

# Exercise is Medicine®

## Reference List of Exercise is Medicine-Related Published Research

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## Introduction to this Reference List

The American College of Sports Medicine (ACSM) and Exercise is Medicine® (EIM) staff compiled this reference list to serve as a publicly available resource highlighting scholarly work to make physical activity assessment and promotion a standard in clinical care, connecting patients with evidence-based physical activity resources for people everywhere of all abilities. Specifically, this reference list aims to:

1. Provide one place for individuals seeking evidence-based information on promoting physical activity in health systems;
2. Inform individuals looking to integrate physical activity into their health systems or clinical practices and/or connect patients to community-based physical activity resources;
3. Serve as a source of scholarly work for investigators developing manuscripts and grants on EIM-related topics.

To achieve these goals, this guide highlights scholarly work specifically related to the integration of physical activity into health care-related settings. Articles are listed by alphabetical order of the first author – not chronologically. We have also included the Direct Object Identifier (DOI), whenever available, or a website link for the article. Some, but not all, articles are freely available without subscription to the journals.

Due to the overwhelming evidence on the health-enhancing benefits of physical activity across a wide array of populations and health conditions, scholarly work on health benefits of physical activity are not included in this guide. We focused more broadly on work related to physical activity promotion in health care settings to keep the guide to a reasonable length. Thus, articles focusing on specific specialties or patient populations (i.e., patient preferences for physical activity support in young cancer survivors) may not be included.

Lastly, we are certain even more eligible articles exist for this list that were not identified through our literature searches. If you are aware of any work that should be included, please email a link to the article to [mstoutenberg@acsm.org](mailto:mstoutenberg@acsm.org). We view this EIM Reference List as a living document that will continue to be updated as new EIM-related research is published.

We hope that you find the scholarly work highlighted in this guide beneficial in your research, educational, clinical and/or advocacy efforts to promote the vision of Exercise is Medicine®!

# 1. Implementation Science and Health Systems

This first section highlights published work from the field of implementation science to highlight work on the adoption and implementation of evidence-based interventions in health settings. While not all are specific to physical activity integration, these articles may be useful in examining contextual factors, identifying key strategies and policy considerations when implementing EIM-related interventions in health care settings.

1. Balasubramanian BA, Cohen DJ, Davis MM, et al. Learning evaluation: Blending quality improvement and implementation research methods to study healthcare innovations. *Implement Sci.* 2015;10(1):31. <https://doi.org/10.1186/s13012-015-0219-z>. PMID: 25889831.
2. Balasubramanian BA, Cohen DJ, Clark EC, et al. Practice-level approaches for behavioral counseling and patient health behaviors. *Am J Prev Med.* 2008;35(5 Suppl):S407-413. <https://doi.org/10.1016/j.amepre.2008.08.004>.
3. Chauhan BF, Jeyaraman MM, Mann AS, et al. Behavior change interventions and policies influencing primary healthcare professionals' practice: An overview of reviews. *Implement Sci.* 2017;12(1):3. <https://doi.org/10.1186/s13012-016-0538-8>. PMID: 28057024.
4. Cohen DJ, Balasubramanian BA, Isaacson NF, et al. Coordination of health behavior counseling in primary care. *Ann Fam Med.* 2011 Sept; 9(5):406-415. <https://doi.org/10.1370/afm.1245>. PMID: 21911759.
5. Estabrooks PA, Harden SM, Almeida FA, et al. Using integrated research-practice partnerships to move evidence-based principles into practice. *Exerc Sport Sci Rev.* 2019 Jul; 47(3):176-187. <https://doi.org/10.1249/JES.000000000000194>. PMID: 31008840.
6. Estabrooks PA, Glasgow RE. Translating effective clinic-based physical activity interventions into practice. *Am J Prev Med.* 2006;31(4 Suppl):S45-56. <https://doi.org/10.1016/j.amepre.2006.06.019>.
7. Estabrooks PA, Glasgow RE, Dzawaltowski DA. Physical activity promotion through primary care. *JAMA.* 2003;289(22):2913-2916. <https://doi.org/10.1001/jama.289.22.2913>. PMID: 12799388.
8. Kennedy MA, Bayes S, Newton RU, et al. We have the program, what now? Development of an implementation plan to bridge the research-practice gap prevalent in exercise oncology. *Int J Behav Nutr Phys Act.* 2020 Oct9;17(1):128. <https://doi.org/10.1186/s12966-020-01032-4>. PMID: 33036627.
9. Lau R, Stevenson F, Ong BN, et al. Achieving change in primary care – causes of the evidence to practice gap: Systematic reviews of reviews. *Implement Sci.* 2016 Mar;11:40. <https://doi.org/10.1186/s13012-016-0396-4>. PMID: 27001107.

10. Moullin JC, Sabater-Hernández D, Fernandez-Llimos F, et al. A systematic review of implementation frameworks of innovations in healthcare and resulting generic implementation framework. *Health Res Policy Syst.* 2015;13:16. <https://doi.org/10.1186/s12961-015-0005-z>. PMID: 25885055.
11. Nilsen P, Schildmeijer K, Ericsson C, et al. Implementation of change in health care in Sweden: A qualitative study of professionals' change responses. *Implement Sci.* 2019 Mar;14(1):51. <https://doi.org/10.1186/s13012-019-0902-6>. PMID: 31088483.

## 2. General EIM Articles

This section highlights published work that provides a general overview and justification for integrating physical activity into health settings. These articles include calls to action, commentaries, updates and opinion pieces that are often the most commonly referenced EIM-related articles.

1. Berra K, Rippe J, Manson JE. Making physical activity counseling a priority in clinical practice: The time for action is now. *JAMA.* 2015;314(24):2617-2618. <https://doi.org/10.1001/jama.2015.16244>. PMID: 26662069.
2. Haseler C, Crooke R, Haseler T. Promoting physical activity to patients. *BMJ.* 2019;366:15230. <https://doi.org/10.1136/bmj.15230>. PMID: 31530549.
3. Jacobson DM, Strohecker L, Compton MT, et al. Physical activity counseling in the adult primary care setting: Position statement of the American College of Preventive Medicine. *Am J Prev Med.* 2005;29(2):158-162. <https://doi.org/10.1016/j.amepre.2005.04.009>. PMID: 16005814.
4. Kharmats AY, Pilla SJ, Sevick MA. USPSTF recommendations for behavioral counseling in adults with cardiovascular disease risk factors: Are we ready? *JAMA New Open.* 2020 Nov;3(11):e2026982. <https://doi.org/10.1001/jamanetworkopen.2020.29682>. PMID: 33231631.
5. Lobelo F, Stoutenberg M, Hutber A. The exercise is medicine global health initiative: A 2014 update. *Br J Sports Med.* 2014;48(22):1627-1633. <https://doi.org/10.1136/bjsports-2013-093080>. PMID: 24759911.
6. McPhail S, Schippers M. An evolving perspective on physical activity counselling by medical professionals. *BMC Fam Pract.* 2012;13:31. <https://doi.org/10.1186/1471-2296-13-31>. PMID: 22524484.
7. Patrick K, Pratt M, Sallis RE. The healthcare sector's role in the U.S. national physical activity plan. *J Phys Act Health.* 2009;6 Suppl 2:S211-S219. <https://pubmed.ncbi.nlm.nih.gov/20120130>. PMID: 20120130.
8. Sallis R, Franklin B, Joy L, et al. Strategies for promoting physical activity in clinical practice. *Prog Cardiovasc Dis.* 2015;57(4):375-386. <https://doi.org/10.1016/j.pcad.2014.10.003>. PMID: 25459975.

9. Thompson PD, Eijssvogels TMH. New physical activity guidelines: A call to activity for clinicians and patients. *JAMA*. 2018 Nov;320(19):1983-1984. <https://doi.org/10.1001/jama.2018.16070>. PMID: 30418469.
10. Thompson W, Sallis R, Joy E, et al. Exercise is medicine. *Am J Lifestyle Med*. 2020 Apr;14(5):511-523. <https://doi.org/10.1177/1559827620912192>. PMID: 32922236.
11. Vuori IM, Lavie CJ, Blair SN. Physical activity promotion in the health care system. *Mayo Clin Proc*. 2013;88(12):1446-1461. <https://doi.org/10.1016/j.mayocp.2013.08.020>. PMID: 24290119.
12. Whitsel LP, Bantham A, Jarrin R, et al. Physical activity assessment, prescription and referral in US healthcare: How do we make this a standard of clinical practice? *Prog Cardiovasc Dis*. 2020 Dec;S0033-0620(20)30208-5. <https://doi.org/10.1016/j.pcad.2020.12.006>. PMID: 33383058.

### 3. Systematic Reviews and Meta-Analyses

This section includes systematic reviews and meta-analyses directly related to multiple aspects regarding integrating physical activity into health care settings. Several of these articles may also appear in other sections in this document to increase the ease of finding the appropriate article.

1. Arsenijevic J, Groot W. Physical activity on prescription schemes (PARS): Do programme characteristics influence effectiveness? Results of a systematic review and meta-analyses. *BMJ Open*. 2017 Feb 2;7(2):e012156. <https://doi.org/10.1136/bmjopen-2016-012156>. PMID: 28153931.
2. Campbell F, Holmes M, Everson-Hock E, et al. A systematic review and economic evaluation of exercise referral schemes in primary care: Aa short report. *Health Technol Assess*. 2015 Jul;19(60):1-110. <https://doi.org/10.3310/hta19600>. PMID: 26222987.
3. Golightly YM, Allen KD, Ambrose KR, et al. Physical activity as a vital sign: A systematic review. *Prev Chronic Dis*. 2017;14:E123. <https://doi.org/10.5888/pcd14.170030>. PMID: 29191260.
4. Hébert ET, Caughy MO, Shuval K. Primary care providers' perceptions of physical activity counselling in a clinical setting: A systematic review. *Br J Sports Med*. 2012 Jul;46(9):625-31. <https://doi.org/10.1136/bjsports-2011-090734>. PMID: 22711796.
5. Huijg JM, Gebhardt WA, Verheijden MW, et al. Factors influencing primary health care professionals' physical activity promotion behaviors: A systematic review. *Int J Behav Med*. 2015 Feb;22(1):32-50. <https://doi.org/10.1007/s12529-014-9398-2>. PMID: 24788314.
6. Morgan F, Battersby A, Weightman AL, et al. Adherence to exercise referral schemes by participants - what do providers and commissioners need to know? A systematic review of barriers and facilitators. *BMC Public Health*. 2016 Mar 5;16:227. <https://doi.org/10.1186/s12889-016-2882-7>. PMID: 26944952.
7. O'Brien MW, Bray NW, Kivell MJ, et al. A scoping review of exercise referral schemes involving qualified exercise professionals in primary health care. *Appl Physiol Nutr Metab*. 2021 Sept;46(9):1007-1018. <https://doi.org/10.1139/apnm-2020-1070>. PMID: 33872547.
8. Orrow G, Kinmonth AL, Sanderson S, et al. Republished research: Effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials. *Br J Sports Med*. 2013 Jan;47(1):27. <https://doi.org/10.1136/bjsports-2012-e1389rep>. PMID: 23243114.
9. Pavey T, Taylor A, Hillsdon M, et al. Levels and predictors of exercise referral scheme uptake and adherence: A systematic review. *J Epidemiol Community Health*. 2012 Aug;66(8):737-44. <https://doi.org/10.1136/jech-2011-200354>. PMID: 22493474.
10. Pavey TG, Anokye N, Taylor AH, et al. The clinical effectiveness and cost-effectiveness of exercise referral schemes: A systematic review and economic evaluation. *Health Technol Assess*. 2011 Dec;15(44):i-xii, 1-254. <https://doi.org/10.3310/hta15440>. PMID: 22182828.
11. Pavey TG, Taylor AH, Fox KR, et al. Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: Systematic review and meta-analysis. *BMJ*. 2011 Nov 4;343:d6462. <https://doi.org/10.1136/bmj.d6462>. PMID: 22058134.
12. Sanchez A, Bully P, Martinez C, et al. Effectiveness of physical activity promotion interventions in primary care: A review of reviews. *Prev Med*. 2015 Jul;76 Suppl:S56-67. <https://doi.org/10.1016/j.ypmed.2014.09.012>. PMID: 25263343.
13. Shore CB, Hubbard G, Gorely T, et al. Insufficient reporting of factors associated with exercise referral scheme uptake, attendance, and adherence: A systematic review of reviews. *J Phys Act Health*. 2019 Aug 1;16(8):667-676. <https://doi.org/10.1123/jpah.2018-0341>. PMID: 31203705.
14. US Preventive Services Task Force, Krist AH, Davidson KW, et al. Behavioral counseling interventions to promote a healthy diet and physical activity for cardiovascular disease prevention in adults with cardiovascular risk factors: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2020 Nov;324(20):2069-2075. <https://doi.org/10.1001/jama.2020.21749>. PMID: 33231670.



## 4. Health Care Provider Physical Activity Counseling Rates

This section includes articles that provide information related to the rates of physical activity counseling conducted in health settings. Articles may use data from smaller, more local health settings or from larger, national datasets. Information in these articles may come from patient reporting of provider counseling levels or from direct observation/reporting from the providers themselves. Articles in this section include work completed in multiple countries from around the world.

1. Ahmed NU, Delgado M, Saxena A. Trends and disparities in the prevalence of physicians' counseling on exercise among the U.S. adult population, 2000-2010. *Prev Med.* 2017 Jun;99:1-6. <https://doi.org/10.1016/j.ypmed.2017.01.015>. PMID: 28161645.
2. Barnes PM, Schoenborn CA. Trends in adults receiving a recommendation for exercise or other physical activity from a physician or other health professional. *NCHS Data Brief.* 2012 Feb;(86):1-8. <https://www.cdc.gov/nchs/data/databriefs/db86.pdf>. PMID: 22617014.
3. Bock C, Diehm C, Schneider S. Physical activity promotion in primary health care: Results from a German physician survey. *Eur J Gen Pract.* 2012 Jun;18(2):86-91. <https://doi.org/10.3109/13814788.2012.675504>. PMID: 22548286.
4. Croteau K, Schofield G, McLean G. Physical activity advice in the primary care setting: Results of a population study in New Zealand. *Aust N Z J Public Health.* 2006 Jun;30(3):262-7. <https://doi.org/10.1111/j.1467-842x.2006.tb00868.x>. PMID: 16800204.
5. Florindo AA, Mielke GI, Gomes GA, et al. Physical activity counseling in primary health care in Brazil: A national study on prevalence and associated factors. *BMC Public Health.* 2013 Aug 31;13:794. <https://doi.org/10.1186/1471-2458-13-794>. PMID: 24005006.
6. Gabrys L, Jordan S, Schlaud M. Prevalence and temporal trends of physical activity counselling in primary health care in Germany from 1997-1999 to 2008-2011. *Int J Behav Nutr Phys Act.* 2015 Oct 26;12:136. <https://doi.org/10.1186/s12966-015-0299-9>. PMID: 26503585.
7. Glasgow RE, Eakin EG, Fisher EB, et al. Physician advice and support for physical activity: Results from a national survey. *Am J Prev Med.* 2001 Oct;21(3):189-96. [https://doi.org/10.1016/s0749-3797\(01\)00350-6](https://doi.org/10.1016/s0749-3797(01)00350-6). PMID: 11567839.
8. Hinrichs T, Moschny A, Klaassen-Mielke R, et al. General practitioner advice on physical activity: Analyses in a cohort of older primary health care patients (getABI). *BMC Fam Pract.* 2011 May 10;12:26. <https://doi.org/10.1186/1471-2296-12-26>. PMID: 21569227.
9. Hootman JM, Murphy LB, Omura JD, et al. Health care provider counseling for physical activity or exercise among adults with arthritis - United States, 2002 and 2014. *MMWR Morb Mortal Wkly Rep.* 2018 Jan 5;66(51-52):1398-1401. <https://doi.org/10.15585/mmwr.mm665152a2>. PMID: 29300722.
10. Klumbiene J, Petkeviciene J, Vaisvalavicius V, et al. Advising overweight persons about diet and physical activity in primary health care: Lithuanian health behaviour monitoring study. *BMC Public Health.* 2006 Feb 14;6:30. <https://doi.org/10.1186/1471-2458-6-30>. PMID: 16478535.
11. Kriaucioniene V, Petkeviciene J, Raskiliene A. Nutrition and physical activity counselling by general practitioners in Lithuania, 2000-2014. *BMC Fam Pract.* 2019 Sep 7;20(1):125. <https://doi.org/10.1186/s12875-019-1022-8>. PMID: 31493793.
12. Lobelo F, Supapannachart KJ, Zhou T, et al. Exercise and diet counseling trends from 2002 to 2015: A serial cross-sectional study of U.S. adults with cardiovascular disease risk. *Am J Prev Med.* 2021 Feb;60(2):e59-e67. <https://doi.org/10.1016/j.amepre.2020.07.008>. PMID: 33342670.
13. Loprinzi PD, Beets MW. Need for increased promotion of physical activity by health care professionals. *Prev Med.* 2014 Dec;69:75-9. <https://doi.org/10.1016/j.ypmed.2014.09.002>. PMID: 25230367.
14. O'Brien S, Prihodova L, Heffron M, et al. Physical activity counselling in Ireland: A survey of doctors' knowledge, attitudes and self-reported practice. *BMJ Open Sport Exerc Med.* 2019 Jul 22;5(1):e000572. <https://doi.org/10.1136/bmjsem-2019-000572>. PMID: 31423324.
15. Osinaikie J, Hartley SE. Physical activity counselling among junior doctors in the UK: A qualitative study. *Health Educ J.* 2021 March;80(5). <https://doi.org/10.1177/0017896921999074>.
16. Petrella RJ, Lattanzio CN, Overend TJ. Physical activity counseling and prescription among Canadian primary care physicians. *Arch Intern Med.* 2007 Sep 10;167(16):1774-81. <https://doi.org/10.1001/archinte.167.16.1774>. PMID: 17846397.
17. Pojednic RM, Polak R, Arnstein F, et al. Practice patterns, counseling and promotion of physical activity by sports medicine physicians. *J Sci Med Sport.* 2017 Feb;20(2):123-127. <https://doi.org/10.1016/j.jsams.2016.06.012>. PMID: 27460911.
18. Short CE, Hayman M, Rebar AL, et al. Physical activity recommendations from general practitioners in Australia. Results from a national survey. *Aust N Z J Public Health.* 2016 Feb;40(1):83-90. <https://doi.org/10.1111/1753-6405.12455>. PMID: 26456595.
19. Smith AW, Borowski LA, Liu B, et al. U.S. primary care physicians' diet-, physical activity-, and weight-related care of adult patients. *Am J Prev Med.* 2011 Jul;41(1):33-42. <https://doi.org/10.1016/j.amepre.2011.03.017>. PMID: 21665061.

20. Sreedhara M, Silfee VJ, Rosal MC, et al. Does provider advice to increase physical activity differ by activity level among US adults with cardiovascular disease risk factors? *Fam Pract*. 2018 Jul 23;35(4):420-425. <https://doi.org/10.1093/fampra/cmz140>. PMID: 29390106.

## 5. Health Care Provider Attitudes and Barriers to PA Promotion

This section includes scholarly work that specifically focuses on the perceptions and attitudes of health care providers, as well as the different barriers they face when integrating physical activity into the clinic setting.

1. Crisford P, Winzenberg T, Venn A, et al. Factors associated with physical activity promotion by allied and other non-medical health professionals: A systematic review. *Patient Educ Couns*. 2018 Oct;101(10):1775-1785. <https://doi.org/10.1016/j.pec.2018.05.011>. PMID: 29793786.
2. Douglas F, Torrance N, van Teijlingen E, et al. Primary care staff's views and experiences related to routinely advising patients about physical activity. A questionnaire survey. *BMC Public Health*. 2006 May 23;6:138. <https://doi.org/10.1186/1471-2458-6-138>. PMID: 16719900.
3. Hébert ET, Caughey MO, Shuval K. Primary care providers' perceptions of physical activity counselling in a clinical setting: A systematic review. *Br J Sports Med*. 2012 Jul;46(9):625-31. <https://doi.org/10.1136/bjsports-2011-090734>. PMID: 22711796.
4. Huijg JM, Gebhardt WA, Verheijden MW, et al. Factors influencing primary health care professionals' physical activity promotion behaviors: A systematic review. *Int J Behav Med*. 2015 Feb;22(1):32-50. <https://doi.org/10.1007/s12529-014-9398-2>. PMID: 24788314.
5. Lanhers C, Duclos M, Guttmann A, et al. General practitioners' barriers to prescribe physical activity: The dark side of the cluster effects on the physical activity of their type 2 diabetes patients. *PLoS One*. 2015 Oct 15;10(10):e0140429. <https://doi.org/10.1371/journal.pone.0140429>. PMID: 26468874.
6. McPhail S, Schippers M. An evolving perspective on physical activity counselling by medical professionals. *BMC Fam Pract*. 2012 Apr 23;13:31. <https://doi.org/10.1186/1471-2296-13-31> PMID: 22524484.
7. O'Brien S, Prihodova L, Heffron M, et al. Physical activity counselling in Ireland: A survey of doctors' knowledge, attitudes and self-reported practice. *BMJ Open Sport Exerc Med*. 2019 Jul 22;5(1):e000572. <https://doi.org/10.1136/bmjsem-2019-000572>. PMID: 31423324.
8. Pang A, Lingham S, Zhao W, et al. Physician practice patterns and barriers to counselling on physical activity in solid organ transplant recipients. *Ann Transplant*. 2018 May 22;23:345-359. <https://doi.org/10.12659/AOT.908629>. PMID: 29784902.

## 6. Patient Preferences and Barriers

This section includes articles that focus on how patients prefer to receive physical activity advice from their health care provider, as well as barriers that patients face when trying to act upon this advice.

1. Camhi SM, Debordes-Jackson G, Andrews J, et al. Socioecological factors associated with an urban exercise prescription program for under-resourced women: A mixed methods community-engaged research project. *Int J Environ Res Public Health*. 2021 Aug; 18(16):8726. <https://doi.org/10.3390/ijerph18168726>. PMID: 34444473.
2. Johnson NA, Ewald B, Plotnikoff RC, et al. Predictors of adherence to a physical activity counseling intervention delivered by exercise physiologists: Secondary analysis of the NewCOACH trial data. *Patient Prefer Adherence*. 2018 Nov 29;12:2537-2543. <https://doi.org/10.2147/PPA.S183938>. PMID: 30568432.
3. Meesters J, Conijn D, Vermeulen HM, et al. Physical activity during hospitalization: Activities and preferences of adults versus older adults. *Physiother Theory Pract*. 2019 Oct;35(10):975-985. <https://doi.org/10.1080/09593985.2018.1460429>. PMID: 29658797.
4. Plotnikoff RC, Stacey FG, Jansson AK, et al. Does patient preference for mode of intervention delivery impact intervention efficacy and attrition? *Am J Health Promot*. 2020 Jan;34(1):63-66. <https://doi.org/10.1177/0890117119871002>. PMID: 31470754.
5. Reddeman L, Bourgeois N, Angl EN, et al. How should family physicians provide physical activity advice? Qualitative study to inform the design of an e-health intervention. *Can Fam Physician*. 2019 Sep;65(9):e411-e419. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6741803>. PMID: 31515329.

## 7. Physical Activity Assessment in Clinic Settings

This section includes original research articles, consensus statements, calls to action and commentaries that focus on the assessment of physical activity in health settings.

1. Ball TJ, Joy EA, Gren LH, et al. Concurrent validity of a self-reported physical activity "vital sign" questionnaire with adult primary care patients [published correction appears in *Prev Chronic Dis*. 2016;13:E30]. *Prev Chronic Dis*. 2016;13:E16. <https://doi.org/10.5888/pcd13.150228>. PMID: 26851335.
2. Ball TJ, Joy EA, Gren LH, et al. Predictive validity of an adult physical activity "vital sign" recorded in electronic health records. *J Phys Act Health*. 2016;13(4):403-408. <https://doi.org/10.1123/jpah.2015-0210>. PMID: 26445164.
3. Ball TJ, Joy EA, Goh TL, et al. Validity of two brief primary care physical activity questionnaires with accelerometry in clinic staff. *Prim Health Care Res Dev*. 2015;16(1):100-108. <https://doi.org/10.1017/S1463423613000479>. PMID: 24472569.

4. Bowen PG, Mankowski RT, Harper SA, et al. Exercise is Medicine as a vital sign: Challenges and opportunities. *Transl J Am Coll Sports Med.* 2019;4(1):1-7. <https://pubmed.ncbi.nlm.nih.gov/30828640>. PMID: 30828640.
5. Clark RE, Milligan J, Ashe MC, et al. A patient-oriented approach to the development of a primary care physical activity screen for embedding into electronic medical records. *Appl Physiol Nutr Metab.* 2020 Nov. Online ahead of print. <https://doi.org/10.1139/apnm-2020-0356>. PMID: 33226847.
6. Coleman KJ, Ngor E, Reynolds K, et al. Initial validation of an exercise “vital sign” in electronic medical records. *Med Sci Sports Exerc.* 2012;44(11):2071-2076. <https://doi.org/10.1249/MSS.0b013e3182630ec1>. PMID: 22688832.
7. Fitzgerald L, Ozemek C, Jarrett H, et al. Accelerometer validation of questionnaires used in clinical settings to assess MVPA. *Med Sci Sports Exerc.* 2015;47(7):1538-1542. <https://doi.org/10.1249/MSS.0000000000000565>. PMID: 25380474.
8. Grant RW, Schmittiel JA, Neugebauer RS, et al. Exercise as a vital sign: A quasi-experimental analysis of a health system intervention to collect patient-reported exercise levels. *J Gen Intern Med.* 2014;29(2):341-348. <https://doi.org/10.1007/s11606-013-2693-9>. PMID: 24309950.
9. Golightly YM, Allen KD, Ambrose KR, et al. Physical activity as a vital sign: A systematic review. *Prev Chronic Dis.* 2017;14:E123. <https://doi.org/10.5888/pcd14.170030>. PMID: 29191260.
10. Greenwood JL, Joy EA, Stanford JB. The physical activity vital sign: A primary care tool to guide counseling for obesity. *J Phys Act Health.* 2010;7(5):571-576. <https://doi.org/10.1123/jpah.7.5.571>. PMID: 20864751.
11. Kaminsky LA, Brubaker PH, Guazzi M, et al. Assessing physical activity as a core component in cardiac rehabilitation: A position statement of the American Association of Cardiovascular and Pulmonary Rehabilitation. *J Cardiopulm Rehabil Prev.* 2016;36(4):217-229. <https://doi.org/10.1097/HCR.000000000000191>. PMID: 27307067.
12. Kuntz JL, Young DR, Saelens BE, et al. Validity of the Exercise Vital Sign tool to assess physical activity. *Am J Prev Med.* 2021 Mar; S0749-3797(21)00093-3. <https://doi.org/10.1016/j.amepre.2021.01.012>. PMID: 33781618.
13. Lobelo F, Young DR, Sallis R, et al. Routine assessment and promotion of physical activity in healthcare settings – A scientific statement from the American Heart Association. *Circulation.* 2018 May; 137(18):e495-e522. <https://doi.org/10.1161/CIR.0000000000000559>. PMID: 29618598.
14. Lobelo F, Muth ND, Hanson S, et al. Physical activity assessment and counseling in pediatric clinical settings. *Pediatrics.* 2020;145(3):e20193992. <https://doi.org/10.1542/peds.2019-3992>. PMID: 32094289.
15. Ross R, Blair SN, Arena R, et al. Importance of assessing cardiorespiratory fitness in clinical practice: A case for fitness as a clinical vital sign: A scientific statement from the American Heart Association. *Circulation.* 2016;134(24):e653-e699. <https://doi.org/10.1161/CIR.0000000000000461>. PMID: 27881567.
16. Sallis RE, Matuszak JM, Baggish AL, et al. Call to action on making physical activity assessment and prescription a medical standard of care. *Curr Sports Med Rep.* 2016;15(3):207-214. <https://doi.org/10.1249/JSR.0000000000000249>. PMID: 27172086.
17. Sederberg M, Tarkhan A, Ray LS, et al. Physical activity in adults with an amputation as assessed with a self-report exercise vital sign. *PM R.* 2020 Sept;12(9):861-869. <https://doi.org/10.1002/pmrj.12333>. PMID: 31990141.
18. Shook RP, Halpin K, Carlson JA, et al. Adherence with multiple national healthy lifestyle recommendations in a large pediatric center electronic health record and reduced risk of obesity. *Mayo Clin Proc.* 2018 Sept;93(9):1247-1255. <https://doi.org/10.1016/j.mayocp.2018.04.020>. PMID: 30060957.
19. Stoutenberg M, Shaya GE, Feldman DI, et al. Practical strategies for assessing patient physical activity levels in primary care. *Mayo Clin Proc Innov Qual Outcomes.* 2017;1(1):8-15. <https://doi.org/10.1016/j.mayocpiqo.2017.04.006>. PMID: 30225397.
20. Young DR, Coleman KJ, Ngor E, et al. Associations between physical activity and cardiometabolic risk factors assessed in a Southern California health care system, 2010-2012. *Prev Chronic Dis.* 2014;11:E219. <http://dx.doi.org/10.5888/pcd11.140196>. PMID: 25523350.

## 8. Physical Activity Counseling/ Brief Advice

This section includes articles that report the results of studies examining physical activity counseling, such as brief advice, provided directly by physicians, nurses or other health care providers to patients. Several of these studies are classics and considered as the precursors to the Exercise is Medicine® initiative.

1. Armit CM, Brown WJ, Marshall AL, et al. Randomized trial of three strategies to promote physical activity in general practice. *Prev Med.* 2009 Feb;48(2):156-63. <https://doi.org/10.1016/j.ypmed.2008.11.009>. PMID: 19100282.
2. Berra K, Rippe J, Manson JE. Making physical activity counseling a priority in clinical practice: The time for action is now. *JAMA.* 2015 Dec 22-29;314(24):2617-8. <https://doi.org/10.1001/jama.2015.16244>. PMID: 26662069.
3. Calfas KJ, Long BJ, Sallis JF, et al. A controlled trial of physician counseling to promote the adoption of physical activity. *Prev Med.* 1996 May-Jun;25(3):225-33. <https://doi.org/10.1006/pmed.1996.0050>. PMID: 8780999.



4. Cardinal BJ, Levy SS, John DH, et al. Counseling patients for physical activity. *Am J Med Sports*. 2002;4:364-371.
5. Carroll JK, Antognoli E, Flocke SA. Evaluation of physical activity counseling in primary care using direct observation of the 5As. *Ann Fam Med*. 2011 Sep-Oct;9(5):416-22. <https://doi.org/10.1370/afm.1299>. PMID: 21911760.
6. Carroll JK, Winters PC, Sanders MR, et al. Clinician-targeted intervention and patient-reported counseling on physical activity. *Prev Chronic Dis*. 2014 May 29;11:E89. <https://doi.org/10.5888/pcd11.130302>. PMID: 24874781.
7. 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 Feb;26(2):404-08. <https://doi.org/10.2337/diacare.26.2.404>. PMID: 12547870.
8. Galaviz KI, Estabrooks PA, Ulloa EJ, et al. Evaluating the effectiveness of physician counseling to promote physical activity in Mexico: An effectiveness-implementation hybrid study. *Transl Behav Med*. 2017 Dec;7(4):731-740. <https://doi.org/10.1007/s13142-017-0524-y>. PMID: 28936694.
9. Grandes G, Sanchez A, Montoya I, et al. Two-year longitudinal analysis of a cluster randomized trial of physical activity promotion by general practitioners. *PLoS One*. 2011 Mar 29;6(3):e18363. <https://doi.org/10.1371/journal.pone.0018363>. PMID: 21479243.
10. Grandes G, Sanchez A, Sanchez-Pinilla RO, et al. Effectiveness of physical activity advice and prescription by physicians in routine primary care: A cluster randomized trial. *Arch Intern Med*. 2009 Apr 13;169(7):694-701. <https://doi.org/10.1001/archinternmed.2009.23>. PMID: 19364999.
11. Goldstein MG, Pinto BM, Marcus BH, et al. Physician-based physical activity counseling for middle-aged and older adults: A randomized trial. *Ann Behav Med*. 1999 Spring;21(1):40-7. <https://doi.org/10.1007/BF02895032>. PMID: 18425653.
12. Harris T, Kerry SM, Victor CR, et al. A primary care nurse-delivered walking intervention in older adults: PACE (pedometer accelerometer consultation evaluation)-life cluster randomized controlled trial. *PLoS Med*. 2015 Feb;12(2):e1001783. <https://doi.org/10.1371/journal.pmed.1001783>. PMID: 25689364.
13. Hébert ET, Caughy MO, Shuval K. Primary care providers' perceptions of physical activity counselling in a clinical setting: A systematic review. *Br J Sports Med*. 2012 Jul;46(9):625-31. <https://doi.org/10.1136/bjsports-2011-090734>. PMID: 22711796.
14. Huijg JM, Gebhardt WA, Verheijden MW, et al. Factors influencing primary health care professionals' physical activity promotion behaviors: A systematic review. *Int J Behav Med*. 2015 Feb;22(1):32-50. <https://doi.org/10.1007/s12529-014-9398-2>. PMID: 24788314.
15. Lin JS, O'Connor E, Whitlock EP, et al. Behavioral counseling to promote physical activity and a healthful diet to prevent cardiovascular disease in adults: A systematic review for the U.S. Preventive Services Task Force. *Ann Intern Med*. 2010 Dec 7;153(11):736-50. <https://doi.org/10.7326/0003-4819-153-11-201012070-00007>. PMID: 21135297.
16. Lobelo F <https://pubmed.ncbi.nlm.nih.gov/33342670/#affiliation-1>, Supapannachart KJ, Zhou T, Frediani JK. Exercise and diet counseling trends from 2002 to 2015: A serial cross-sectional study of U.S. adults with cardiovascular disease risk. *Am J Prev Med*. 2021 Feb;60(2):e59-e67. <https://doi.org/10.1016/j.amepre.2020.07.008>. PMID: 33342670.
17. Margitić S, Sevick MA, Miller M, et al. Challenges faced in recruiting patients from primary care practices into a physical activity intervention trial. Activity Counseling Trial Research Group. *Prev Med*. 1999 Oct;29(4):277-86. <https://doi.org/10.1006/pmed.1999.0543>. PMID: 10547053.
18. Mitchell J, Hardeman W, Pears S, et al. Effectiveness and cost-effectiveness of a very brief physical activity intervention delivered in NHS Health Checks (VBI Trial): Study protocol for a randomised controlled trial. *Trials*. 2016 Jun 27;17(1):303. <https://doi.org/10.1186/s13063-016-1413-2>. PMID: 27350131.
19. Moyer VA; U.S. Preventive Services Task Force. Behavioral counseling interventions to promote a healthful diet and physical activity for cardiovascular disease prevention in adults: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*. 2012 Sep 4;157(5):367-71. <https://doi.org/10.7326/0003-4819-157-5-201209040-00486>. PMID: 22733153.
20. Pinto BM, Goldstein MG, Ashba J, et al. Randomized controlled trial of physical activity counseling for older primary care patients. *Am J Prev Med*. 2005 Nov;29(4):247-55. <https://doi.org/10.1016/j.amepre.2005.06.016>. PMID: 16242586.
21. Pinto BM, Goldstein MG, DePue JD, et al. Acceptability and feasibility of physician-based activity counseling. The PAL project. *Am J Prev Med*. 1998 Aug;15(2):95-102. [https://doi.org/10.1016/s0749-3797\(98\)00043-9](https://doi.org/10.1016/s0749-3797(98)00043-9). PMID: 9713664.
22. Pinto BM, Goldstein MG, Marcus BH. Activity counseling by primary care physicians. *Prev Med*. 1998 Jul-Aug;27(4):506-13. doi: 10.1006/pmed.1998.0335. PMID: 9672943. <https://www.sciencedirect.com/science/article/abs/pii/S0091743598903358?via%3Dihub>
23. Sabti Z, Handschin M, Kutlar Joss M, et al. Evaluation of a physical activity promotion program in primary care. *Fam Pract*. 2010 Jun;27(3):279-84. <https://doi.org/10.1093/fampra/cmq010>. PMID: 20332179.

24. Weidinger KA, Lovegreen SL, Elliott MB, et al. How to make exercise counseling more effective: Lessons from rural America. *J Fam Pract.* 2008 Jun;57(6):394-402. <https://www.mdedge.com/familymedicine/article/63182/how-make-exercise-counseling-more-effective-lessons-rural-america>. PMID: 18544323.
25. 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 Aug 8;286(6):677-87. <https://doi.org/10.1001/jama.286.6.677>. PMID: 11495617.
7. Kallings LV, Leijon M, Hellénus ML, et al. Physical activity on prescription in primary health care: A follow-up of physical activity level and quality of life. *Scand J Med Sci Sports.* 2008;18(2):154-161. <https://doi.org/10.1111/j.1600-0838.2007.00678.x>. PMID: 17555539.
8. Missud DC, Parot-Schinkel E, Connan L, et al. Physical activity prescription for general practice patients with cardiovascular risk factors-the PEPPER randomized controlled trial protocol. *BMC Public Health.* 2019;19(1):688. <https://doi.org/10.1186/s12889-019-7048-y>. PMID: 31159805.

## 9. Physical Activity Prescription

This section includes articles in which health care professionals give patients a physical activity prescription. The definition of prescription is not standardly applied by investigators, resulting in several instances where the physical activity prescription may be more similar to a physical activity referral. Since they use the term prescription, they are included in this section.

1. Besenyi GM, Hayashi EB, Christiana RW. Prescribing physical activity in parks and nature: Health care provider insights on park prescription programs. *J Phys Act Health.* 2020 Aug;17(10):958-67. <https://doi.org/10.1123/jpah.2019-0479>. PMID: 32866945.
2. Calonge-Pascual S, Fuentes-Jiménez F, Casajús Mallén JA. Design and validity of a choice-modeling questionnaire to analyze the feasibility of implementing physical activity on prescription at primary health-care settings. *Int J Environ Res Public Health.* 2020 Sept;17(18):6627. <https://doi.org/10.3390/ijerph17186627>. PMID: 32932923.
3. Elley CR, Kerse N, Arroll B, et al. Effectiveness of counselling patients on physical activity in general practice: Cluster randomised controlled trial. *BMJ.* 2003;326(7393):793. <https://doi.org/10.1136/bmj.326.7393.793>. PMID: 12689976.
4. Hamlin MJ, Yule E, Elliot CA, et al. Long-term effectiveness of the New Zealand Green Prescription primary health care exercise initiative. *Public Health.* 2016;140:102-108. <https://doi.org/10.1016/j.puhe.2016.07.014>. PMID: 27569778.
5. Hansen D, Ruiz GR, Doherty P, et al. Do clinicians prescribe exercise similarly in patients with different cardiovascular diseases? Findings from the EAPC EXPERT working group survey. *Eur J Prev Cardiol.* 2018 May;25(7):682-691. <https://doi.org/10.1177/2047487318760888>. PMID: 29486587.
6. James JJ, Christiana RW, Battista RA. A historical and critical analysis of park prescriptions. *J Leis Res.* 2019;50(4):311-329. <https://doi.org/10.1080/00222216.2019.1617647>.
9. Müller-Riemenschneider F, Petrunoff N, Sia A, et al. Prescribing physical activity in parks to improve health and wellbeing: Protocol of the park prescription randomized controlled trial. *Int J Environ Res Public Health.* 2018;15(6):1154. <https://doi.org/10.3390/ijerph15061154>. PMID: 30720784.
10. Omura JD, Watson KB, Loustalot F, et al. Types of physical activity recommended by primary care providers for patients at risk for cardiovascular disease. *Prev Chronic Dis.* 2021;18:200545. [http://dx.doi.org/10.5888/pcd18.200545external icon](http://dx.doi.org/10.5888/pcd18.200545external%20icon). PMID: 33964123.
11. Onerup A, Arvidsson D, Blomqvist A, et al. Physical activity on prescription in accordance with the Swedish model increases physical activity: A systematic review. *Br J Sports Med.* 2019 Mar;53(6):383-388. <https://doi.org/10.1136/bjsports-2018-099598>. PMID: 30413421.
12. O'Rega A, Pollock M, D'Sa S, et al. ABC of prescribing exercise as medicine: A narrative review of the experiences of general practitioners and patients. *BMJ Open Sport Exerc Med.* 2021 Jun;7(2):e001050. <https://doi.org/10.1136/bmjsem-2021-001050>. PMID: 34150320.
13. Persson G, Brorsson A, Ekvall Hansson E, et al. Physical activity on prescription (PAP) from the general practitioner's perspective - A qualitative study. *BMC Fam Pract.* 2013;14:128. <https://doi.org/10.1186/1471-2296-14-128>. PMID: 23987804.
14. Pescatello LS, Wu Y, Panza GA, et al. Development of a novel clinical decision support system for exercise prescription among patients with multiple cardiovascular disease risk factors. *Mayo Clin Proc Qual Out.* 2020; <https://doi.org/10.1016/j.mayocpiqo.2020.08.005>. (In press).
15. Pescatello LS, Wu Y, Panza GA, et al. Development of a novel clinical decision support system for exercise prescription among patients with multiple cardiovascular disease risk factors. *Mayo Clin Proc Qual Out.* 2020 Oct;5(1):193-203. <https://doi.org/10.1016/j.mayocpiqo.2020.08.005>. PMID: 33718793.
16. Petrella RJ, Koval JJ, Cunningham DA, et al. Can primary care doctors prescribe exercise to improve fitness? The Step Test Exercise Prescription (STEP) project. *Am J Prev Med.* 2003;24(4):316-322. [https://doi.org/10.1016/s0749-3797\(03\)00022-9](https://doi.org/10.1016/s0749-3797(03)00022-9). PMID: 12726869.

17. Smith BJ, Owen AJ, Liew D, et al. Prescription of physical activity in the management of high blood pressure in Australian general practices. *J Hum Hypertens*. 2019;33(1):50-56. <https://doi.org/10.1038/s41371-018-0098-2>. PMID: 30181658.
18. Soegtrop R, Douglas-Vail M, Bechamp T, et al. Physical activity prescription by Canadian emergency medicine physicians. *Appl Physiol Nutr Metab*. 2018;43(8):861-864. <https://doi.org/10.1139/apnm-2017-0616>. PMID: 29522690.
19. Swinburn BA, Walter LG, Arroll B, et al. 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. <https://doi.org/10.2105/ajph.88.2.288>. PMID: 9491025
20. Thornton JS, Frémont P, Khan K, et al. Physical activity prescription: A critical opportunity to address a modifiable risk factor for the prevention and management of chronic disease: A position statement by the Canadian Academy of Sport and Exercise Medicine. *Br J Sports Med*. 2016;50(18):1109-1114. <https://doi.org/10.1136/bjsports-2016-096291>. PMID: 27335208

## 10. Physical Activity Referral

This section includes published work involving the referral of patients to various physical activity programs and resources, most commonly in community settings. Some articles in this section use the term prescription synonymously with referral and are therefore included here. Many of these articles originate from Europe (i.e., the U.K. and Sweden) where referral of patients to physical activity programs is more commonplace.

1. Almeida FA, Smith-Ray R, Van Den Berg R, et al. Utilizing a simple stimulus control strategy to increase physician referrals for physical activity promotion. *J Sport Exerc Psychol*. 2005; 27(4), 505-514. <https://doi.org/10.1123/jsep.27.4.505>.
2. Andersen P, Holmberg S, Lendahls L, et al. Physical activity on prescription with counsellor support: A 4-year registry-based study in routine health care in Sweden. *Healthcare (Basel)*. 2018 Apr 16;6(2):34. <https://doi.org/10.3390/healthcare6020034>. PMID: 29659546.
3. Andersen P, Lendahls L, Holmberg S, et al. Patients' experiences of physical activity on prescription with access to counsellors in routine care: A qualitative study in Sweden. *BMC Public Health*. 2019 Feb 20;19(1):210. <https://doi.org/10.1186/s12889-019-6535-5>. PMID: 30786907.
4. Arsenijevic J, Groot W. Physical activity on prescription schemes (PARS): Do programme characteristics influence effectiveness? Results of a systematic review and meta-analyses. *BMJ Open*. 2017 Feb 2;7(2):e012156. <https://doi.org/10.1136/bmjopen-2016-012156>. PMID: 28153931.
5. Bird EL, Biddle MSY, Powell JE. General practice referral of 'at risk' populations to community leisure services: Applying the RE-AIM framework to evaluate the impact of a community-based physical activity programme for inactive adults with long-term conditions. *BMC Public Health*. 2019 Oct 17;19(1):1308. <https://doi.org/10.1186/s12889-019-7701-5>. PMID: 31623584.
6. Buckley BJR, Finnie SJ, Murphy RC, et al. "You've Got to Pick Your Battles": A mixed-methods investigation of physical activity counselling and referral within general practice. *Int J Environ Res Public Health*. 2020 Oct 12;17(20):7428. <https://doi.org/10.3390/ijerph17207428>. PMID: 33053911.
7. Buckley BJR, Thijssen DHJ, Murphy RC, et al. Making a move in exercise referral: Co-development of a physical activity referral scheme. *J Public Health (Oxf)*. 2018 Dec 1;40(4):e586-e593. <https://doi.org/10.1093/pubmed/fty072>. PMID: 29688551.
8. Campbell F, Holmes M, Everson-Hock E, et al. A systematic review and economic evaluation of exercise referral schemes in primary care: A short report. *Health Technol Assess*. 2015 Jul;19(60):1-110. <https://doi.org/10.3310/hta19600>. PMID: 26222987.
9. Din NU, Moore GF, Murphy S, et al. Health professionals' perspectives on exercise referral and physical activity promotion in primary care: Findings from a process evaluation of the National Exercise Referral Scheme in Wales. *Health Educ J*. 2015 Nov;74(6):743-757. <https://doi.org/10.1177/0017896914559785>. PMID: 26527835.
10. Frebarger JK, Khoja S, Carey TS. Primary care physician referral to physical therapy for musculoskeletal conditions, 2003-2014. *J Gen Intern Med*. 2018 Jun;33(6):801-803. <https://doi.org/10.1007/s11606-018-4426-6>. PMID: 29623513.
11. Galaviz K, Lévesque L, Kotecha J. Evaluating the effectiveness of a physical activity referral scheme among women. *J Prim Care Community Health*. 2013 Jul 1;4(3):167-71. <https://doi.org/10.1177/2150131912463243>. PMID: 23799702.
12. Gallegos-Carrillo K, García-Peña C, Salmerón J, et al. Brief counseling and exercise referral scheme: A pragmatic trial in Mexico. *Am J Prev Med*. 2017 Feb;52(2):249-259. <https://doi.org/10.1016/j.amepre.2016.10.021>. PMID: 27939238.
13. Gallegos-Carrillo K, García-Peña C, Salmerón J, et al. Exercise-referral scheme to promote physical activity among hypertensive patients: Design of a cluster randomized trial in the primary health care units of Mexico's social security system. *BMC Public Health*. 2014 Jul 9;14:706. <https://doi.org/10.1186/1471-2458-14-706>. PMID: 25011612.



14. Gallegos-Carrillo K, Reyes-Morales H, Pelcastre-Villafuerte B, et al. Understanding adherence of hypertensive patients in Mexico to an exercise-referral scheme for increasing physical activity. *Health Promot Int.* 2021 Aug;36(4):952-963. <https://doi.org/10.1093/heapro/daaa110>. PMID: 33270847.
15. Hanson CL, Oliver EJ, Dodd-Reynolds CJ, et al. How do participant experiences and characteristics influence engagement in exercise referral? A qualitative longitudinal study of a scheme in Northumberland, UK. *BMJ Open.* 2019 Feb 20;9(2):e024370. <https://doi.org/10.1136/bmjopen-2018-024370>. PMID: 30787087.
16. Hanson CL, Oliver EJ, Dodd-Reynolds CJ, et al. We are failing to improve the evidence base for 'exercise referral': How a physical activity referral scheme taxonomy can help. *Br J Sports Med.* 2020 Jun;54(12):696-697. <https://doi.org/10.1136/bjsports-2019-101485>. PMID: 31848153.
17. Henderson HE, Evans AB, Allen-Collinson J, et al. The 'wild and woolly' world of exercise referral schemes: Contested interpretations of an exercise as medicine programme. *Qual Res Sport Exerc Health.* 2018; 10:4, 505-523. <https://doi.org/10.1080/2159676X.2017.1352018>.
18. Isaacs AJ, Critchley JA, Tai SS, et al. Exercise Evaluation Randomised Trial (EXERT): A randomised trial comparing GP referral for leisure centre-based exercise, community-based walking and advice only. *Health Technol Assess.* 2007 Mar;11(10):1-165, iii-iv. <https://doi.org/10.3310/hta11100>. PMID: 17313906.
19. James EL, Ewald B, Johnson N, et al. Efficacy of GP referral of insufficiently active patients for expert physical activity counseling: Protocol for a pragmatic randomized trial (The NewCOACH trial). *BMC Fam Pract.* 2014 Dec 29;15:218. <https://doi.org/10.1186/s12875-014-0218-1>. PMID: 25543688.
20. James EL, Ewald BD, Johnson NA, et al. Referral for expert physical activity counseling: A pragmatic RCT. *Am J Prev Med.* 2017 Oct;53(4):490-499. <https://doi.org/10.1016/j.amepre.2017.06.016>. PMID: 28818417.
21. Leemrijse CJ, de Bakker DH, Ooms L, et al. Collaboration of general practitioners and exercise providers in promotion of physical activity a written survey among general practitioners. *BMC Fam Pract.* 2015 Aug 6;16:96. <https://doi.org/10.1186/s12875-015-0316-8>. PMID: 26245953.
22. Leenaars KEF, Smit E, Wagemakers A, et al. Facilitators and barriers in the collaboration between the primary care and the sport sector in order to promote physical activity: A systematic literature review. *Prev Med.* 2015;81:460-478. <https://doi.org/10.1016/j.yjmed.2015.10.010>. PMID: 26522091.
23. Leijon ME, Bendtsen P, Nilsen P, et al. Does a physical activity referral scheme improve the physical activity among routine primary health care patients? *Scand J Med Sci Sports.* 2009 Oct;19(5):627-36. <https://doi.org/10.1111/j.1600-0838.2008.00820.x>. PMID: 18627557.
24. Leijon ME, Faskunger J, Bendtsen P, et al. Who is not adhering to physical activity referrals, and why? *Scand J Prim Health Care.* 2011 Dec;29(4):234-40. <https://doi.org/10.3109/02813432.2011.628238>. PMID: 22126223.
25. Martín-Borràs C, Giné-Garriga M, Puig-Ribera A, et al. A new model of exercise referral scheme in primary care: Is the effect on adherence to physical activity sustainable in the long term? A 15-month randomised controlled trial. *BMJ Open.* 2018 Mar 3;8(3):e017211. <https://doi.org/10.1136/bmjopen-2017-017211>. PMID: 29502081.
26. Morgan F, Battersby A, Weightman AL, et al. Adherence to exercise referral schemes by participants - what do providers and commissioners need to know? A systematic review of barriers and facilitators. *BMC Public Health.* 2016 Mar 5;16:227. <https://doi.org/10.1186/s12889-016-2882-7>. PMID: 26944952.
27. Pavey T, Taylor A, Hillsdon M, et al. Levels and predictors of exercise referral scheme uptake and adherence: A systematic review. *J Epidemiol Community Health.* 2012 Aug;66(8):737-44. <https://doi.org/10.1136/jech-2011-200354>. PMID: 22493474.
28. Pavey TG, Anokye N, Taylor AH, et al. The clinical effectiveness and cost-effectiveness of exercise referral schemes: A systematic review and economic evaluation. *Health Technol Assess.* 2011 Dec;15(44):i-xii, 1-254. <https://doi.org/10.3310/hta15440>. PMID: 22182828.
29. Pavey TG, Taylor AH, Fox KR, et al. Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: Systematic review and meta-analysis. *BMJ.* 2011 Nov 4;343:d6462. <https://doi.org/10.1136/bmj.d6462>. PMID: 22058134.
30. Petrescu-Prahova M, Kohn M, Leroux B, et al. Building community-clinical linkages to increase older adult physical activity: The PT-REFER trial protocol and participant baseline characteristics. *Contemp Clin Trials Commun.* 2019 May 1;15:100373. <https://doi.org/10.1016/j.conctc.2019.100373>. PMID: 31111115.
31. Portacio FG, Corvalan D, Stoutenberg M. Implementation of a referral scheme to text messaging programs for physical activity and health eating in underserved Hispanics. *Transl J ACSM.* 2020; 6(1):e000144. <https://doi.org/10.1249/TJX.0000000000000144>.
32. Rödger L, H Jonsdottir I, Börjesson M. Physical activity on prescription (PAP): Self-reported physical activity and quality of life in a Swedish primary care population, 2-year follow-up. *Scand J Prim Health Care.* 2016 Dec;34(4):443-452. <https://doi.org/10.1080/02813432.2016.1253820>. PMID: 27978781.
33. Rowley N, Mann S, Steele J, et al. The effects of exercise referral schemes in the United Kingdom in those with cardiovascular, mental health, and musculoskeletal disorders: A preliminary systematic review. *BMC Public Health.* 2018 Aug 2;18(1):949. <https://doi.org/10.1186/s12889-018-5868-9>. PMID: 30068338.



34. Rowley N, Steele J, Wade M, et al. Are exercise referral schemes associated with an increase in physical activity? Observational findings using individual patient data meta-analysis from the national referral database. *J Phys Act Health*. 2020 May;17(6):621-631. <https://doi.org/10.1123/jpah.2019-0435>. PMID: 32396867.
35. Rowley N, Steele J, Mann S, et al. Delivery approaches within exercise referral schemes: A survey of current practice in England. *J Phys Act Health*. 2021 Mar; 1-17. <https://doi.org/10.1123/jpah.2020-0388>. PMID: 33730692.
36. Shore CB, Hubbard G, Gorely T, et al. Insufficient reporting of factors associated with exercise referral scheme uptake, attendance, and adherence: A systematic review of reviews. *J Phys Act Health*. 2019 Aug 1;16(8):667-676. <https://doi.org/10.1123/jpah.2018-0341>. PMID: 31203705.
37. Wade M, Mann S, Copeland RJ, et al. Effect of exercise referral schemes upon health and well-being: Initial observational insights using individual patient data meta-analysis from the National Referral Database. *J Epidemiol Community Health*. 2020 Jan;74(1):32-41. <https://doi.org/10.1136/jech-2019-212674>. PMID: 31740446.
38. Waterman MR, Wiecha JM, Manne J, et al. Utilization of a free fitness center-based exercise referral program among women with chronic disease risk factors. *J Community Health*. 2014 Dec;39(6):1179-85. <https://doi.org/10.1007/s10900-014-9874-2>. PMID: 24752958.

## 11. Integration of Comprehensive Physical Activity Models into Health Systems

This section includes articles on completed work where the entire EIM model (assessment, prescription and referral) have all been integrated into a health system at the same time. While evidence in this area is still somewhat limited, we are hopeful to see more published reports on comprehensive EIM efforts in the near future.

1. Bowen PG, Opoku-Agyeman W, Clay OJ, et al. Promoting physical activity through policy at a single safety-net clinic: A pilot study. *Translational J ACSM*. 2021;6(2):e000160. <https://doi.org/10.1249/TJX.000000000000160>.
2. Galaviz KI, Estabrooks PA, Ulloa EJ, et al. Evaluating the effectiveness of physician counseling to promote physical activity in Mexico: An effectiveness-implementation hybrid study. *Transl Behav Med*. 2017 Dec;7(4):731-740. <https://doi.org/10.1007/s13142-017-0524-y>. PMID: 28936694.
3. Linke SE, Kallenberg GR, Kronick R, et al. Integrating "Exercise Is Medicine" into primary care workflow: A study protocol. *Transl Behav Med*. 2021 Apr 26;11(4):921-929. <https://doi.org/10.1093/tbm/ibaa088>. PMID: 32945881.

## 12. Economics of Physical Activity Promotion in Clinic Settings

This section includes articles that analyze the cost effectiveness of either physical activity (in general) or different components of the EIM model (more specifically).

1. Campbell F, Holmes M, Everson-Hock E, et al. A systematic review and economic evaluation of exercise referral schemes in primary care: A short report. *Health Technol Assess*. 2015 Jul;19(60):1-110. <https://doi.org/10.3310/hta19600>. PMID: 26222987.
2. Carlson SA, Fulton JE, Pratt M, et al. Inadequate physical activity and health care expenditures in the United States. *Prog Cardiovasc Dis*. 2015 Jan-Feb; 57(4):315-23. <https://doi.org/10.1016/j.pcad.2014.08.002>. PMID: 25559060.
3. Chenoweth D, Leutzinger J. The economic cost of physical inactivity and excess weight in American adults. *J Phys Act Health*. 2006 Apr;3(2):148-163. <https://doi.org/10.1123/jpah.3.2.148>. PMID: 28834464.
4. Ding D, Lawson KD, Kolbe-Alexander TL, et al. The economic burden of physical inactivity: A global analysis of major non-communicable diseases. *Lancet*. 2016;388(10051):1311-1324. [https://doi.org/10.1016/S0140-6736\(16\)30383-X](https://doi.org/10.1016/S0140-6736(16)30383-X). PMID: 27475266.
5. Elley R, Kerse N, Arroll B, et al. Cost-effectiveness of physical activity counselling in general practice. *N Z Med J*. 2004 Dec;117(1207):U1216. PMID: 15608809.
6. Garrett S, Elley CR, Rose SB, et al. Are physical activity interventions in primary care and the community cost-effective? A systematic review of the evidence. *Br J Gen Pract*. 2011 Mar;61(584):e125-33. <https://doi.org/10.3399/bjgp11X561249>. PMID: 21375895.
7. Pavey TG, Anokye N, Taylor AH, et al. The clinical effectiveness and cost-effectiveness of exercise referral schemes: A systematic review and economic evaluation. *Health Technol Assess*. 2011 Dec;15(44):i-xii, 1-254. <https://doi.org/10.3310/hta15440>. PMID: 22182828.
8. Romé A, Persson U, Ekdahl C, et al. Physical activity on prescription (PAP): Costs and consequences of a randomized, controlled trial in primary healthcare. *Scand J Prim Health Care*. 2009;27(4):216-222. <https://doi.org/10.3109/02813430903438734>. PMID: 19929183.
9. Roux L, Pratt M, Tengs TO, et al. Cost effectiveness of community-based physical activity interventions. *Am J Prev Med*. 2008 Dec;35(6):578-88. <https://doi.org/10.1016/j.amepre.2008.06.040>. PMID: 19000846.
10. Sato M, Du J, Inoue Y, et al. Older adults' physical activity and healthcare costs, 2003-2014. *Am J Prev Med*. 2020 May;58(5):e141-e148. <https://doi.org/10.1016/j.amepre.2019.12.009>. PMID: 32067872.
11. Wu S, Cohen D, Shi Y, et al. Economic analysis of physical activity interventions. *Am J Prev Med*. 2011 Feb;40(2):149-58. <https://doi.org/10.1016/j.amepre.2010.10.029>. PMID: 21238863.

## 13. Providing Training to Health Professionals and Students

This section includes articles related to providing physical activity education/training for different groups of health care providers. This includes efforts with current trainees (i.e., medical students and residents), as well as continuing education efforts with licensed professionals (i.e., physicians and nurses).

1. Antognoli EL, Seeholzer EL, Gullett H, et al. Primary care resident training for obesity, nutrition, and physical activity counseling: A mixed-methods study. *Health Promot Pract*. 2017 Sep;18(5):672-680. <https://doi.org/10.1177/1524839916658025>. PMID: 27402722.
2. Brannan M, Bernardotto M, Clarke N, et al. Moving healthcare professionals - A whole system approach to embed physical activity in clinical practice. *BMC Med Educ*. 2019 Mar 15;19(1):84. <https://doi.org/10.1186/s12909-019-1517-y>. PMID: 30876426.
3. Cardinal BJ, Park EA, Kim M, et al. If exercise is medicine, where is exercise in medicine? Review of U.S. medical education curricula for physical activity-related content. *J Phys Act Health*. 2015 Sep;12(9):1336-43. <https://doi.org/10.1123/jpah.2014-0316>. PMID: 25459966.
4. Dacey ML, Kennedy MA, Polak R, et al. Physical activity counseling in medical school education: A systematic review. *Med Educ Online*. 2014 Jul 24;19:24325. <https://doi.org/10.3402/meo.v19.24325>. PMID: 25062944.
5. Dirks-Naylor AJ, Griffiths CL, Bush MA. Exercise is medicine: Student pharmacists' perceptions and knowledge of exercise prescription. *Adv Physiol Educ*. 2018 Jun 1;42(2):289-294. <https://doi.org/10.1152/advan.00089.2017>. PMID: 29676608.
6. Dunlop M, Murray AD. Major limitations in knowledge of physical activity guidelines among UK medical students revealed: Implications for the undergraduate medical curriculum. *Br J Sports Med*. 2013 Jul;47(11):718-20. <https://doi.org/10.1136/bjsports-2012-091891>. PMID: 23314886.
7. Fowles JR, O'Brien MW, Solmundson K, et al. Exercise is Medicine Canada physical activity counselling and exercise prescription training improves counselling, prescription, and referral practices among physicians across Canada. *Appl Physiol Nutr Metab*. 2018 May;43(5):535-539. <https://doi.org/10.1139/apnm-2017-0763>. PMID: 29316409.
8. Frank E, Elon L, Hertzberg V. A quantitative assessment of a 4-year intervention that improved patient counseling through improving medical student health. *MedGenMed*. 2007 Jun 14;9(2):58. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1994883>. PMID: 17955112.
9. Frank E, Tong E, Lobelo F, et al. Physical activity levels and counseling practices of U.S. medical students. *Med Sci Sports Exerc*. 2008 Mar;40(3):413-21. <https://doi.org/10.1249/MSS.0b013e31815ff399>. PMID: 18379201.
10. Garry JP, Diamond JJ, Whitley TW. Physical activity curricula in medical schools. *Acad Med*. 2002 Aug;77(8):818-20. <https://doi.org/10.1097/00001888-200208000-00011>. PMID: 12176695.
11. Gates AB. Making every contact count for physical activity--for tomorrow's patients: The launch of the interdisciplinary, undergraduate, resources on exercise medicine and health in the UK. *Br J Sports Med*. 2016 Mar;50(6):322-3. <https://doi.org/10.1136/bjsports-2015-095489>. PMID: 26483443.
12. Goff SL, Holboe ES, Concato J. Pediatricians and physical activity counseling: How does residency prepare them for this task? *Teach Learn Med*. 2010 Apr;22(2):107-11. <https://doi.org/10.1080/10401331003656512>. PMID: 20614375.
13. Guseman EH, Whipps J, Howe CA, et al. First-year osteopathic medical students' knowledge of and attitudes towards physical activity. *J Am Osteopath Assoc*. 2018 Jun; 118(6):389-395. <https://doi.org/10.7556/jaoa.2018.083>. PMID: 29809256.
14. Holtz KA, Kokotilo KJ, Fitzgerald BE, et al. Exercise behaviour and attitudes among fourth-year medical students at the University of British Columbia. *Can Fam Physician*. 2013 Jan;59(1):e26-32. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3555675>. PMID: 23341676.
15. Kime N, Pringle A, Zwolinsky S, et al. How prepared are healthcare professionals for delivering physical activity guidance to those with diabetes? A formative evaluation. *BMC Health Serv Res*. 2020 Jan 3;20(1):8. <https://doi.org/10.1186/s12913-019-4852-0>. PMID: 31900136.
16. Kordi R, Moghadam N, Rostami M. Sports and exercise medicine in undergraduate medical curricula in developing countries: A long path ahead. *Med Educ Online*. 2011 Feb 15;16. <https://doi.org/10.3402/meo.v16i0.5962>. PMID: 21350601.
17. Kyei-Frimpong J, Blood-Siegfried J, Wijetilaka R, et al. Exercise as medicine: Providing practitioner guidance on exercise prescription. *Prev Med Rep*. 2021 Feb;22:101323. <https://doi.org/10.1016/j.pmedr.2021.101323>. PMID: 33659155.
18. Lianov L, Johnson M. Physician competencies for prescribing lifestyle medicine. *JAMA*. 2010 Jul 14;304(2):202-3. <https://doi.org/10.1001/jama.2010.903>. PMID: 20628134.
19. Mealy RN, Richardson LA, Miller B, et al. Exercise is Medicine: Knowledge and awareness among exercise science and medical school students. *Int J Exerc Sci*. 2019; 12(3):505-14. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6413848>. PMID: 30899348.

20. Ng V, Irwin JD. Prescriptive medicine: The importance of preparing Canadian medical students to counsel patients toward physical activity. *J Phys Act Health*. 2013 Aug;10(6):889-99. <https://doi.org/10.1123/jpah.10.6.889>. PMID: 23072743.
21. O'Brien MW, Shields CA, Oh PI, et al. Health care provider confidence and exercise prescription practices of Exercise is Medicine Canada workshop attendees. *Appl Physiol Nutr Metab*. 2017 Apr;42(4):384-390. <https://doi.org/10.1139/apnm-2016-0413>. PMID: 28177736.
22. O'Brien MW, Shields C, Crowell S, et al. The effects of previous educational training on physical activity counselling and exercise prescription practices among physicians across Nova Scotia: A cross-sectional study. *Can Med Educ J*. 2018 Nov;9(4):e35-e45. PMID: 30498542.
23. O'Brien MW, Shields CA, Solmundson K, et al. Exercise is Medicine Canada workshop training improves physical activity practices of physicians across Canada, independent of initial confidence levels. *Can Med Educ J*. 2020 Sept;11(5):e5-e15. <https://doi.org/10.36834/cmcej.68376>. PMID: 33062086.
24. O'Brien MW, Shields CA, Campbell KL, et al. Perceptions and practices of providing physical activity counselling and exercise prescriptions among physiotherapists in Nova Scotia. *Physiotherapy Canada*. 2020;72(3):230-238. <https://doi.org/10.3138/ptc-2018-0098>.
25. O'Donoghue G, Doody C, Cusack T. Physical activity and exercise promotion and prescription in undergraduate physiotherapy education: Content analysis of Irish curricula. *Physiotherapy*. 2011 Jun;97(2):145-53. <https://doi.org/10.1016/j.physio.2010.06.006>. PMID: 21497249.
26. Osborne SA, Adams JM, Fawcner S, et al. Tomorrow's doctors want more teaching and training on physical activity for health. *Br J Sports Med*. 2017 Apr;51(8):624-625. <https://doi.org/10.1136/bjsports-2016-096807>. PMID: 27797739.
27. Pojednic R, Stoutenberg M. Key steps to implementing physical activity into health professional training programs. *Curr Sports Med Rep*. 2020 Oct;19(10):396-398. <https://doi.org/10.1249/JSR.0000000000000756>. PMID: 33031203.
28. Recker AJ, Sugimoto SF, Halvorson EE, et al. Knowledge and habits of exercise in medical students. *Am J Lifestyle Med*. 2020 Oct; 15(3):214-219. <https://doi.org/10.1177/1559827620963884>. PMID: 34025308.
29. Stanford FC, Durkin MW, Stallworth JR, et al. Factors that influence physicians' and medical students' confidence in counseling patients about physical activity. *J Prim Prev*. 2014 Jun;35(3):193-201. <https://doi.org/10.1007/s10935-014-0345-4>. PMID: 24682887.
30. Stoutenberg M, Powell BJ, Busignani PJ, et al. Identifying key physical activity categories and topics to include in health professional training programs. *Teach Learn Med*. 2020 Aug-Sep;32(4):362-370. <https://doi.org/10.1080/10401334.2020.1730183>. PMID: 32107937.
31. Stoutenberg M, Stasi S, Stamatakis E, et al. Physical activity training in US medical schools: Preparing future physicians to engage in primary prevention. *Phys Sportsmed*. 2015 Nov;43(4):388-94. <https://doi.org/10.1080/00913847.2015.1084868>. PMID: 26365470.
32. Strong A, Stoutenberg M, Hobson-Powell A, et al. An evaluation of physical activity training in Australian medical school curricula. *J Sci Med Sport*. 2017 Jun;20(6):534-538. <https://doi.org/10.1016/j.jsams.2016.10.011>. PMID: 28209318.
33. The Bipartisan Policy Center, American College of Sports Medicine, Alliance for a Healthier Generation. Teaching nutrition and physical activity in medical school: Training doctors for prevention-oriented Care. Washington, DC: *Bipartisan Policy Center Nutrition and Physical Activity Initiative*; June 2014. [https://bipartisanpolicy.org/wp-content/uploads/2019/03/Med\\_Ed\\_Report.pdf](https://bipartisanpolicy.org/wp-content/uploads/2019/03/Med_Ed_Report.pdf).
34. Thornton J, Khan K, Weiler R, et al. Are family medicine residents trained to counsel patients on physical activity? The Canadian experience and a call to action. *Postgrad Med J*. 2021 Sept;postgradmedj-2021-140829. <https://doi.org/10.1136/postgradmedj-2021-140829>. PMID:34588292.
35. Tovar G, Ladino Marín EV. Physical activity and nutrition in medical education. *Revista de Nutrición Clínica y Metabolismo*. 2019;2(2):37-43. <https://doi.org/10.35454/rncm.v2n2.005>.
36. Tovar G, López G, Ibáñez M, et al. Institutionalized physical activity curriculum benefits of medical students in Colombia. *Educ Health*. 2016;29:203-9. <https://doi.org/10.4103/1357-6283.204212>. PMID: 28406104.
37. Trilk J, Nelson L, Briggs A, et al. Including lifestyle medicine in medical education: Rationale for American College of Preventive Medicine/American Medical Association Resolution 959. *Am J Prev Med*. 2019 May;56(5):e169-e175. <https://doi.org/10.1016/j.amepre.2018.10.034>. Erratum in: *Am J Prev Med*. 2019 Jul;57(1):134. PMID: 31003604.
38. Trilk JL, Phillips EM. Incorporating 'Exercise is Medicine' into the University of South Carolina School of Medicine Greenville and Greenville Health System. *Br J Sports Med*. 2014 Feb;48(3):165-7. <https://doi.org/10.1136/bjsports-2013-093157>. PMID: 24311603.
39. Wattanapisit A, Petchuay P, Wattanapisit S, et al. Developing a training programme in physical activity counselling for undergraduate medical curricula: A nationwide Delphi study. *BMJ Open*. 2019 Sep 3;9(8):e030425. <https://doi.org/10.1136/bmjopen-2019-030425>. PMID: 31481372.
40. Wattanapisit A, Nongkhai MPN, Hemaratchanon P, et al. What elements of sport and exercise science should primary care physicians learn? An interdisciplinary discussion. *Front Med (Lausanne)*. 2021 Aug;8:704403. <https://doi.org/10.3389/fmed.2021.704403>. PMID: 34422861.

41. Weiler R, Chew S, Coombs N, et al. Physical activity education in the undergraduate curricula of all UK medical schools: are tomorrow's doctors equipped to follow clinical guidelines? *Br J Sports Med.* 2012 Nov;46(14):1024-6. <https://doi.org/10.1136/bjsports-2012-091380>. PMID: 22846233.

## 14. EIM On Campus

This section includes published work related to the implementation, barriers, adaptation and successes of different campuses that have chosen to adopt the EIM on Campus program.

1. Bachmeier EE, Garst B, Pingel MJ, et al. Effectiveness of an Exercise is Medicine-On Campus virtual program on perceived stress levels of faculty and staff. *J Phys Act Res.* 2021; 6(1):59-84.
2. Biber DD, Knoll C. Exercise is Medicine on Campus®: A pilot study. *Recr Sports J.* 2020; 44(2):149-157. <https://doi.org/10.1177/1558866120964815>.
3. Bopp M, Bopp CM, Duffey RG, et al. Implementation and evaluation of an Exercise is Medicine™ on Campus week. *Eval Program Planning.* 2015; 52:176-181. <https://doi.org/10.1016/j.evalprogplan.2015.06.003>. PMID: 26099563.
4. Lagally KM, Sherman J, Amorose AJ, et al. Exercise is Medicine on Campus programs: A descriptive study. *Recreational Sports Journal.* 2019; 43(2): 106-116. <https://doi.org/10.1177/1558866119889898>.
5. Leininger LJ, Morrissey JL, DeBeliso M, Adams KJ. Exercise is Medicine® on Campus: Effectiveness of an employee circuit training class. *J Phys Act Res.* 2020; 5(1):45-48. <https://doi.org/10.12691/jpar-5-1-9>.

6. Gastelum-Morales M, Leininger LJ, Morrissey JL et al. Evaluation of physical activity participation, self-efficacy and outcome expectancy for employees participating in Exercise Is Medicine® On Campus program. *Am J Undergrad Res.* 2021 Mar; 17(4). <https://doi.org/10.33697/ajur.2020.034>.
7. McEachern BM, Jackson J, Yungblut S, et al. Barriers and facilitators to implementing Exercise is Medicine Canada On Campus groups. *Health Promot Pract.* 2019; 20(5), 751-759. <https://doi.org/10.1177/1524839919830923>. PMID: 30786774.
8. Melton B, Williamson JA, Bland H, et al. Using the Exercise is Medicine® on Campus platform to assess college students' practice of physical activity in a rural setting. *J Ga Public Health Assoc.* 2016; 5(4). <https://www.gapha.org/wp-content/uploads/2016/06/10-5.402-Using-the-Exercise-is-Medicine.pdf>.
9. Stanford K, Pomeroy A, Bates LC, et al. Exercise is Medicine on Campus during COVID-19: Necessary adaptations and continuing importance. *Trans J ACSM.* 2020; 5(12). e000157. [https://journals.lww.com/acsm-tj/Fulltext/2020/10150/Exercise\\_Is\\_Medicine\\_on\\_Campus\\_during\\_COVID\\_19\\_.aspx](https://journals.lww.com/acsm-tj/Fulltext/2020/10150/Exercise_Is_Medicine_on_Campus_during_COVID_19_.aspx)
10. Wilson OWA, Bhuiyan N, Papalia Z, et al. The implementation and outcomes of Exercise Is Medicine on Campus. *Transl Journal ACSM.* 2018; 3(20):158-168. <https://doi.org/10.1249/TJX.0000000000000071>.
11. Winters C, Sallis RE. Five steps to launching Exercise is Medicine® on your campus. *ACSM's Health & Fitness Journal.* 2015; 19(4):28-33. <https://doi.org/10.1249/FIT.0000000000000135>.