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The new dietary approach for patients with diabetes: How and when to eat

Introduction & Aim: Reducing the postprandial glucose level is important to decrease the risk of cardiovascular diseases even before onset of diabetes. We reported that the glucose excursions were significantly lower when the subjects ate vegetable before carbohydrate compared to the reverse regimen in both individuals with and without diabetes. In this study we explored the acute effect of the late-night-dinner and the divided-dinner on postprandial glucose levels in people with and without type-2 diabetes.

Method: 16 patients with type-2 diabetes and 14 healthy women were randomly assigned to this cross-over study. Each participant wore a continuous glucose monitor for 5 days and consumed identical test meals from the second to the fourth day at home. Each participant consumed the test meals of breakfast at 08:00, lunch at 13:00 and the half of the participants consumed dinner at 21:00 (D21) on the second day, 18:00 (D18) on the third day and divided dinner (DD: Carbohydrate at 18:00 and vegetable and the main dish at 21:00) on the fourth day. The rest of the participants consumed DD on the second day and D21 on the fourth day.

Result: D21 demonstrated higher Incremental Glucose Peak (IGP) and Incremental Area Under the Curve for Glucose (IAUC) than D18. On the other hand, DD ameliorated IGP, IAUC and the mean amplitude of glycemic excursion than D21 in both patients with type-2 diabetes and young women without diabetes.

Conclusion: This study demonstrated that consuming late-night-dinner led to postprandial hyperglycemia and this postprandial hyperglycemia can be ameliorated by consuming a divided dinner. Our findings demonstrate that the new dietary approach should be taken into consideration not only on the amounts of energy and macronutrient proportion, but also on how and when it was eaten in people with and without type-2 diabetes.

Biography

Saeko Imai has completed her PhD and is currently working as a Professor of the Department of Food and Nutrition in Kyoto Women's University, Japan. Previously, she was a Professor of Osaka Prefecture University and researched at Molecular Nutrition of Graduated School of Life and Environmental Science in Kyoto Prefectural University. She is the Councilor of Japan Society of Metabolism and Clinical Nutrition, Japan Society of Nutrition and Food Science and Japanese Society of Nutrition and Dietetics. She is also a Member of JDS (Japan Diabetes Society), ADA (American Diabetes Association) and EASD (European Association for the Study of Diabetes). She has authored the book *Eating vegetables before carbohydrate for patients with diabetes* in addition to more than 40 publications in international journals.

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