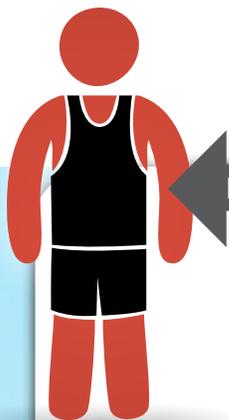




BALANCING EXERCISE-INDUCED INFLAMMATION

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EXERCISE-INDUCED INFLAMMATION IS THE BODY'S RESPONSE TO INJURY DUE TO INTENSE PHYSICAL ACTIVITY

- The immune system response causes redness, swelling, pain.
- Acute inflammation is a normal response to high-intensity exercise, but prolonged (chronic) inflammation is a sustained response that affects the entire body.
- Prolonged Inflammation:
 1. Causes fatigue, muscle damage and soreness.
 2. Limits muscle growth and training progression and increases muscle loss.
 3. Modulating prolonged inflammation may enhance recovery & reduce soreness.

ROLE OF NUTRITION IN REDUCING INFLAMMATION:

CONSUME FLUIDS DURING EXERCISE



- Consume fluids and electrolytes to prevent dehydration and maintain saliva, which contains anti-microbial properties.

MEET PROTEIN REQUIREMENTS



- Supports immune cell synthesis & reduces exercise-induced muscle damage.
- Consume **20-30 grams** of high-quality protein post-exercise (depending on body weight).

INCREASE OMEGA-3 FATTY ACIDS



- Essential fats which support brain health & reduce inflammation.
- Mickleborough et al showed Creatine Kinase (a marker of muscle damage) decreased with omega-3 marine oil compared to a placebo.
- **High omega-3 foods:** salmon, tuna, mackerel, herring, walnuts, flaxseed, chia seeds.
- Aim for 1-3 grams/day.

SELECT HIGH-ANTIOXIDANT FOODS



- Consuming fruits/veggies vs. excess antioxidant supplements (which have been shown to inhibit muscle recovery and impair training adaptations) will dampen the oxidative stress caused by exhaustive exercise.
- **Foods high in vitamins C, E, and A:** dark leafy greens, nuts/seeds, avocado, broccoli, peppers, berries, citrus, tomatoes, carrots, sweet potatoes/squash.

TRY TART CHERRY JUICE



- Shown to maintain muscle strength and reduce muscle pain by reducing inflammation and oxidative stress.
- High in **anthocyanins**—antioxidant found in purple and red produce.

OPTIMIZE VITAMIN D



- Made by the body in response to sunlight, and regulates inflammatory response.
- Many athletes are deficient due to low sun exposure during peak hours (10am-2pm), and the difficulty of getting enough through food.
- **High vitamin D foods:** Fatty fish, egg yolks, fortified dairy products.
- **Typical needs:** 2000-5000 IU vitamin D per day, depending on diet and outdoor activity.

EXPERIMENT WITH NITRIC OXIDE & NITRATES



- Nitrates convert to nitric oxide (NO) in the body.
- **Nitric oxide:** Increases blood flow, which may reduce inflammation & enhance recovery.
- **High nitrate foods:** celery, leafy greens, beets.

SEASON WITH HERBS & SPICES



- Contain various antioxidants, minerals, vitamins.
- **Best choices:** ginger, turmeric (curry), garlic, cinnamon, rosemary.