

## Reply

## Answer to Dr Di Flaviani and colleagues

To the Editor:

We are happy to be able to respond to the Letter to the Editor from Dr Alessandra Di Flaviani and colleagues regarding our previous study published in *Metabolism* in May 2008 (“Regular use of pedometer does not enhance beneficial outcomes in a physical activity intervention study in type 2 diabetes mellitus”).

Dr Di Flaviani writes that “no significant difference in weight, hemoglobin A<sub>1c</sub>, FBG, triglycerides, diastolic blood pressure, and high-density lipoprotein cholesterol was observed in those subjects who completed the study ( $P > .38$ ).” This is a misunderstanding. In our study, significant ( $P = .002$ – $.048$ ) improvement in all these parameters was observed when analyzing results for completers as one group. However, no significant difference in these results between the pedometer group and control group was found (all  $P$  values  $> .38$ ). Therefore, we concluded that our simple intervention program had moderate health benefits in our participants, but that the additional use of pedometer did not enhance these beneficial outcomes.

As in several previous studies promoting physical activity in sedentary groups [1–7], we had a high dropout rate. We could demonstrate a lower  $VO_{2peak}$  in dropouts than in subjects adhering to the protocol. These results indicate that persons who might be most needy of a change in lifestyle are less compliant in exercise programs, and we comment that creative strategies might be necessary to motivate such persons to increase their physical activity.

Dr Di Flaviani has conducted a study in type 2 diabetes mellitus patients in which the intervention group ( $n = 20$ ) was offered monthly counseling by a diabetes team in addition to wearing a pedometer. The control group ( $n = 20$ ) was offered every 3-month control and dietary advice, and did not use a pedometer. In the intervention group, the number of steps increased significantly to 8207 per day during the intervention period (6 months); and metabolic parameters improved. The increase in steps in her study might be attributed to the more frequent counseling in the pedometer group and not to the use of pedometer per se.

In our study, the frequency of visits and the amount of counseling were identical in the pedometer and nonpedometer groups. Both groups kept a logbook of all major

physical activities. Individual strategies to increase walking were discussed with the study nurse. Subjects in the pedometer group were encouraged to increase their daily number of steps from one visit to the next. Control subjects were also encouraged to increase their daily walking from one visit to the next, guided by the logbook. Thus, we have tested specifically the effect of pedometer as an adjunct to counseling to increase physical activity.

We have one more comment on the lack of increase in steps in our pedometer group. As seen in our Table 3, during month 1, the mean number of steps per day was 7628. This is a higher baseline walking activity than that reported by Dr Di Flaviani as well as in previous studies [3,8] on subjects with similar clinical characteristics. We have commented upon that in our Discussion, stating that our pedometer group may have increased walking shortly after enrolment, a possibility that could not be tested from available data. However, use of pedometer did not promote increased walking from month 1 through month 6, which was the target.

To conclude, our data demonstrate that a simple physical activity intervention program promotes moderate health benefits in type 2 diabetes mellitus patients; however, the use of pedometer did not enhance the beneficial outcomes. The positive results in Dr Di Flaviani’s study cannot separate an effect of pedometer use from effects of counseling.

On behalf of the authors,

Sincerely,

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