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### Examining the Mediterranean Diet's Potential in Psoriasis Management

#### Announcer:

You're listening to *On the Frontlines of Psoriasis* on ReachMD. And now, here's your host, Dr. Charles Turck.

#### Dr. Turck:

Welcome to *On the Frontlines of Psoriasis* on ReachMD. I'm Dr. Charles Turck, and today I'm joined by Dr. Joel M. Gelfand, who's the Director of the Psoriasis and Phototherapy Treatment Center and the Director of the Center for Clinical Sciences in Dermatology at the University of Pennsylvania's Perelman School of Medicine. He's also a co-author of an ongoing study examining the impact of the Mediterranean diet on patients with psoriasis, which is what we'll be focusing on today.

Dr. Gelfand, it's great to have you with us.

#### Dr. Gelfand:

Great speaking with you again, Dr. Turck.

#### Dr. Turck:

Well, if we start with some background, Dr. Gelfand, would you explain the rationale behind exploring the Mediterranean diet as a potential intervention for psoriasis?

#### Dr. Gelfand:

So, what a lot of people may not recognize is that body weight is a key driver of developing psoriasis and impacts the natural course of psoriatic disease. So a variety of epidemiological studies have been done showing, essentially, a dose response: the higher someone's BMI is, the higher the risk is of developing psoriasis over time. And there have also been genetic studies called Mendelian randomization studies done, where you can look at people who have inherited certain genes that make them tend to be more overweight, and people who inherit those genes have a higher risk of developing psoriasis. So there's a clear relationship between weight and developing psoriasis. And then we've also shown in large studies involving thousands of patients that as the BMI—body mass index—increases, so too does the severity of the skin disease measured by the amount of skin involved with psoriasis. And then finally, we've also shown prospective studies that as people's BMI goes up, it increases their risk of developing psoriatic arthritis over time.

And then on top of all that, people with higher BMIs tend to not respond as well to our therapies for psoriatic disease and tend to be more likely to lose response to our therapies over time, and this is true of even our best, most effective treatments called biologics that are widely used for treating psoriatic disease. And so there's been a lot of interest for years in the field of psoriasis about figuring out what can we do about that. And a number of studies have shown that just caloric restriction alone—when people lose weight—can improve both skin and joint activity of people with psoriasis. But those diets are very hard to adhere to, and it's also not entirely clear what medical benefits they come with, and that's why we got interested in the Mediterranean diet. Of all the diets that have been evaluated, the Mediterranean diet has probably been the most carefully studied in multiple very large-scale studies involving thousands of individuals comparing that diet to other diets, typically low-fat diets, and it convincingly and repeatedly shows a lowering of cardiovascular events and mortality over time. And so that's really the main motivation behind the study.

So we know people with psoriasis have higher rates of cardiovascular disease and mortality, and our patients often are looking for

dietary guidance. And we want to understand if using the Mediterranean diet—which we know should lower the risk of cardiovascular events and mortality—would also improve their psoriasis. So that's the primary motivation behind this work.

**Dr. Turck:**

So what specific components of the Mediterranean diet are thought to influence the inflammatory processes associated with psoriasis?

**Dr. Gelfand:**

So, psoriasis is a classic inflammatory disease in the Th17/Th1 pathway. And the Mediterranean diet, which is very rich in fruits, vegetables, whole grains, and what's considered to be healthy fats—usually derived from olive oil, nuts, or avocados—is felt to have other ways it could intervene in inflammatory diseases. So fruits and vegetables tend to be rich in antioxidants and polyphenols, which, in theory, should help combat inflammation. Whole grains provide fiber and improve gut health. Olive oil contains something called oleocanthal, which has strong anti-inflammatory properties. Similarly, nuts and avocados also have healthy fats. And then fish tends to be rich in omega-3 fatty acids, which also has anti-inflammatory effects. And really, the question is, do the effects of these nutrients really improve the skin disease of psoriasis? We know it can lower cardiovascular risk, which is obviously very important in and of itself, but what we need to understand is if it actually exerts anti-inflammatory effects in a way that it improves psoriasis.

**Dr. Turck:**

Now let's zero in on your study. How is it designed, and what are the specific objectives?

**Dr. Gelfand:**

So it's a randomized controlled study. It obviously cannot be blinded. The patients are going to know which strategy they were randomized to, but the person who looks at their psoriasis and does the examination of the skin will be blinded, so they won't know which arm of the study the patient was randomized to. And so those randomized to the Mediterranean diet will be given instructions about how to do the Mediterranean diet, which essentially involves lots of fruits, vegetables, whole grains, and an extra virgin olive oil: roughly four tablespoons of extra virgin olive oil a day, which is a lot, I think, for those of us who have a more traditional US diet. Although I personally love extra virgin olive oil with my food, I don't necessarily think I have four tablespoons a day. And then at least three servings a week of fish, seafoods, legumes like beans and nuts, and things of that nature. When it comes to fish, oily fishes like salmon are preferred, and then they should limit to one serving a day things such as white meats like poultry and turkey, eggs, and low fat dairy, and then limit to one serving a week things like red meats and sweets, which I think is not so easy to do. At least for me, I personally like my sweets in my diet for sure. And then the control group gets general nutritional advice about a standard healthy diet, but not necessarily the Mediterranean diet per se.

And then over time, we'll be looking at roughly 38 patients that will have been randomized into the clinical trial and we'll be following them to see what it does to their skin, health-related quality of life, and markers of inflammation in the blood, with the primary readout being at week 16, roughly four months of this dietary intervention. So it's pretty similar to how we do a clinical trial of a pharmaceutical for management of psoriasis. Usually, the primary readout is at week 12 or week 16.

**Dr. Turck:**

For those just tuning in, you're listening to *On the Frontlines of Psoriasis* on ReachMD. I'm Dr. Charles Turck, and I'm speaking with Dr. Joel M. Gelfand about his study on how the Mediterranean diet might impact patients with psoriasis.

So if we continue looking at your study, Dr. Gelfand, is there anything else you can tell us about the efficacy outcomes you're measuring to assess the effectiveness of the Mediterranean diet?

**Dr. Gelfand:**

I should emphasize by the way, Dr. Turck, that this is being done in collaboration with or really led by my colleague Dr. Alvaro González-Cantero. He's a dermatologist in Madrid. Their university in Madrid has been a leader in studying the Mediterranean diet—what they call the Med diet—in these very large-scale clinical trials involving thousands of patients, so they're very well-suited, and the studies are occurring in Madrid, not in the United States. The outcomes are very typical and that you expect to see in a clinical trial of psoriasis. We're looking at PASI, which is basically how much of the body area is involved with psoriasis and how thick, red, and scaly the plaques are. It's looking at health-related quality of life relevant to skin disease, called the Dermatology Life Quality Index. And then we'll also look at a variety of metabolic factors and inflammatory markers in the blood of these patients.

**Dr. Turck:**

Now, as you and your co-authors gather and analyze the data, are there any findings or results you're hoping to see?

**Dr. Gelfand:**

I think, first and foremost, what we want to see is an improvement in patients' skin and also that the patients perceive it as being better as well, right? So the key thing in the field of dermatology is that we may see objective benefits of a therapy in terms of what the doctor is rating a skin as, but what you really want to know is what the patient's perspective is. So we're hoping to see both of those measures improve. We're hoping to see the PASI score decrease in what we view as a clinically meaningful way, which would be reduction by at least three points or so from baseline, but we're also looking to see that their Dermatology Life Quality Index improves in a meaningful way. Those are the most important outcomes in my mind. And then we hope that the biomarkers in the blood fit our hypothesis, so do we see a reduction in systemic inflammation in patients undergoing this dietary intervention compared to those on a regular diet? And then finally, and probably most importantly, is how well can patients adhere to this diet? It may be that in Madrid it's relatively easy to adhere to a Mediterranean diet because many restaurants and households in Spain are already interested in diets rich in fish, olive oil, nuts, and legumes, and eating less things like red meats and sweets compared to the type of diet we have in the United States.

**Dr. Turck:**

And before we close, Dr. Gelfand, how could the findings potentially impact future dietary recommendations for individuals living with psoriasis?

**Dr. Gelfand:**

Well, we should add the caveat that it's a relatively small study, roughly 37, 38 patients or so that will enter it, but to me, it could have a major impact on how we talk to patients, because when you look at surveys done by the National Psoriasis Foundation, patients overwhelmingly want to know about the impact of diet on their psoriasis. And roughly 80 percent or more of patients are doing their own dietary interventions to try and see if it will improve their psoriasis, but less than a third of people actually talk to their healthcare providers about how diet influences their psoriasis. So what we'd love to have is an evidence-based approach to recommend to patients and be able to say, "If you try a Mediterranean diet, it's known to lower your risk of heart disease and stroke, but also is likely to improve your psoriasis." That would be a major motivating factor and would address a big source of frustration for patients and clinicians as well. This is a stubborn chronic disease. Patients often are looking for answers beyond traditional pharmaceutical approaches to managing it, and we want to be able to give patients the best evidence available to make lifestyle choices that are acceptable and manageable for them and that we can ultimately feel confident will lead to better outcomes for them.

**Dr. Turck:**

Well, I certainly hope I have the chance to speak with you again once you get the final results. But for now, I want to thank my guest, Dr. Joel M. Gelfand, for joining me to discuss his ongoing study focusing on the Mediterranean diet in patients with psoriasis. Dr. Gelfand, it was great speaking with you today.

**Dr. Gelfand:**

Great speaking with you again, Dr. Turck.

**Announcer:**

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