

GEEK NOTES

PILATES

Mat Pilates provides benefits for fitness, strength, balance, flexibility, cognition, mental wellbeing and sleep.

The Pilates method is a mind-body exercise that combines strength, flexibility, muscular control and balance exercises.(1-4) It focuses particularly on the muscles of the lower back and pelvis which are very important to maintain activities of daily living.(3, 4) Pilates exercises can be done on a mat or using apparatus.(5) Mat Pilates is performed on the floor and accessories like rubber bands or Swiss balls may be used.(3, 5)

Pilates has been shown to have a medium impact on improving cardiovascular fitness, leg strength, hip and lower back flexibility, balance and functional mobility and may improve upper limb flexibility. (6-9) It can have a good impact on reducing the risk of falls in older people and has been shown to reduce feelings of fatigue and increasing feelings of energy.(10, 11) Pilates has also been shown to help reduce symptoms of anxiety and depression and can have a positive impact on quality of sleep.(11-13)

Guidelines

The UK Chief Medical Officers' and the World Health Organization guidelines:(14, 15)

- In addition to cardiovascular physical activity, all adults should also do musclestrengthening physical activity:
 - On at least 2 days each week
 - o At moderate or greater intensity
 - Involving all major muscle groups
- New to exercise? Start by doing small amounts and gradually, over time, increase how often, how intensely and for how long you exercise.
- For those age 65 years and over, be as physically active as your abilities allow and adjust how much effort you put into physical activity based on your fitness and strength levels.



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GOLDSTER * Points and Evidence Levels for this Activity					
Domain	Impact Strength	Points	Information on Evidence	Evidence Type	Evidence Level
Physical	Medium	2	In people aged 60 and older, mat Pilates has been shown to have a medium impact on improving cardiovascular fitness, leg strength, hip and lower back flexibility, dynamic and postural balance, and functional mobility and may improve upper limb flexibility. (6-9) It has been shown to have a strong impact on reduce risk of falls.(10) In adults, mat Pilates has been shown to have a medium impact on reducing feelings of fatigue and increasing feelings of energy.(11)	Systematic review	Moderate, High Low
Cognitive	Medium	2	In women aged 60 and older, Pilates has been shown to be associated with a medium impact on aspects of cognition including verbal fluency and executive function.(2)	Systematic review	Moderate
Emotional	Medium	2	In adults, Pilates has been shown to have a medium impact reducing symptoms of anxiety and depression and can have a positive impact on quality of sleep.(11-13).	Systematic review	Low

References

1. Zhang Y, Li C, Zou L, Liu X, Song W. The Effects of Mind-Body Exercise on Cognitive Performance in Elderly: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2018;15(12). <u>https://doi.org/10.3390/ijerph15122791</u>

2. García-Garro PA, Hita-Contreras F, Martínez-Amat A, Achalandabaso-Ochoa A, Jiménez-García JD, Cruz-Díaz D, et al. Effectiveness of A Pilates Training Program on Cognitive and Functional Abilities in Postmenopausal Women. Int J Environ Res Public Health. 2020;17(10). https://doi.org/10.3390/ijerph17103580

3. Wells C, Kolt GS, Bialocerkowski A. Defining Pilates exercise: a systematic review. Complement Ther Med. 2012;20(4):253-62. <u>https://doi.org/10.1016/j.ctim.2012.02.005</u>

4. Granacher U, Gollhofer A, Hortobágyi T, Kressig RW, Muehlbauer T. The importance of trunk muscle strength for balance, functional performance, and fall prevention in seniors: a systematic review. Sports Med. 2013;43(7):627-41. <u>https://doi.org/10.1007/s40279-013-0041-1</u>

5. Brent D. Anderson AS. Introduction to Pilates-Based Rehabilitation. Orthopaedic Physical Therapy Clinics of North America [Internet]. 2000; 9(3):[395-410 pp.].

https://www.researchgate.net/publication/279611206_Introduction_to_Pilates-Based_Rehabilitation

6. Bueno de Souza RO, Marcon LF, Arruda ASF, Pontes Junior FL, Melo RC. Effects of Mat Pilates on Physical Functional Performance of Older Adults: A Meta-analysis of Randomized Controlled Trials. Am J Phys Med Rehabil. 2018;97(6):414-25.

https://journals.lww.com/ajpmr/Fulltext/2018/06000/Effects_of_Mat_Pilates_on_Physical_Functional.6.aspx

7. Fernández-Rodríguez R, Álvarez-Bueno C, Ferri-Morales A, Torres-Costoso AI, Cavero-Redondo I, Martínez-Vizcaíno V. Pilates Method Improves Cardiorespiratory Fitness: A Systematic Review and Meta-Analysis. J Clin Med. 2019;8(11). <u>https://doi.org/10.3390/jcm8111761</u>

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8. Casonatto J, Yamacita CM. Pilates exercise and postural balance in older adults: A systematic review and meta-analysis of randomized controlled trials. Complement Ther Med. 2020;48:102232. <u>https://doi.org/10.1016/j.ctim.2019.102232</u>

9. Donatoni da Silva L, Shiel A, McIntosh C. Effects of Pilates on the risk of falls, gait, balance and functional mobility in healthy older adults: A randomised controlled trial. J Bodyw Mov Ther. 2022;30:30-41. <u>https://doi.org/10.1016/j.jbmt.2022.02.020</u>

10. Fernández-Rodríguez R, Álvarez-Bueno C, Ferri-Morales A, Torres-Costoso A, Pozuelo-Carrascosa DP, Martínez-Vizcaíno V. Pilates improves physical performance and decreases risk of falls in older adults: a systematic review and meta-analysis. Physiotherapy. 2021;112:163-77. https://doi.org/10.1016/j.physio.2021.05.008

11. Fleming KM, Herring MP. The effects of pilates on mental health outcomes: A metaanalysis of controlled trials. Complementary Therapies in Medicine. 2018;37:80-95. https://doi.org/10.1016/j.ctim.2018.02.003

12. Soori S, Heirani A, Rafie F. Effects of the aerobic and Pilates exercises on mental health in inactive older women. J Women Aging. 2022;34(4):429-37.

https://doi.org/10.1080/08952841.2021.1924576

medical-officers-report.

13. Fank F, Pereira FDS, Dos Santos L, de Mello MT, Mazo GZ. Effects of Exercise on Sleep in Older Adults: An Overview of Systematic Reviews and Meta-Analyses. J Aging Phys Act. 2022;30(6):1101-17. <u>https://doi.org/10.1123/japa.2021-0444</u>

14. World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization; 2020 [Available from: https://www.who.int/publications/i/item/9789240015128.

15. Department of Health and Social Care LCWG, Department of Health Northern Ireland, and the Scottish Government,. UK Chief Medical Officers' Physical Activity Guidelines. 2019 [Available from: https://www.gov.uk/government/publications/physical-activity-guidelines-uk-chief-

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