, although completing an evaluation, is not required, we really appreciate your feedback, and we use it. In fact, we've received feedback to include more plant-based eating webinars, And so your feedback has helped us bring Dr. Freeman to us today. So if you don't see the evaluation, simply look in your spam folder

197

00:48:28.310 --> 00:48:41.310

Lisa Diewald, MS, RD, LDN: and look for your CE Certificate in the next one or two days. We do have several questions for Dr. Freeman, but if you'd like to send in a few more as time permits, we will entertain them. I just want to

198

00:48:41.930 --> 00:49:07.580

Lisa Diewald, MS, RD, LDN: also encourage you to attend our last of our three-part plant-based eating series, Dr. Malcolm Bevel, from Augusta University, Georgia Cancer Center will be taking a look at the link between food environments, such as food swamps and food deserts and obesity related cancer outcomes as well as share with us some interventions that are showing some promise and true effectiveness. So registration information may be found

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Lisa Diewald, MS, RD, LDN: on the Villanova University, MacDonald Center for Nutrition, education and research website.

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Lisa Diewald, MS, RD, LDN: We are developing our Winter Spring Webinar Series. So information will be posted shortly. But just a sneak peek: We will be, including presentations on the use of AI in public health nutrition,

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Lisa Diewald, MS, RD, LDN: and a look at chrono nutrition, which is the timing of meals and the impact on health in older individuals. So we hope you'll stay tuned for more information on that.

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Lisa Diewald, MS, RD, LDN: And with that oh, my goodness, we have lots of questions. So let's take a look at them, Dr. Freeman. I'll call through some of these. We often get questions about soy, you know. And here it's, why does Soy have such a bad rep? Is it true men should avoid or limit soy products? And I

want to add to that, you know, soy milk is often promoted as part of a whole foods plant-based diet. But is there a limit?

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Lisa Diewald, MS, RD, LDN: I, personally could drink soy milk all day. It's so delicious.

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Lisa Diewald, MS, RD, LDN: But it what do you recommend from that?

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Andrew Freeman, MD, FACC, FACP: Yeah, first, let me just comment that in general the vast majority of parts of Asia consume soy every day, and their men are not becoming women. Yes, it is a phytoestrogen. But remember, the most potent phytoestrogen that people consume regularly, believe it or not, comes from beer. There is a very long chemical compound called APN. For short, that your gut Flora produced. And it's actually a super potent phytoestrogen.

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00:50:32.920 --> 00:51:00.180

Andrew Freeman, MD, FACC, FACP: But in general it has a bad rap, because people are worried about estrogens. But I would tell you that it is a great and tasty source of protein, and the goal is to get organic non-GMO soy. As you may know, some of the roundup glyphosate issues are occurring because people have developed roundup resistant soybeans, meaning that you can spray them with roundup, and they don't die, but the weeds around them do.

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Andrew Freeman, MD, FACC, FACP: And so, of course, when you get those soybeans, there may be residue of some of these chemicals you don't want to consume. So in general organic non-gmo, whenever it's possible.

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Andrew Freeman, MD, FACC, FACP: and then in terms of the risk for cancers believe it or not, the people who consume soy products regularly actually usually have lower risks of cancer, even breast cancer. The thought is that the phytoestrogens occupy the same receptor sites that native estrogens do, but are less potent in activating them. So in general, not sure why Soy has a bad

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00:51:27.270 --> 00:51:38.579

Andrew Freeman, MD, FACC, FACP: name, and then, in terms of is there too much soy milk to drink? I mean, I think the perfect beverage for human consumption remains water, but I, too, will put soy milk in my coffee if I don't drink it black.

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00:51:38.825 --> 00:51:43.070

Andrew Freeman, MD, FACC, FACP: You know, and it's a great convenient way to get a decent amount of protein without much effort.

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00:51:43.140 --> 00:51:55.920

Andrew Freeman, MD, FACC, FACP: Be careful when you buy soy milk. The goal is to get soy milk that the ingredients are soybeans and water. There is a lot of additives that you can find in the store, and of course, if you drink soy milk and it tastes like candy, it's definitely been adulterated.

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00:51:56.450 --> 00:52:13.780

Lisa Diewald, MS, RD, LDN: Okay, all right. And like a deep dive here question on the study you presented on eggs and diabetes. So did the study on eggs and diabetes control for other issues, such as exercise the rest of the person's diet? Or did it just simply look at egg consumption and diabetes?

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00:52:13.780 --> 00:52:26.640

Andrew Freeman, MD, FACC, FACP: Yeah, there, you know, there's a lot of confounders in nutrition science. And you've seen lots of people publish on this in the last several years, but in general it's not just one study, but probably a dozen at this point. In the last, probably decade or more.

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00:52:26.640 --> 00:52:48.930

Andrew Freeman, MD, FACC, FACP: A lot of them are out of China, but some are out of Europe, and some in the US that show that egg consumption seems to be associated with worse cardiovascular outcomes and also increased risk of diabetes. You remember that an egg the USDA has never been able to put the word healthy on an egg, or the Egg company has never been able to put healthy on it because of the USDA regulations, saying that cholesterol is too much in an egg.

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Andrew Freeman, MD, FACC, FACP: So in general, if you said to me, What can you eat instead of an egg? There's a whole variety of products that have come out that are made out of things like mung beans, which are naturally yellow, as you may know, you can find a Mung bean patty, that's surprisingly high in protein and low in fat and cholesterol in your freezer section. That is a great substitute, if you really need that, or, of course, a good old fashioned tofu scramble is always tasty.

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00:53:10.040 --> 00:53:13.450

Andrew Freeman, MD, FACC, FACP: I would encourage you to limit eggs overall.

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00:53:13.460 --> 00:53:23.259

Andrew Freeman, MD, FACC, FACP: If you must consume eggs, I would encourage you to find either European eggs which are hard to find here or your neighbor's backyard chicken eggs, and then eat the egg whites only in as little as you're willing or able.

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00:53:24.140 --> 00:53:27.950

Lisa Diewald, MS, RD, LDN: Okay. And I'm going to plug one question in here just because it's

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Lisa Diewald, MS, RD, LDN: burning in my mind. I have to be selfish here and ask this question. You mentioned that inflammation is, you know, the key to everything, and I'm just wondering how available c-reactive protein is for the general

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00:53:41.810 --> 00:53:51.870

Lisa Diewald, MS, RD, LDN: person going to the doctors for an annual physical. Is there anything in the future where we would expect that to be part of the screening?

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Andrew Freeman, MD, FACC, FACP: I mean, I would tell you, yeah, I do it on 100% of my patients. So it is widely available. I usually recommend getting the high sensitivity c-reactive protein. If your doctor is not screening for that, ask them to. Most of them won't mind. Many of them may not know what to do when they're elevated, however, so just be wary.

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00:54:10.070 --> 00:54:22.679

Lisa Diewald, MS, RD, LDN: Okay, got it. You've gone through many medical conditions and reasons to support a plant-based diet. Is there any situation or any medical condition where you would not recommend a whole food, plant-based diet.

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Andrew Freeman, MD, FACC, FACP: I mean, probably not. You know, if you said to me that I have a patient who has life threatening allergies to every plant on the planet,

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Andrew Freeman, MD, FACC, FACP: yeah, I guess that I would probably not recommend that they eat plants. I think in general; I've never met a person with that. I've certainly met patients with allergies to various fruits or vegetables and working around that is important. I think in general, our food supply in this day and age is extremely contaminated at every level.

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Andrew Freeman, MD, FACC, FACP: Even in parts of the world that are previously not been contaminated. And of course, as we go higher in the food chain, the toxins concentrate. So eating lower in the food chain doesn't make you immune from toxins, it just makes it less likely to get more toxins, so in general

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00:55:07.880 --> 00:55:12.889

Andrew Freeman, MD, FACC, FACP: do your best. I always tell people: if you can eat like a peasant, you can feel like a king or a queen.

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00:55:13.880 --> 00:55:36.439

Lisa Diewald, MS, RD, LDN: Okay. And this is a perennial question. Dieticians get all the time. What's the research surrounding coconut products? You know, we have patients who use coconut products in their hair and on their skin and in their food products and so forth. Is there anything recent out there that specifically can help us

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Lisa Diewald, MS, RD, LDN: feel confident in either recommending or not recommending coconut oil and other coconut products?

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Lisa Diewald, MS, RD, LDN: -

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Andrew Freeman, MD, FACC, FACP: Yeah. So you know, what I always tell people is, be wary of these giant tubs of coconut oil that are widely available, that are big warehouse stores. So first, st all of the heart professional societies have a specific recommendation against tropical oils, and that



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00:55:58.720 --> 00:55:59.889

Andrew Freeman, MD, FACC, FACP: includes coconut oil.

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Andrew Freeman, MD, FACC, FACP: And the reason is coconut oil actually contains more saturated fat than lard, and years ago, before my time, researchers would feed rats their body weight in coconut oil to induce atherosclerosis. So what I usually tell people is to avoid them. It's an amazingly decadent tasty oil.

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00:56:17.230 --> 00:56:43.290

Andrew Freeman, MD, FACC, FACP: Coconut products in general are usually higher in fat. So if you're eating the coconut, you know, as the coconut meat, if you will, I would probably limit that overall. But you don't have to avoid it altogether, but the purified fat, the oil that comes out I would avoid in terms of using it topically. I think that's fine. I would caution you particularly in your climate in mind that in the winter, when that coconut oil hits the pipes, it congeals and can create a problem.

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00:56:43.667 --> 00:56:48.950

Andrew Freeman, MD, FACC, FACP: So be careful. But other than that, I'd recommend not consuming coconut oil regularly.

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Lisa Diewald, MS, RD, LDN: Okay, thanks. Thank you for that clarification. Two questions regarding exercise. Is there a specific one type of Yoga that's beneficial? And the second question is the BDNF study that you presented talked about six minutes of vigorous biking I think it was. Can you recall whether that's per day? per

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00:57:10.160 --> 00:57:12.700

Lisa Diewald, MS, RD, LDN: 3 times per week?

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00:57:13.090 --> 00:57:42.949

Andrew Freeman, MD, FACC, FACP: Yeah, I think in general, that was per episode, that they did it. So I would say this: in general, my recommendation is that people get 30 min a day of some form of breathlessness, and what I usually recommend for many patients is to consider high intensity interval training, which gives you both weights and cardio. The way that I would explain, recently someone told me I thought this was pretty clever, cardio in a lot of ways is like short term investing and muscle building is like long term investing, and you want a little bit of both.

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00:57:42.950 --> 00:58:06.339

Andrew Freeman, MD, FACC, FACP: So if you can get high intensity, interval training I think that's great. In terms of yoga, there was a particular type of yoga that was done, but I would tell you that there have been numerous different studies, showing different flavors of Yoga, showing improvement in outcomes, and what I would tell the audience, particularly for those that don't resonate with doing Yoga regularly, consider finding some form of mindfulness, activity. It doesn't have to be yoga.

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00:58:06.450 --> 00:58:30.829

Andrew Freeman, MD, FACC, FACP: So you may be familiar with the work out of Hopkins with mindfulness, based stress reduction. There's a whole variety of different meditative techniques, Really, whatever works for you. Some people, you know, might remember that if they go out for a walk or a run or a hike, and some of you have had this experience where you end up where you started, and you finished a 5 mile or a 10-mile hike and had no idea how you got there. That's the zone you're looking to get into.

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00:58:31.860 --> 00:58:32.860

Lisa Diewald, MS, RD, LDN: Okay.

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00:58:33.390 --> 00:58:36.529

Lisa Diewald, MS, RD, LDN: all right. There's one more of a

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00:58:36.670 --> 00:58:53.900

Lisa Diewald, MS, RD, LDN: question on I guess policy, there's no doubt, that plant-based eating should be a priority. How can you help explain all the evidence for plant-based diet when government does not subsidize farmers to help promote fruits and vegetables, and it feels like the environment is set up against this way of eating?

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Andrew Freeman, MD, FACC, FACP: Well, that's a loaded question I can't answer in 2 min, unfortunately, but I guess what I would say is that it takes a village to get all of this done, and I would encourage you all when you have an opportunity to speak to your senators, your local Congress people, your State senators and and legislature, and whatever whoever else is willing to hear.

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00:59:14.941 --> 00:59:37.799

Andrew Freeman, MD, FACC, FACP: You know I'm slightly optimistic that if that guy Kennedy has anything to do with it, he's sort of been speaking this way. He has some interesting thoughts on lots of other things, but at least in the food space appears to be trying to get our food supply to be healthier, so maybe they'll listen to this. But I would tell you that promoting the concept of the American curse

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Andrew Freeman, MD, FACC, FACP: is a really powerful thing. And we've all seen this where people in their fifties, sixties, seventies, become completely, suddenly, sometimes non-productive after they've had a heart attack or a stroke or dementia develops, and it is a sad thing that is mostly avoidable.

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00:59:54.190 --> 01:00:05.119

Andrew Freeman, MD, FACC, FACP: You could certainly make arguments in the more recent elections that many of the candidates up or were up, had dementia and lived the American curse in front of the American people.

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01:00:05.380 --> 01:00:18.810

Andrew Freeman, MD, FACC, FACP: And so now we need to do something to avoid that, and pivot towards productive society till the very end, and, as I always tell my patients, is my goal, is for all of them to live a long, healthy life with the least amount of suffering.

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01:00:18.960 --> 01:00:26.599

Andrew Freeman, MD, FACC, FACP: Ideally avoid a heart attack, stroke, or dementia, which I think are really not only demoralizing, but it's just a very difficult way to live.

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01:00:26.880 --> 01:00:27.490

Andrew Freeman, MD, FACC, FACP: Yeah.

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01:00:27.740 --> 01:00:38.490

Lisa Diewald, MS, RD, LDN: Okay? And just one more. One more question. People with IBS have trouble eating fiber, particularly certain types of fiber. And it does, you know, I think

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01:00:38.620 --> 01:00:47.559

Lisa Diewald, MS, RD, LDN: many of us dietitians have worked with folks who really struggle with that and it makes plant-based eating difficult.

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01:00:47.600 --> 01:00:50.189

Lisa Diewald, MS, RD, LDN: Do you have any suggestions for that?

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01:00:50.190 --> 01:01:19.429

Andrew Freeman, MD, FACC, FACP: Yeah. So I take care of a lot of people who have. First, we should separate out inflammatory bowel conditions and IBS which lots of folks have. I would say that for either, and both of them a lot of times, it's just a slow introduction. So I would argue, even if you have perfectly normal GI tract. If you suddenly change from a standard American diet to a predominantly plant-based

bean filled diet, GI Distress usually ensues, so people will have gas or diarrhea, or constipation, both or all.

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01:01:19.460 --> 01:01:25.590

Andrew Freeman, MD, FACC, FACP: And so, having people make some of the changes a little more slowly if they're sensitive, is really powerful.

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01:01:25.610 --> 01:01:42.159

Andrew Freeman, MD, FACC, FACP: There are going to be some patients who they can't tolerate beans or some leafy greens, or whatever it is, and it's just important to keep trying. I found that in a number of my patients that if they chop their vegetables quite finely, it seems to help so you could try that as well.

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01:01:42.542 --> 01:01:48.159

Andrew Freeman, MD, FACC, FACP: So there's not one answer here, but really a lot of trial and error.

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01:01:48.960 --> 01:02:04.869

Lisa Diewald, MS, RD, LDN: Yeah. I think just the whole idea of moving on a continuum, you know, taking the steps that are possible and practical and sustainable towards that ultimate goal is progress, and anything we can do as health professionals to kind of

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01:02:04.950 --> 01:02:25.580

Lisa Diewald, MS, RD, LDN: move folks forward in that direction is wonderful. I want to thank you for spending the time with us today and sharing your perspectives and this like treasure trove of research. And we really appreciate it, and we wish you, you know we wish you the best. We need a walk with the Doc program here on the east coast, so I'm sure there's a

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01:02:25.710 --> 01:02:26.989

Lisa Diewald, MS, RD, LDN: a bunch of dietitians.

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01:02:26.990 --> 01:02:28.030

Andrew Freeman, MD, FACC, FACP: Check it out. Yeah.

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01:02:28.110 --> 01:02:39.210

Andrew Freeman, MD, FACC, FACP: yeah. "Walk with a doc.org." And we've had RDs as long as I've started the program. It's been going for a long time, so look around. See if you can find one. If not, get somebody in the Villanova area to start one up.

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01:02:39.500 --> 01:02:44.319

Lisa Diewald, MS, RD, LDN: Okay, all right. Thank you. Best of luck to you. And thank you. Thanks again.

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01:02:44.320 --> 01:02:45.309

Andrew Freeman, MD, FACC, FACP: You bet! Take care! Everyone.

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01:02:45.310 --> 01:02:45.920

Lisa Diewald, MS, RD, LDN: Thank you. Everyone.