Week 5:

The Wisconsin AD Exercise Newsletter

Pro Tip

Exercise considerations when you have a cold or allergies.
Symptoms above the neck, like a runny nose or a mild sore throat, are generally considered safe to continue exercising.

Symptoms below the neck, like a cough or shortness of breath, should be met with caution and rest.

Listen to your body!
If it's telling you to rest, or exercise at a reduced intensity, always listen!

Coach's Playbook

Exercise and Immune Function - Simpson et al. 2015

What impact does exercise have on our immune function and how can this impact how we respond to acute respiratory illnesses?
Exercise causes an increase in immune function and a decrease in systemic inflammation.

There is considerable research that moderate exercise improves immune system function and even a single episode of exercise can affect the lymphocyte count by 2-5x the concentration and can last up to 6-24 hours after exercise.

The predominant immune cells increased with exercise are neutrophils (front line defense against invading pathogens), lymphocytes (defense against pathogens and consist of T and B cells) and to a lesser extent monocytes (remove dead or damaged tissues, destroy cancer cells, and regulate immunity against foreign substances). The cells that are increased with exercise tend to have an increased ability to move within the body, to identify pathogens (such as bacteria and viruses), and respond to pathogens.

The proposed mechanism for the ***increase in immune function*** with exercise is the increase in cardiac output and blood flow. These increases cause the mobility of leukocytes from inside blood vessels and other organs that store our leukocytes, including the lungs, liver, and spleen. Stress hormones released during exercise also mobilize leukocytes.

Exercise may also enhance the immune system by ***decreasing systemic inflammation*** by reducing pro-inflammatory abdominal cavity fat, also called visceral fat. Visceral fat is more inflammatory and correlates with chronic health conditions. Skeletal muscles release anti-inflammatory molecules such as IL-6, IL-1, and IL-10 receptor antagonists.

There are also indirect mechanisms that increase immune function through exercise such as:

1. Reduced stress
2. Increased antioxidant defense system and prevented oxidative DNA damage
3. Improvement in cardiovascular function which helps immune cells travel between circulation, lymph system, and peripheral tissue.

Are there any studies looking at exercise and acute respiratory infections (ARIs)?

MEPARI-2, Barret et al. 2018, is a randomized control trial conducted at UW Madison which sought to replicate findings of the original MEPARI trial, but with a younger cohort (30-69 years old compared to >50 in the original MEPARI trial).

It sought to assess the preventative effects of either meditation through mindfulness-based stress reduction (MBSR), an 8-week moderate exercise program, or a control group. The objective was to compare incidence, duration, and severity of ARIs within these three groups.

The study was 37 weeks long, and during that time frame, the incidence, ***duration, and severity*** of ARI were lower for the MBSR and exercise groups. The control group had more ARI episodes and longer duration. They also found that the MBSR and exercise groups had reduced absenteeism, need for health care utilization for ARI, and medication use during ARI. The exercise group was also found to have reduced stress and depressive symptoms and improved sleep, self-efficacy, and attention. The findings suggest a moderate reduction in ARI with either MBSR or exercise.

Ask the Exercise Physiologist

How to Stay Motivated!

Do you have a question for our Exercise Physiologists?

Send your question(s) to Camille Conway.

You may be featured in an upcoming newsletter!

Introducing The Sideline, a new group brought to you by the Wisconsin AD Exercise Newsletter team.

In sports, the sideline is a place where you take a break to cheer on your teammates and get ready for your next time back on the field/court/rink. So we created this group for you all to take a break with your fellow teammates to post achievements, recognize small milestones, encourage others, gain motivation or additional support, seek advice on challenges you face, and provide your very own tips and tricks you pick up on your exercise journey.

We're on this journey together!

To join **The Sideline** group simply open Microsoft Teams and click on the "join or create team" button in the Teams tab. Then, enter **2u9vedu** into the "join a team with a code" box. We're looking forward to seeing you on **The Sideline!**

Tune in next week to learn about exercise barriers and how to overcome them.

Going the Extra Mile...

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

Schultz, et al. 2018, Cardiorespiratory fitness attenuates the influence of amyloid on cognition

Campbell, Turner, 2018. Debunking the Myth of Exercise-Induced Immune Suppression: Redefining the Impact of Exercise on Immunological Health Across the Lifespan