

Behavioral Counseling in Primary Care to Promote Physical Activity

Recommendations and Rationale

U.S. Preventive Services Task Force

This statement summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on counseling by primary care physicians to promote physical activity and the supporting scientific evidence, and it updates the 1996 recommendations contained in the Guide to Clinical Preventive Services, second edition.¹ Explanations of the ratings and of the strength of overall evidence are given in Appendix A and Appendix B, respectively. The complete information on which this statement is based, including evidence tables and references, is available in the article Counseling by Clinicians: Does It Improve Physical Activity?² (which follows this recommendation). This document can be obtained through the USPSTF web site (www.preventiveservices.ahrq.gov), through the National Guideline Clearinghouse (www.guideline.gov), or in print through the AHRQ Publications Clearinghouse (call 1-800-358-9295 or e-mail ahrqpubs@ahrq.gov).

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Summary of Recommendation

- The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against behavioral counseling in primary care settings to promote physical activity. **I recommendation.**

The USPSTF found insufficient evidence to determine whether counseling patients in primary care settings to promote physical activity leads to sustained

increases in physical activity among adult patients. Controlled trials of physical activity counseling in adult primary care patients were of variable quality and had mixed results. There were no completed trials with children or adolescents that compared counseling with usual care practices. Data on the feasibility and potential harms of routine physical activity counseling in primary care settings are limited. As a result, the USPSTF could not determine the balance of potential benefits and harms of routine counseling to promote physical activity in adults. The USPSTF reviewed only the literature on the effectiveness of primary care counseling to promote physical activity. It did not review the evidence for the effectiveness of physical activity to reduce chronic disease morbidity and mortality, which has been well documented in other recent reviews, or review evidence of counseling in other settings.

Clinical Considerations

- Regular physical activity helps prevent cardiovascular disease, hypertension, type 2 diabetes, obesity, and osteoporosis. It may also decrease all-cause morbidity and lengthen life-span.³
- Benefits of physical activity are seen at even modest levels of activity, such as walking or bicycling 30 minutes per day on most days of the week. Benefits increase with increasing levels of activity.⁴
- Whether routine counseling and follow-up by primary care physicians results in increased

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physical activity among their adult patients is unclear. Existing studies limit the conclusions that can be drawn about efficacy, effectiveness, and feasibility of primary care physical activity counseling. Most studies have tested brief, minimal, and low-intensity primary care interventions, such as 3 to 5 minute counseling sessions in the context of a routine clinical visit.

- Multi-component interventions combining provider advice with behavioral interventions to facilitate and reinforce healthy levels of physical activity appear the most promising. Such interventions often include patient goal setting, written exercise prescriptions, individually tailored physical activity regimens, and mailed or telephone follow-up assistance provided by specially trained staff. Linking primary care patients to community-based physical activity and fitness programs may enhance the effectiveness of primary care clinician counseling.⁵
- Potential harms of physical activity counseling have not been well defined or studied. They may include muscle and fall-related injuries or cardiovascular events.⁶ It is unclear whether more extensive patient screening, certain types of physical activity (eg, moderate vs vigorous exercise), more gradual increases in exercise, or more intensive counseling and follow-up monitoring will decrease the likelihood of injuries related to physical activity. Existing studies provide insufficient evidence regarding the potential harms of various activity protocols, such as moderate compared with vigorous exercise.

Scientific Evidence

Epidemiology and Clinical Consequences

Observational studies show that sedentary lifestyles (little or no leisure time, household, or occupational physical activity) are associated with increased risks for many chronic diseases and conditions, including cardiovascular disease, hypertension, diabetes, obesity, and osteoporosis, and that increased levels of physical activity can

reduce these risks.³ Despite the well-established benefits of exercise, 20% to 30% of adult Americans reported being sedentary in 1996.⁴ Only about 20% of adults achieved the recommended Healthy People 2010 level of moderate physical activity: 30 minutes of moderate physical activity on most days of the week. Only 15% of adults achieved a vigorous level of physical activity for 20-minutes on 3 days of the week.²

Physical activity counseling practices of clinicians are highly variable. In a 1992 survey, 40% of internists reported assessing the activity status of patients, but only 25% of all the internists reported writing physical activity plans for patients.^{7,8} Similarly, 30% of nurse practitioners reportedly assessed the physical activity levels of patients, but only 14% of all the nurse practitioners provided written exercise plans.^{7,8} In a survey conducted in 1997, 42% of adult respondents reported receiving advice from their primary care providers to increase physical activity levels.² However, the validity of such patient estimates are limited because the studies from which they were derived used varied and unclear definitions of “clinician counseling” or relied on patient recall of physical activity counseling previously received in the primary care setting.

Effectiveness of Counseling

The ideal evidence in support of counseling would directly link counseling to improved health outcomes in a controlled trial. In the absence of such evidence, the clinical logic behind counseling is based on a series of critical assumptions: the clinician must be able to assess whether a patient is sedentary or physically active; the clinician uses critical components of counseling that must be routinely replicable among patients; counseling must increase and maintain physical activity among sedentary patients; and the benefits of this increase in physical activity must be greater than any adverse effects of assessment, counseling, and increased activity.

Several theories are available on which to build counseling interventions; many of the studies examined by the USPSTF reported using more than 1 theory.⁹ Most behavioral counseling strategies

developed and tested for routine use by primary care providers seek to condense a more intensive, clinic-based, cognitive-behavioral intervention into a brief intervention that fits readily into routine primary care. Physical activity counseling interventions often include a single 3-5 minute encounter with the clinician, followed for some by a follow-up session with either the clinician or another member of the health care team. Such counseling may occur alone or in the context of preventive clinical screenings and other lifestyle behavior change interventions. In most reports, the details of the counseling intervention were incomplete. It was thus difficult to determine whether a specific counseling component was significant or essential to changing behavior. There were too few studies available or of acceptable quality to determine whether a particular counseling technique outperformed others in producing behavior change.

The USPSTF found 8 fair to good quality controlled trials (7 randomized,^{6,10-15} and 1 not randomized¹⁶) and 5 poor quality trials that addressed whether counseling involving a primary care clinician improved physical activity. Most trials involved sedentary adults. Most studies directly tested whether physical activity counseling in the primary care setting was beneficial, although some^{10,12,14} were designed to test whether educating clinicians to provide physical activity counseling was beneficial. Some interventions addressed multiple behaviors (smoking, alcohol use, and sedentary behaviors). Reports often provided limited detail regarding counseling interventions, and in several studies, delivery or receipt of the intervention was not confirmed. Some trials studied selected patient and/or provider populations. Most fair to good quality trials followed participants for at least 6 to 12 months and had follow-up rates of > 85%. Few studies included efforts to verify or validate self-reported behavioral outcomes.

The 6 trials of fair to good quality that compared physical activity counseling protocols to usual care provided mixed results.^{10-14,16} Of the 3 trials reporting short-term (< 6 months) behavioral outcomes, 1 found significantly higher physical activity levels in the intervention group, and 2 found no differences between intervention and control

groups in activity levels. Of the 6 trials that reported long-term (≥ 6 months) behavioral outcomes, 2 found significantly higher physical activity levels in the intervention group, and 4 found no differences between intervention and control groups in levels of physical activity.

Two fair to good quality randomized trials compared 2 or more different interventions aimed at increasing physical activity.^{6,15} In 1, patients receiving advice and an exercise prescription were significantly more active at 6 weeks than those receiving only advice.¹⁵ The second trial compared increasingly intensive interventions delivered over a 2 year period.⁶ The intervention groups in this study included: physician advice alone totaling about 18 minutes; physician advice plus moderate intensity health educator behavioral counseling totaling about 3 hours; and physician advice plus more intensive health educator behavioral counseling totaling about 9 hours. The study did not find any significant overall group differences in self-reported physical activity or cardio-respiratory fitness at 6, 12, and 24 months. However, women in the most intensively counseled group reported significantly higher energy expenditure at 6 months than women in the moderate intensity counseling and advice-only groups, and women in the moderate and intensive counseling groups were documented to have significantly higher fitness levels at 24 months (measured by V02 max) than women in the advice-only group.

The USPSTF found no completed studies examining the effectiveness of physical activity counseling for children or adolescents that compared treatment to a usual care control. Several such studies are in progress.

Potential Adverse Effects of Counseling

Only 1 of the trials reviewed, monitored, and reported potential harms related to physical activity counseling.⁶ This trial, in which initially sedentary program participants between 35 and 75 years of age chose either moderate or vigorous activity, found an approximate 60% rate of musculoskeletal injuries and 30% rate of symptoms that may represent

cardiovascular problems (chest pain, difficulty breathing, dizziness or loss of consciousness) over 2 years, with no significant differences between groups randomized to physician advice, physician advice plus behavioral counseling, or physician advice plus more intensive counseling. As this trial did not have a control group that received currently recommended care, it is difficult to ascertain whether any of the reported harms were directly due to physical activity counseling.

Widespread implementation of counseling could increase demand on clinical staff. However, available evidence suggests that clinicians may view counseling as a benefit to their practices. In a large randomized controlled trial, 63% of participating clinicians reported that counseling caused little to no increase in the length of the routine visit, 33% percent reported there was some increase, and only 4% complained of a substantial increase in the length of patient visits. Most clinicians (83%) felt that offering physical activity counseling was a benefit to the clinic.¹⁷

Discussion

Many benefits of physical activity have been identified in epidemiologic and laboratory studies. The challenge to clinicians and communities is to determine how to promote appropriate levels of regular physical activity in large segments of the population. The USPSTF and the Task Force on Community Preventive Services have addressed these issues. Whereas the USPSTF addressed the effectiveness of clinician counseling in primary care to increase physical activity, the Task Force on Community Preventive Services has addressed the effectiveness of community-based programs that target groups rather than individual patients.⁵ That Task Force found a number of interventions to be effective in promoting physical activity, including community wide campaigns, changing school-based physical education programs, improving access to places for physical activity, and individually-adapted behavior change programs. The latter programs generally recruited groups of volunteers at community sites, work sites, or schools; used group

settings to set individual goals and teach skills for incorporating physical activity into daily routines; and provided reinforcement and problem-solving through phone contact or group meetings.

Although some intervention trials suggest that primary care counseling can promote increases in physical activity, the sum of studies conducted and reported to date are inadequate to determine the overall efficacy, effectiveness, and feasibility of physical activity counseling by clinicians in primary care settings. Reasons for mixed results among existing studies are not clear but involve variability in the rigor with which the interventions were delivered or evaluated, and may reflect a failure to distinguish patients who were ready to begin an exercise program from those who were not, or a lack of the most effective mix of intervention strategies. Further studies are needed of the effects of clinician counseling on the level of physical activity in children, adolescents, and adults. The balance of benefits and harms, as well as approaches to preventing adverse effects, particularly among older adults and those less fit, needs further exploration.

Recommendations of Others

The Canadian Task Force on Preventive Health Care concluded that the evidence for or against a recommendation to include physical activity counseling in the periodic health examination was lacking.¹⁸ Many organizations and Federal agencies recommend that healthcare providers counsel individuals about physical activity; these recommendations are based on the health benefits of physical activity rather than on the effectiveness of counseling by clinicians for promoting changes in physical activity. Such organizations include the Department of Health and Human Services (Healthy People 2010),³ Centers for Disease Control and Prevention, National Center for Education in Maternal and Child Health (Bright Futures),¹⁹ American Academy of Family Physicians,²⁰ American Academy of Pediatrics,²¹ The American Heart Association,²² and The American College of Obstetricians and Gynecologists.²³ The Task Force on Community Preventive Services recommends

individually-adapted health behavioral programs along with several other community-based interventions. The majority of the studies that demonstrate the effectiveness of these interventions were not included in the USPSTF review because they were conducted in groups outside the primary care setting or through other media.

References

1. U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services*, 2nd ed. Washington, DC: Office of Disease Prevention and Health Promotion; 1996.
2. Eden KB, Orleans TC, Mulrow CD, Pender NJ, Teutsch SM. Counseling by clinicians: does it improve physical activity: a summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2002;137(3):208-215.
3. U.S. Department of Health and Human Services. *Healthy People 2010*, conference edition. Washington DC: U.S. Department of Health and Human Services; 2000. Available at: <http://www.health.gov/healthypeople/Document/HTML/Volume2/22Physical.htm>. Accessed May 30, 2002.
4. U.S. Department of Health and Human Services. *Physical Activity and Health: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion; 1996. Available at: <http://www.cdc.gov/nccdphp/sgr/pdf/sgrfull.pdf>. Accessed May 30, 2002.
5. Task Force on Community Preventive Services. Recommendations to increase physical activity in communities. *Am J Prev Med.* 2002;22(4S):67-72. Available at: http://www.thecommunityguide.org/home_f.html. Accessed June 7, 2002.
6. The Writing Group for the Activity Counseling Trial Research Group. Effects of physical activity counseling in primary care: The activity counseling trial: a randomized controlled trial. *JAMA*, 2001;286:677-687.
7. Francis K.T. Status of the year 2000 health goals for physical activity and fitness. *Phys Ther.* 1999;79(4):405-414.
8. National Center for Health Statistics. *Healthy People 2000 Review 1997*. Hyattsville, MD: Public Health Service; 1997. DHHS Publication No. (PHS) 98-1256.
9. Whitlock EP, Orleans CT, Pender N, Allan J. Evaluating primary care behavioral counseling interventions: an evidence-based approach. *AJPM.* 2002;22(4):267-284.
10. Burton LC, Paglia MJ, German PS, Shapiro S, Damiano AM. The effect among older persons of a general preventive visit on three health behaviors: smoking, excessive alcohol drinking, and sedentary lifestyle. The Medicare Preventive Services Research Team. *Prev Med.* 1995;24(5):492-497.
11. Goldstein MG, Pinto BM, Marcus BH, et al. Physician-based physical activity counseling for middle-aged and older adults: a randomized trial. *Annals of Behavioral Medicine.* 1999;21(1):40-47.
12. Kerse NM, Flicker L, Jolley D, Arroll B, Young D. Improving the health behaviours of elderly people: randomised controlled trial of a general practice education programme. *BMJ.* 1999;319(7211):683-687.
13. Norris SL, Grothaus MA, Buchner DM, Pratt M. Effectiveness of physician-based assessment and counseling for exercise in a staff model HMO. *Prev Med.* 2000;30:513-523.
14. Steptoe A, Doherty S, Rink E, Kerry S, Kendrick T, Hilton S. Behavioural counseling in general practice for the promotion of healthy behaviour among adults at increased risk of coronary heart disease: randomised trial. *BMJ.* 1999;319(7215):943-947; discussion 947-948.
15. Swinburn BA, Walter LG, Arroll B, Tilyard MW, Russell DG. The green prescription study: a randomized controlled trial of written exercise advice provided by general practitioners. *Am J Public Health.* 1998;88(2):288-291.
16. Smith BJ, Bauman AE, Bull FC, Booth ML, Harris MF. Promoting physical activity in general practice: a controlled trial of written advice and information materials. *British Journal of Sports Medicine.* 2000;34(4):262-267.
17. Albright CL, Cohen S, Gibbons L, et al. Incorporating physical activity: advice into primary care: physician-delivered advice within the activity counseling trial. *Am J Prev Med.* 2000;18(3):225-234.

18. Beaulieu MD. Physical activity counseling. In: Canadian Task Force on the Periodic Health Examination. *Canadian Guide to Clinical Preventive Health Care*. Ottawa: Health Canada; 1994:560-569. Available at: http://www.ctfphc.org/Full_Text/Ch47full.htm. Accessed May 22, 2002.
19. Patrick K, Spear B, Holt K, Sofka D, eds. *Bright Futures in Practice: Physical Activity*. Arlington, VA: National Center for Education in Maternal and Child Health; 2001. Available at: <http://www.aap.org/advocacy/physicalactivity.htm>. Accessed May 15, 2002.
20. American Academy of Family Physicians. Summary of policy recommendations for periodic health examinations, revision 5.1. Available at: <http://www.aafp.org/exam/PHERev5.1-1201.pdf>. Accessed May 22, 2002.
21. American Academy Of Pediatrics: Committee on Sports Medicine and Fitness and Committee on School Health. Policy statement: organized sports for children and preadolescents (RE0052). *Pediatrics*. 2001;107(6):1459-1462. Available at: <http://www.aap.org/policy/re0052.html>. Accessed June 4, 2002.
22. Fletcher GF. How to implement physical activity in primary and secondary prevention: a statement for healthcare professionals from the task force on risk reduction, American Heart Association. *Circulation*. 1997;96:355-357.
23. American College of Obstetrics and Gynecology. *Primary and Preventive Care: Periodic Assessments. ACOG Committee Opinion 246*. Washington, DC: ACOG; 2000.

Appendix A U.S. Preventive Services Task Force - Recommendations and Ratings

The Task Force grades its recommendations according to one of 5 classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms):

- A. The USPSTF strongly recommends that clinicians routinely provide [the service] to eligible patients. *The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.*
- B. The USPSTF recommends that clinicians routinely provide [the service] to eligible patients. *The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.*
- C. The USPSTF makes no recommendation for or against routine provision of [the service]. *The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.*
- D. The USPSTF recommends against routinely providing [the service] to asymptomatic patients. *The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.*
- I. The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. *Evidence that [the service] is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.*

Appendix B U.S. Preventive Services Task Force - Strength of Overall Evidence

The USPSTF grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor):

- Good:** Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.
- Fair:** Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.
- Poor:** Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

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