



Week 3:

The Wisconsin AD Exercise

Newsletter



Pro Tip

Does exercise sometimes feel like just another task? Or, maybe it's easy to make an excuse for why you shouldn't exercise?

Triggers (i.e. simple reminders) can be used to help make exercise automatic, and a natural part of your daily routine. Here are a few "trigger" ideas to help you:

- Getting up in the morning = going for a bike ride
- TV remote = online Zumba class
- Yoga mat = yoga flow
- Logging off your computer = going for a walk

Coach's Playbook

[Exercise & Mental Health](#) - Mikkelsen et al. 2017

Can exercise impact mental health?

Research continually suggests that exercise can benefit mental health. Specifically, there have been studies showing improvement in depressive symptoms, anxiety, panic disorder, and stress.

Both aerobic and non-aerobic exercise have shown positive effects on mood and mental health. Studies that compared the two types of exercise found similar improvements in anxiety and depression in both exercise groups, suggesting one is not necessarily better than the other. One study also showed the more consistent the exercise is performed, the lower the risk of depressive symptoms.

How does exercise impact mental health?

Research suggests there are three types of mechanisms through which exercise positively impacts mental health:

- Physiological mechanisms
- Psychological mechanisms

- Inflammation mechanisms

Physiological mechanisms

There are 6 main theories that involve exercise impacting mental health through physiological mechanisms:

1. Endorphin hypothesis - the feelings of joy, peacefulness, and dulled physical pain following intense exercise ("runners high") are due to increased levels of endorphins.
2. Thermogenic hypothesis - an increase in body temperature causes an increase in mood after exercise. This hypothesis is generally unsupported.
3. Mitochondrial function - vital to neuroplasticity and thus mental health. Exercise increases the production of mitochondria.
4. Mammalian target of rapamycin (mTOR) - controls cell growth and metabolism and is linked to antidepressant effects. Exercise activates mTOR in brain regions associated with emotional behavior and cognition.
5. Neurotransmitters (especially Serotonin and noradrenaline) - imbalanced in those with depression and anxiety. Exercise increases these levels in the brain.
6. Hypothalamic-pituitary-adrenal (HPA) axis - releases cortisol and is hyperactive in depressed individuals. Exercise can attenuate the HPA axis response to stress.

Psychological mechanisms

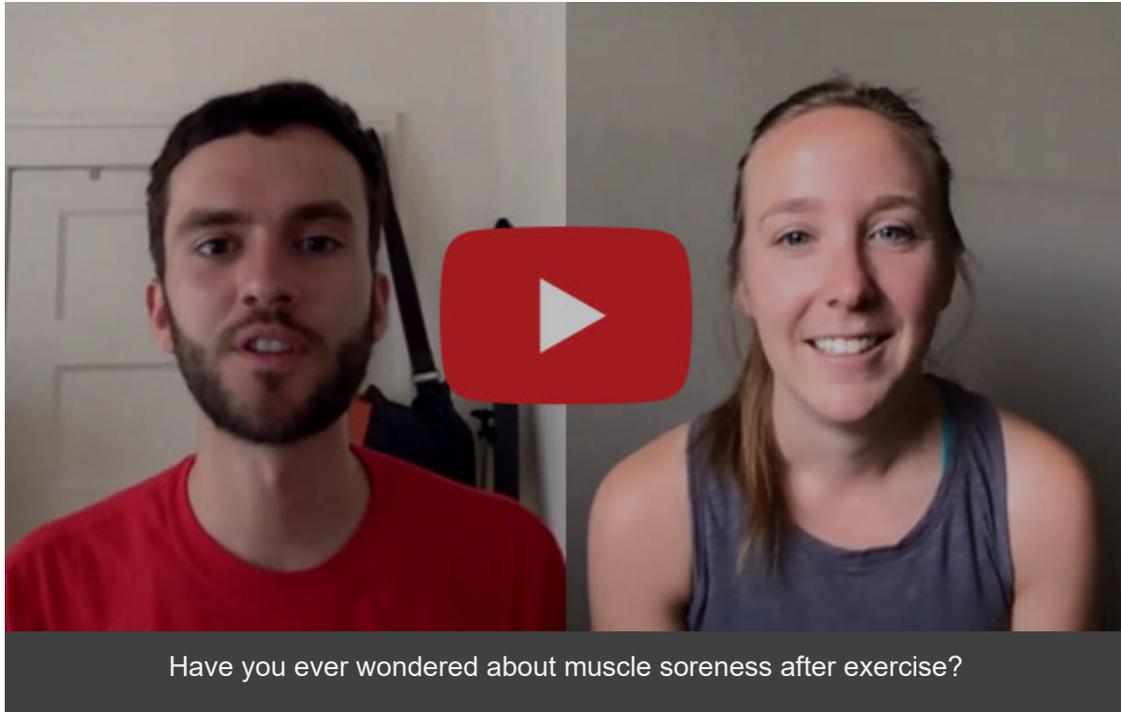
Exercise is shown to improve mood and mental health by acting as a distraction from negative thoughts, increasing self-esteem through self-efficacy and mastery, and providing a social outlet for those with anxiety, depression, and/or stress.

Inflammation mechanisms

There are 4 main mechanisms related to the anti-inflammatory effects of exercise that in turn may improve mental health:

- Cytokines (specifically IL-6) - released in exercise and stimulates the production of anti-inflammatory cytokines and inhibits the production of pro-inflammatory cytokines that are linked to depression.
- Adipose (fat) tissue - responsible for the production of pro-inflammatory cytokines related to depression. Exercise can promote the loss of adipose tissue, reducing inflammation.
- Toll-like receptors (TLR) - mediate whole-body inflammation, produce pro-inflammatory cytokines, and relate to depression. The expression of TLR is increased in sedentary individuals compared to active individuals.
- Vagal tone - can contribute to a pro-inflammatory environment when weakened, but an anti-inflammatory reflex when increased, as through exercise.

Ask the Exercise Physiologist



Do you have a question for our Exercise Physiologists?

Send your question(s) to [Camille Conway](#).

You may be featured in an upcoming newsletter!

Join us next week as we dive into the different types of exercise and the importance of recovery!

Going the Extra Mile...

Here are a couple of additional resources to help you on your exercise journey.

Doughterty et al. 2017 [*Relationship between cardiorespiratory fitness, hippocampal volume, and episodic memory in a population at risk for*](#)

[Alzheimer's disease](#)

Dementia Matters - [Building the Brain: Finding Cognitive Benefits of Physical Activity](#)



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