

## AHS Complementary and Integrative Medicine Section: Patient Education Kit for Migraine

**Exercise:** Regular exercise reduces headache frequency, severity, and duration.<sup>1,2,3</sup> There are positive effects on neuroinflammatory, neurovascular, and psychological systems during exercise, which contribute to improvements in headache.<sup>4</sup> Exercise is beneficial when performed on its own, however it may have even more impact when used in combination with other preventive treatments, such as medication.<sup>5,6</sup> Evidence-based suggestions to consider are as follows:

- **Sustainable exercise:** Be kind to yourself. Develop an exercise program that is sustainable, enjoyable, and convenient. A combination of aerobic exercise (e.g., brisk walking, running, swimming) and resistance training (e.g., yoga, Pilates) is recommended.<sup>7,8</sup> Choose exercises you can tolerate, such as low-impact exercise that are gentle on your body. Vary your exercise routine to keep it fun; this can help you stick with a regular exercise plan over time.<sup>9</sup>
- **Exercise Intensity and Frequency:** Start with slow, gentle exercise, and increase the intensity, frequency, and duration of exercise over time as endurance improves. Higher-intensity training has increased benefit for headache prevention.<sup>10</sup> Strive to exercise for 30 minutes per day, at least 5 days per week.<sup>11</sup> Include muscle-strengthening activities at least two days per week.<sup>12</sup>
- **Food and Liquid Intake:** Maintain good hydration before, during, and after exercise. Even mild dehydration can trigger headaches.<sup>13</sup> Eat a balanced snack including protein, fat, and carbohydrates before exercise.
- **Neck pain:** Many individuals with headache also have neck pain. Aerobic exercise has been shown to reduce neck pain, as well as migraine and tension-type headache.<sup>14</sup> Be mindful of the positioning of your head and neck during exercise. If you need additional support with neck pain, speak with your physician.
- **Relaxation Training:** The practice of yoga has been shown to decrease headache frequency, intensity, disability, and use of rescue medications, when used in combination with standard migraine treatments, such as medications and lifestyle changes. Strive to do yoga for 60 minutes daily, 3-5 days per week.<sup>15</sup> Yoga can be performed in the home or in a teaching center.

### References:

1. Lemmens J, De Pauw J, Van Soom T, Michiels S, Versijpt J, van Breda E, Castein R, De Hertogh W. The effect of aerobic exercise on number of migraine days, duration and pain intensity in migraine: a systematic literature review and meta-analysis. *The Journal of Headache and Pain* (2019) 20:16.
2. Machado-Oliveira, Luciano, et al. "Effects of different exercise intensities on headache: a systematic review." *American Journal of Physical Medicine & Rehabilitation* 99.5 (2020): 390-396.
3. Barber, Mark, and Anna Pace. "Exercise and Migraine Prevention: a Review of the Literature." *Current Pain and Headache Reports* 24.8 (2020): 1-7.
4. Irby, Megan B., et al. "Aerobic exercise for reducing migraine burden: mechanisms, markers, and models of change processes." *Headache: The Journal of Head and Face Pain* 56.2 (2016): 357-369.
5. Varkey, Emma, et al. "Exercise as migraine prophylaxis: a randomized study using relaxation and topiramate as controls." *Cephalalgia* 31.14 (2011): 1428-1438.
6. Santiago, Michelle Dias Santos, et al. "Amitriptyline and aerobic exercise or amitriptyline alone in the treatment of chronic migraine: a randomized comparative study." *Arquivos de neuro-psiquiatria* 72.11 (2014): 851-855.
7. Nelson M. E., Rejeski W. J., Blair S. N., Duncan P. W., Judge J. O., King A. C., et al. . (2007). Physical activity and public health in older adults: recommendation from the American college of sports medicine and the American heart association. *Med. Sci. Sports Exerc.* 39, 1435–1445.
8. Garber C. E., Blissmer B., Deschenes M. R., Franklin B. A., Lamonte M. J., Lee I. M., et al. . (2011). American college of sports medicine position stand. Quantity and quality of exercise for developing and maintaining

cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Med. Sci. Sports Exerc.* 43, 1334–1359.

9. Lakicevic, Nemanja, et al. "Make Fitness Fun: Could Novelty Be the Key Determinant for Physical Activity Adherence?" *Frontiers in Psychology* 11 (2020).
10. Barber, Mark, and Anna Pace. "Exercise and Migraine Prevention: a Review of the Literature." *Current Pain and Headache Reports* 24.8 (2020): 1-7.
11. Nelson M. E., Rejeski W. J., Blair S. N., Duncan P. W., Judge J. O., King A. C., et al. . (2007). Physical activity and public health in older adults: recommendation from the American college of sports medicine and the American heart association. *Med. Sci. Sports Exerc.* 39, 1435–1445.
12. Garber C. E., Blissmer B., Deschenes M. R., Franklin B. A., Lamonte M. J., Lee I. M., et al. . (2011). American college of sports medicine position stand. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Med. Sci. Sports Exerc.* 43, 1334–1359.
13. Jones, Christopher W., et al. "Intravenous fluid for the treatment of emergency department patients with migraine headache: a randomized controlled trial." *Annals of Emergency Medicine* 73.2 (2019): 150-156.
14. Krøll, Lotte Skytte, et al. "The effects of aerobic exercise for persons with migraine and co-existing tension-type headache and neck pain. A randomized, controlled, clinical trial." *Cephalalgia* 38.12 (2018): 1805-1816.
15. Kumar, Anand, et al. "Effect of yoga as add-on therapy in migraine (CONTAIN): A randomized clinical trial." *Neurology* 94.21 (2020): e2203-e2212.