

## The Effects of Low-Calorie Diets on Abdominal Visceral Fat, Muscle Mass, and Dietary Quality in Obese Type 2 Diabetic Subjects (*Korean Diabetes J* 2009;33:526-36)

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We would like to express our appreciation to Dr. Lee for his letter and his interest in our manuscript, "The effects of low-calorie diets on abdominal visceral fat, muscle mass, and dietary quality in obese type 2 diabetic subjects." Our responses to Dr. Lee's comments follow.

As Dr. Lee noted, our study has some limitations, including a relatively small sample size that included only female patients. However, we wish to emphasize the controlled nature of this trial. In order to evaluate the clinical impacts of low calorie diets, all participating subjects were selected in a controlled manner so that the data could be adjusted for total energy expenditure and physical activity. A specifically female patient group was selected, because the reduction of visceral fat by low calorie diets is typically less in women than in men [1].

Although a healthy diet is a cornerstone to the reduction of overweight, long term body weight reduction and weight maintenance by simple reductions of dietary energy intake reduction were difficult to maintain. Previous research has shown that only about 20% of overweight individuals are successful at long-term weight loss when weight loss is defined as losing at least 10% of the starting body weight and maintaining the loss for at least one year [2]. Therefore, new strategies need to be developed to improve the achievement of this goal. The National Weight Control Registry (NWCR) provides information about the strategies used by successful weight loss maintainers to achieve and maintain long-term weight loss; these include

high levels of physical activity, eating a low-calorie, low-fat diet, eating breakfast regularly, self-monitoring weight, and maintaining a consistent eating pattern across weekdays and weekends [3]. We cannot answer Dr. Lee's question about effective weight loss and the rate at which successful weight loss is maintained, nor the most successful weight reduction strategy in Korean diabetic patients, as there have been no clinical studies or follow-up studies of weight reduction in Korean diabetic patients. However, Song et al. reported that the body mass indexes of diabetic patients who undertook a Structured Diabetes Education Program (SDEP) were similar to those of a conventional education group over four years of follow-up [4]. There is a clear need for Korean diabetic patients to implement more aggressive strategies for successful weight reduction. Additional clinical studies based on this strategy will be necessary to answer Dr. Lee's question.

As other reviewers note, recent data show that about 70% of Korean type 2 diabetes patients are overweight or obese. As there are few clinical dietary intervention studies on weight reduction in obese Korean type 2 diabetes patients [5,6], we look forward to additional clinical intervention studies and increasing the numbers of systemic studies of these issues in Korea through the implementation of our new guidelines. More studies are necessary to confirm these data and to properly consider various deviations in terms of dietary pattern and gender.

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Lastly, we completely agree with Dr. Lee's final comment regarding extending the study further by exploring the effects of low calorie diet on adipokines and inflammatory markers in type 2 diabetes patients. Such studies will give us more insight into the factors governing the relationship between reduction of visceral fat and improvement of insulin resistance without the reduction of muscle. Such a study is in progress at present, and we anticipate that these trials will provide us with answers that are urgently needed.

Thank you very much for taking interest in this study and also for your comments.

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