



## VOLUME 2 — ISSUE 1: TRANSCRIPT, DR. FRANKIE STENTZ

**DR. KATHLEEN DUNGAN:** I'm Dr. Kathleen Dungan, eDiabetes Review program director. I'm speaking with Dr. Frankie Stentz from the University of Tennessee Health Science Center in Memphis, and one of the authors of the study about diet and prediabetes presented at the ADA. Dr. Stentz, thank you for joining me today.

**DR. FRANKIE STENTZ:** I thank you for inviting me to discuss our studies on Remission of impaired glucose tolerance to normal glucose tolerance in obese adults with high protein vs a high carbohydrate diet.

**DR. DUNGAN:** Your study investigated the effect of diet in normalizing patients with impaired glucose tolerance. This is one of the key signals of prediabetes. Can you give us a brief summary of your findings?

**DR. STENTZ:** This was a six-month, randomized, prospective, controlled trial comparing a high protein diet to a high carbohydrate diet in obese women and men with prediabetes aged 20 to 50 years.

We found that 100 percent of the subjects on the high protein diet converted from prediabetes to normal, whereas only 30 percent of those on a high-carbohydrate diet converted to normal. Both groups had significant weight loss of around 10 percent; however, the subjects on the high protein diet increased their lean mass by 2.4 percent and decreased their fat mass by 2 percent, whereas the high carbohydrate group lost both lean mass of 2.2 percent and fat mass of 3.6 percent. Both groups had improvement in hemoglobin A1C, blood pressure, lipids, and insulin sensitivity, but the high protein group was more significantly improved at six months of diet than the high carbohydrate group.

**DR. DUNGAN:** How did the participants respond? Did they have difficulty complying with this regimen? And were there differences in compliance between the groups?

**DR. STENTZ:** We had approximately 90 percent greater compliance in both groups because both diets were nutritionally complete in fruits, vegetables, grains, milk products, and protein. If the participant did not like the items or were tired of them, their diet was adjusted with other entrees or food items that they preferred. They were 90 percent compliant, and most of them said that they had plenty of food and it was often hard to eat all of the food.

**DR. DUNGAN:** It was remarkable that you were able to do that with your patients. Many of us feel that prediabetes is neglected in the research that needs to be done, as one in three Americans are estimated have prediabetes. And without intervention, almost a third of them will go on to develop type 2 diabetes. Can you comment on how these statistics might apply?

**DR. STENTZ:** With the ever-increasing rate of obesity in the USA and worldwide, and obesity being the biggest risk factor for developing type 2 diabetes, I think these statistics are accurate. We had each subject keep a food history for a week before they started our study. It was amazing the excess caloric intake and high carbohydrate and high-fat foods these subjects were consuming, which I am sure is representative of the people across the US. With the high percentage of obesity we now have, I think it's critical that we do something to try to reverse this obesity rate and try to control the prediabetes that goes on to type 2 diabetes and increasing our medical health costs.

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**DR. DUNGAN:** Dr. Stentz, can you compare these results to other strategies, whether pharmacologic or exercise, in reversing prediabetes?

**DR. STENTZ:** Diet and exercise should be the first line of treatment of prediabetes. Although this study does not have an exercise monitoring component, the subjects were asked to maintain their current level of exercise throughout the study. According to their reporting, none of these subjects were exercising more than minimally. We hope to do further studies of any exercise monitoring component to get even better results, especially in the high carbohydrate group.

Medications such as metformin and pioglitazone can prevent the conversion of prediabetes to type 2 diabetes at 32 percent and 72 percent, respectively. But we're trying to go in the other direction, to normal glucose tolerance.

**DR. DUNGAN:** Do you think your results might help to guide clinicians to specific actions they should take when they identify someone with prediabetes?

**DR. STENTZ:** Yes, I think both obese and prediabetic subjects should have nutritional counseling and be put on an exercise program, even if it's just to start out initially with walking. I think this is all critical for each patient's health care.

**DR. DUNGAN:** Dr. Frankie Stentz from the University of Tennessee Health Sciences Center. Thank you for sharing your thoughts on normalizing impaired glucose tolerance.

**DR. STENTZ:** You're welcome. Thank you for inviting me to discuss our work.