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Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults Without Known Risk Factors

Is Behavioral Counselling Necessary?

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In 2014, the US Preventive Services Task Force (USPSTF) issued advice focused on individuals with elevated cardiovascular risk factors.[1] They have now focused on "healthy" adults who do not have hypertension, dyslipidemia, obesity, abnormal blood glucose, or diabetes. The current ~~This~~ issue of *JAMA* contains that latest USPSTF recommendation, which.[2] ~~It~~ states as follows: "The USPSTF recommends that primary care professionals individualize the decision to offer or refer adults without obesity who do not have hypertension, dyslipidemia, abnormal blood glucose, or diabetes to behavioral counseling to promote a healthful diet and physical activity. Existing evidence indicates a positive but small benefit of behavioral

counseling for the prevention of cardiovascular disease (CVD) in this population. Individuals who are interested and ready to make behavioral changes may be most likely to benefit from behavioral counseling. (C recommendation)"[2]

A healthful diet and physical activity are worthy targets. Indeed, poor diet alone accounts for at least 40% of all deaths and disability-adjusted life years ~~(DALY)~~.[3] However, the USPSTF statement raises a number of issues. These concerns might include intervention heterogeneity, "real-life" effectiveness, potential benefits and harms, and the distraction from other, more effective prevention strategies for these low-risk individuals, and indeed for the wider community.

A Diversity of Behavioral Change Interventions

The USPSTF reviewed over 120 distinct and diverse counseling interventions focusing on promoting a healthful diet, physical activity, or both.[4,«jm1: 18»] third involved low-intensity interventions (mailings, print or web-based materials). Half of the interventions were medium- intensity (0.5 to 6 hours of contact time), and a fifth were high- intensity (>6 hours of contact time), commonly including face-to-face individual or group counselling with follow-up by telephone, email, or text, and typically lasting

Comment [jm1]: At ever cite to reference 4, I have also added (as ref 18, to be renumbered if we keep it) a cite to the updated evidence review published simultaneously with this editorial and with the new recommendation statement in JAMA. We would prefer to cite this new evidence review instead of the older one. However, if it does not contain the relevant info, we'll leave as is. If you have not seen the updated review, I can send you a copy. Please let me know.

around 6 months. The main behavioral change techniques were diverse, and variably included goal setting and planning, monitoring and feedback, motivational interviewing, addressing barriers to change, increasing social support, and general education or advice. These counseling interventions were variously delivered by primary care clinicians, health educators, behavioral health specialists, nutritionists, dieticians, exercise specialists, or lay coaches.[4,18] The heterogeneity of this intervention was thus further increased.

Efficacy, Effectiveness, and Sustainability

The trials were not powered to report on mortality; however, over 30 (mostly medium- or high-intensity trials) reported on intermediate outcomes. Results from the "better quality" trials were selected and then pooled to demonstrate modest improvements averaging a ~~1 Kg~~ 1-kg weight loss, a ~~-~~ 1.3 ~~–~~ mm Hg decrease in systolic blood pressure, and a ~~-~~2.6-mg/dL decrease in low-density lipoprotein ~~LDL~~ cholesterol.[4,18] Behavioral outcomes, mostly self-reported,[4,18] demonstrated an apparent dose-response effect, which the USPSTF highlighted.[2] However, sk~~c~~eptics might suggest that while modest efficacy was probably demonstrated in optimal conditions in selected trials,

"real--«jm2: world»" effectiveness, and hence cost-effectiveness, remains less certain.

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Furthermore, the absolute reductions in non-fatal and fatal events achieved by such behavioral counseling interventions are likely to be even more modest, because the probability of early death in these low--risk, "healthy" adults is already much lower than in adults with unhealthy behaviors.[5]

The evidence on sustainability was also limited, because few trials went beyond 12 twelve months. Relapse of dietary and activity behaviors and regaining lost previous weight are all likely, particularly given the low perceived risks and low perceived benefits to the individual. Prochaska's Stages of Change model[6] usefully proposes the stages of pre-contemplation, contemplation, preparation, action, maintenance—and relapse. Relapse is more likely if the person is stressed, but less likely if new learning is placed in familiar context, includes retrieval cues, is leveraged with positive human emotions, and, crucially, is linked into societal norms.[7] Our social, economic, and physical environment can thus powerfully support healthful behaviors, or undermine them. Furthermore, an excessive focus on individual behavior also risks obscuring those very powerful social

determinants of ill health.[8,9] Might focusing on behavioral counseling of individuals to generate modest gains likewise distract attention from other, more comprehensive and effective approaches?

The Effectiveness Hierarchy: "Upstream" vs "Downstream" Interventions

Extensive evidence suggests that ~~"~~downstream~~"~~ preventive activities targeting individuals (such as behavioral counseling, 1-on-~~:~~1 personal advice to stop smoking or take exercise, health education, or prescribing primary prevention medications) consistently achieve a smaller community health benefit than interventions aimed further ~~"~~upstream~~"~~ (for instance, smoke-free legislation, tobacco taxes, alcohol minimum pricing, or regulations eliminating dietary trans-fats).[9] Indeed, these comprehensive, policy-based interventions tend to be more powerful, more rapid, and cost-saving.[9,10] Furthermore, these population-wide policies are also more equitable, tending to reduce disparities~~;~~, while ~~whereas~~ individual interventions tend to increase disparities.[11]

Useful examples come from recent trends in the United States. For instance, smoking prevalence in men has fallen from approximately 80% immediately after ~~post~~ World War II to less than 20% **«jm3:** today**»**.[19]

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This success in tobacco control demonstrates how comprehensive strategies have used upstream policies addressing the "3 As": ~~of~~ (1) ~~A~~affordability (taxes and price hikes), (2) ~~A~~acceptability (notably, smoke-~~-~~free laws and zero marketing), and (3) ~~A~~availability (eg, removing ~~no~~ vending machines, licensing retailers, verifying customers' age ~~checks etc~~).[9] Conversely, behavioral counseling in isolation has played only a modest role in tobacco control, as in alcohol reduction.[12]

These principles are likely to be equally relevant when considering soda~~,~~ or junk food. For example, Brandt et al[13] report the recent~~,~~ success of progressive policies to ~~successfully~~ eliminate toxic industrial trans-~~-~~fats from the food eaten by Americans~~;~~ and the potential~~ly~~ achievement~~ing~~ of substantial mortality reductions.~~13~~

Adverse Events and Medicalization

The first duty of a physician ~~doctor~~ is to do no harm~~—~~—*primum non nocere*. Only 14 ~~fourteen~~ of the behavioral-~~-~~counseling trials reviewed by the USPSTF[4,18] reported on adverse events, mostly injuries and falls.~~4,18~~ None considered medicalization; might engaging ~~a~~ healthy persons in behavioral counselling carry the risk of turning them into ~~a~~ life-~~-~~long "patients"? The World Organisation of Family Doctors (WONCA)[14] supports Jamoulle's concept of quaternary prevention, "actions taken to

identify a patient or population at risk of over-medicalisation, and protect them from invasive medical investigations and provide care procedures which are ethically acceptable.”.[14,15] «jm4: p»)

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Over-diagnosis and over-treatment carry serious hazards.[8] Labeling individuals as being at risk or as having a disease based entirely on biometric analysis can lead to unnecessary fear that which undermines health and well-being. In addition to escalating financial and opportunity costs, over-treatment can also lead, paradoxically, to under-treatment, by diverting attention and resources away from those most severely affected. More controversially, should physicians therefore perhaps endorse McCormick’s suggestion, that family physicians doctors should encourage their patients to live lives of “modified hedonism”?[16] «jm5: (p)

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Conclusions

In conclusion, we paraphrase a recent *JAMA* editorial by Redberg and Katz[17] on the use of statins for primary prevention of cardiovascular disease: might paraphrase Redbergn and Katz’s recent JAMA IM Editorial on statins for CVD primary prevention.[17] Before recommending any intervention that has potential adverse effects, *it is incumbent on clinicians to identify evidence that intervention will lead to a better quality of life, or longer life,*

or both. Given these potential concerns about behavioral counseling in healthy individuals, it is surely in the interests of the medical and wider public communities to instead prioritizse "upstream" policies. Let us create a social environment for our families and friends that which supports a heart-healthy diet, regular physical activity, and not smoking.

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