

# A counseling strategy was better than usual care for adopting and maintaining physical activity in type 2 diabetes

Di Loreto C, Fanelli C, Lucidi P, et al. Validation of a counseling strategy to promote the adoption and the maintenance of physical activity by type 2 diabetic subjects. *Diabetes Care*. 2003;26:404-8.

## QUESTION

In patients with type 2 diabetes mellitus, is a counseling strategy better than usual care for adopting and maintaining long-term physical activity?

## DESIGN

Randomized {allocation concealed\*}†, blinded {data collectors and data analysts}†, \* controlled trial with 2-year follow-up.

## SETTING

An outpatient diabetes clinic in Perugia, Italy.

## PATIENTS

340 patients  $\geq$  40 years of age (mean age 62 y, 53% women) who were diagnosed with type 2 diabetes  $\geq$  2 years previously. Exclusion criteria were an illness that could reduce life expectancy; or cardiac, liver, or renal failure. Follow-up was 99.1%.

## INTERVENTION

182 patients were allocated to a counseling strategy, which consisted of usual care plus a 30-minute structured counseling session recommending physical activity (goal energy expenditure  $>$  10 metabolic equivalents [METs]  $\times$  h/wk) with a discussion of 7 points to promote exercise (motivation, self-efficacy, pleasure, support, comprehension, lack of impediments, and diary) using a checklist; and a 15-minute telephone call 1 month after the initial counseling session and clinic visits every 3 months for 2 years to

determine adherence to planned physical activity, discussion of obstacles encountered, and reinforcement of original points from the initial visit. 158 patients were allocated to usual care (a 30-minute clinical examination, counseling for diet and physical activity, therapeutic prescriptions, general advice, and brochures about the benefits of healthy nutrition and regular physical activity).

## MAIN OUTCOME MEASURES

Levels of voluntary physical activity (assessed every 3 mo using the Modifiable Activity Questionnaire, and calculated as the product of the duration [h  $\times$  wk] of the different activities weighted by an estimate of the MET of each activity [METs  $\times$  h/wk]). Secondary outcome measures were body mass index (BMI) and hemoglobin A<sub>1c</sub> (HbA<sub>1c</sub>) levels.

## MAIN RESULTS

Analysis was by intention to treat. More patients in the counseling-strategy group achieved target energy expenditure through voluntary physical activity than did those in the usual-care group (Table). At 2 years, both BMI and HbA<sub>1c</sub> were decreased in the counseling-strategy group, whereas BMI increased in the usual-care group (Table).

## CONCLUSION

In patients with type 2 diabetes mellitus, a counseling strategy was better than usual care for adopting and maintaining physical activity.

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\*See Glossary.

†Information provided by author.

## Counseling strategy vs usual care for promoting physical activity in type 2 diabetes mellitus at 2 years‡

Outcomes	Counseling strategy	Usual care	RBI (95% CI)	NNT (CI)
Voluntary physical activity $>$ 10 METs $\times$ h/wk	69%	18%	288% (177 to 454)	2 (2 to 3)
	Mean change from baseline		Difference in mean change from baseline (CI)	
BMI	-0.4	0.6	1.0 (0.72 to 1.28)	
HbA <sub>1c</sub>	-0.6	-0.1	0.5 (0.37 to 0.63)	

‡METs = metabolic equivalents; BMI = body mass index; HbA<sub>1c</sub> = hemoglobin A<sub>1c</sub>. Other abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article.

## COMMENTARY

Empirical evidence of the effectiveness of physical activity counseling in primary care settings has been mixed (1), and the perception that it is ineffective may contribute to the low rates of physical activity counseling by physicians. Because physical activity is a vital component in the prevention and management of type 2 diabetes (2), clinicians need interventions that can be delivered within the constraints of primary care settings (e.g., limited time and staff resources). Di Loreto and colleagues used a physician-delivered counseling intervention that was associated with increased self-reported activity and improvements in BMI and HbA<sub>1c</sub>.

A strength of this study was the patient-centered intervention that incorporated such behavioral counseling strategies as enhancing self-efficacy, motivation, social support, problem-solving, patient self-monitoring, and clinician follow-up. Limitations of the study included the lack of blinding of the treating physicians, and a presumed clustering of patients to each of the 3 counseling physicians whose reported success was partly because they were "physically active." Despite these limitations, Di Loreto and colleagues showed that physicians can assist patients with lifestyle behavior changes that persist over time.

Future studies should include objective measures of physical activity to validate participant self-report, clarify the components of the intervention that may have the greatest success in a busy clinical practice, and determine the clinician characteristics and behaviors most associated with a change in patients' physical activity behavior. Physicians should be encouraged to learn more about behavioral physical activity counseling strategies (3), which can be useful for motivating patients to increase physical activity.

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## References

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