

RESEARCH ON DAIRY'S IMPACT ON SPORTS PERFORMANCE AND RECOVERY

SPORT PERFORMANCE AND RECOVERY: THE ROLE OF DAIRY¹



1. Carbohydrates + protein fuel performance, then repair and replenish muscles after activity.



2. Replaces fluids, electrolytes and other nutrients lost during activity.



3. Vitamin D, calcium, phosphorus and potassium help maintain strong bones, proper muscle functioning and fluid balance.



Yogurt*

Carbohydrate: 17 g

Protein: 13 g

Leucine: 1.3 g

*1 cup, low-fat, plain

Aim for 20–30 g of protein per meal, choose sources higher in the amino acid leucine. Experts recommend aiming for ~2.5 g of leucine per meal.¹

EATING DAIRY HAS BEEN LINKED WITH REDUCED CHRONIC INFLAMMATION ACROSS THE LIFESPAN⁴

STUDY

Panagiotakos DB, *et al.* (2010)⁵

FINDINGS

In a cross-sectional survey that enrolled over 3,000 apparently health adults, an inverse association was found between dairy products consumption and levels of various markers of chronic inflammation.

Labonté MÈ, *et al.* (2014)⁶

In a multicenter randomized crossover study of 112 adult men and women with high-sensitivity C-reactive protein (hs-CRP), short-term consumption of both low- and high-fat dairy products as part of a healthy diet had no adverse effects on markers of chronic inflammation.

PROACTIVE INJURY PREVENTION: THE BENEFITS OF DAIRY²

1. A calcium, vitamin D and protein-rich diet that includes dairy can strengthen muscle and bone.
2. The unique nutrient package that dairy can provide for recovery may be difficult to replace by other foods and beverages.
3. Going dairy-free could unintentionally be counter-effective for proactive injury prevention.



STUDIES SHOW...



Drinking all types of milk (i.e., chocolate, whole, low-fat, etc.) achieves the 3 R's of recovery: Refuel, Repair, Rehydrate⁷⁻⁹

Drinking fat-free chocolate milk is shown to have unique benefits on enhancing recovery, including greater muscle protein synthesis and increasing time to exhaustion.

Reinforce with your athletes that a nutrient-dense, balanced diet – that includes dairy products – is prudent to help combat chronic inflammation.⁴

PRE-EXERCISE¹⁰

PROVIDE a combination of foods that are high in carbohydrate (CHO) and moderate in protein. Aim to consume 1–4 g CHO/kg of body weight 1–4 hr. before exercise.

3–4 Hours Before Exercise

TRY: Looking for recipes or foods that are low in fat and fiber, but provide adequate CHO to ensure that fuel targets are met, and to meet goals for gut comfort. Try hydrating with at least 16–20 oz. of fluid.

0–60 Minutes Before Exercise

TRY: Fruit (like apple sauce, or fruit snacks), a small granola bar, pretzels or graham crackers to top off stored CHO levels.



POST-EXERCISE¹⁰

REFUEL muscles with CHO (generally 30 to 60 g CHO/hr. exercise; prolonged events 2.5 hr.+ = up to 90 g CHO/hr. exercise).

REPAIR and rebuild muscle with up to 20–30 g of high-quality protein.

REHYDRATE with fluids and electrolytes lost during exercise (more fluid than was lost [e.g., 1.25 to 1.5 L of fluid for every 1 kg of body weight lost]).

TRY: Looking for recipes made with high-quality protein sources (e.g., milk-based proteins [whole or low-fat milk, yogurt, etc.], lean meats, protein isolate supplements [e.g., whey, casein, soy, and egg]) to support muscle protein synthesis, retention of fat-free mass and recovery of force and dynamic power production.



Help give your athletes a properly fueled nutritional edge with whole grains, healthy fats, lean protein, fruits, veggies and fluid. Visit realcaliforniamilk.com for recipes and more to help inform the care of your athletes. Real California milk, yogurt, cheese, and cottage cheese products are made with milk produced by California's dairy farm families using the nation's leading sustainability practices.

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TIPS AND RECIPES FROM SPORTS PERFORMANCE PROFESSIONALS

JORDAN MAZUR, MS, RD

COORDINATOR OF PERFORMANCE NUTRITION
SAN FRANCISCO 49ERS



1. NIGHTTIME FEEDING

"Let your athletes know that their muscles are rebuilt and repaired even while they sleep. Research has shown that consuming protein before bed can help maximize muscle gains and repair.¹¹ Leucine is an amino acid that initiates the protein synthesis pathway and dairy products are a great source of both protein and leucine. Consuming whey or casein protein before bed can help this process. All dairy products, including cottage cheese, provide a combination of whey and casein protein to support muscle gains during sleep."

2. MILK AS A "NUTRIENT PACKAGE"

"A single glass of low-fat or whole milk can be considered a 'nutrient package' for your athletes, meaning it's full of essential nutrients to support their performance and recovery at an affordable cost. One glass of milk provides 3 out of the 4 nutrients that are under-consumed by the majority of Americans and many athletes: calcium, vitamin D, and potassium.¹² Additionally, a single 8 oz. glass of low-fat milk provides other essential nutrients like phosphorus, magnesium, vitamin B12, zinc, and protein that are critical for the overall health of your athletes. Milk truly is nature's sports drink."

3. WHAT IS LACTOSE AND CAN YOUR ATHLETES STILL ENJOY DAIRY PRODUCTS?

"Lactose is a naturally occurring sugar found in milk that can be difficult for some people to digest. That said, there are misperceptions about going dairy-free, so athletes who suspect an intolerance should work with a sports dietitian and have testing by a specialist physician to confirm. Being flexible with food and beverage choices can help manage lactose intolerance, while helping to provide the nutrients that active bodies need. Low- to no-lactose dairy products, like hard cheeses, are easy alternatives that allow your athletes to get the benefits of dairy."

"Nutrition is very important in the prevention of injuries as it has a direct effect on the immune system and recovery process. For the best results, Athletic Trainers need to educate their athletes on the importance of nutrition, then assist during the process. Work with a sports dietitian, if available."

"Nutrition is also often overlooked during the treatment and rehabilitation process, but is vital for athletes to improve and heal. Prior to treatment, set your athletes up with an eating plan. At the end, put on their treatment sheet that they will consume a post-workout recovery shake. Adding milk or yogurt to the shake can kick-start the recovery process by providing carbohydrates, protein and fluids."

DUSTIN LITTLE, ATC, PT, DPT, CSCS

HEAD ATHLETIC TRAINER
SAN FRANCISCO 49ERS



Putting Research Into Practice:

EASY RECIPES FOR ATHLETES • DEVELOPED BY JORDAN MAZUR, MS, RD

PROTEIN PANCAKES

These fluffy pancakes are simple and easy to make, plus they're full of protein for a power breakfast or even a post-workout treat.

Prep Time: 15 minutes
Cook Time: 15 minutes

Ingredients:

- 1 cup Real California low-fat or 2% small curd cottage cheese
- 6 large egg whites
- 6 tablespoons almond flour or coconut flour
- 1 scoop or 2 tablespoons vanilla-flavored whey protein powder
- 1 teaspoon baking powder
- 1 teaspoon ground cinnamon
- 1 teaspoon vanilla extract
- ½ cup Real California plain or vanilla low-fat yogurt
- 1 cup raspberries, blueberries, blackberries, strawberries (hulled and quartered or sliced), or a combination

Instructions:

In a medium bowl using a hand mixer or in the jar of a blender, combine cottage cheese, egg whites, flour, protein powder, baking powder, cinnamon, and vanilla and mix on low speed just until smooth.

Coat a nonstick griddle or large nonstick skillet with nonstick cooking spray and place it over medium heat. Working in batches, add 3 to 4 tablespoons batter per pancake to the griddle or skillet and cook until puffy and slightly set, 2 to 3 minutes. Turn and cook until golden brown, 2 to 3 minutes. Repeat with remaining batter, respraying the griddle or skillet as necessary.

Serve pancakes topped with yogurt and berries. Makes 8 to 10 pancakes.

Note: Instead of yogurt and berries, try serving the pancakes with butter, granola, syrup, or other favorite toppings.



WATERMELON FREEZE

This easy and delicious treat is great for a hot summer day or post-workout recovery. Watermelon is a good source of hydration and citrulline, and provides some electrolytes for athletes.

Prep Time: 20 minutes, plus time for watermelon to freeze

Ingredients:

- 1 7- to 8-pound seedless watermelon, rind removed, cut into rough 1-inch chunks (about 8 cups)
- ½ cup Real California low-fat milk
- ½ cup Real California plain low-fat yogurt
- 1 teaspoon fresh lime juice
- 4 to 5 fresh mint leaves (optional)
- 1 to 2 teaspoons honey or simple syrup (optional)

Instructions:

Arrange watermelon in a single layer on a large rimmed baking sheet and freeze.

In the jar of a blender or the bowl of a food processor, combine frozen watermelon, milk, yogurt, lime juice, and mint and honey, if using. Blend on low or puree until smooth.

Serve as is or return mixture to the freezer for a firmer consistency. Makes about 12 ½-cup servings.



Visit www.realcaliforniamilk.com/recipes for more performance and recovery recipes.

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