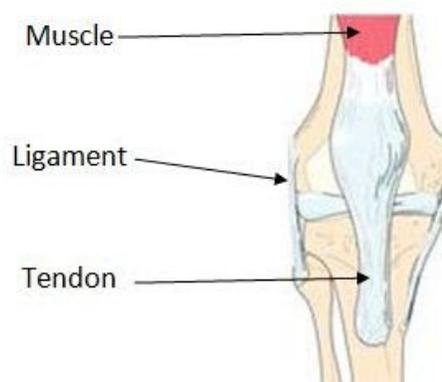


# NUTRIENTS FOR SOFT TISSUE RECOVERY

## Injury Description

Injuries cause damage to soft tissues like tendons, ligaments and muscles. Tendons and ligaments provide structural stability to joints and serve as the connections between muscles, cartilage, and bones. Injuries to soft tissues can be acute (from sudden trauma) or chronic (from overuse).



Soft tissues in the knee

## Nutrients Important for Healing

**Nitric Oxide** (for tendon/ligaments) helps stimulate collagen synthesis to speed healing and strengthen damaged tendons/ligaments resulting from chronic overuse injuries. Applied topically via patch at 1.25 mg/day. This does not translate to food equivalents and cannot be reasonably obtained from food sources.

**Vitamin C & Gelatin** (for tendons/ligaments) promote greater collagen synthesis following tissue injury. Consume 10-15 g of gelatin and 50 mg vitamin C 60 minutes prior to activity. See next page for gummy recipe.

**Leucine** (for muscle) is an amino acid that stimulates muscle protein synthesis and reduces breakdown after exercise-induced stress. Leucine combined with other essential amino acids is more effective than an isolated form. Aim for 2-3 g/per serving.

## Strategies for Optimal Recovery

- 1. Consult a sports medicine team** to create a recovery plan. A sport dietitian will help develop strategies to address potential side effects of medication use such as nausea, constipation, diarrhea and reduced appetite.
- 2. Modify intake of calories** post-injury to be adequate for healing and adjusted for reduced physical activity/mobility.
- 3. Consume adequate protein** to help repair tissue and minimize muscle loss.
- 4. Hydrate** to facilitate nutrient delivery to injured areas.

# NUTRIENTS FOR SOFT TISSUE RECOVERY



## Meals and Snacks to Aid Healing

- Greek yogurt with mango, granola, walnuts
- Cottage cheese with cantaloupe and toast
- Smoothie: frozen berries, yogurt, and milk
- Fortified breakfast cereal with milk and eggs
- Grilled salmon with beets and sweet potato
- Tofu, bell pepper, celery stir fry with brown rice
- Arugula and radish salad with steak and quinoa
- Pork chops with spinach and farro salad
- Orange slices and string cheese
- Celery with peanut butter and raisins



## Food Sources of Key Nutrients

Nutrient	Sources	Important for tendon/ligament	Important for muscle	*Important for wound healing
Nitric oxide	beets, spinach, arugula, celery radishes, swiss chard	×		
Leucine	chicken, beef, fish, pork, egg, dairy, soy	×	×	
HMB	leucine-rich foods such as whey protein, chicken, beef, fish, pork, egg, dairy, soy		×	
CoQ10	beef, chicken, trout, soybean oil, olive oil, peanuts, sesame seeds		×	
Creatine	wild game, red meat poultry, fish		×	
Glutamine	beef, chicken, fish, beans, dairy, cabbage, beets, legumes	×		×
Arginine	shrimp, white meat turkey, frozen spinach			×
Vitamin A	sweet potato, carrot, mango, red pepper, cantaloupe, egg yolk, dairy, green vegetables, fish	×		×
Vitamin C	citrus fruit, pineapple, bell peppers, kiwi, broccoli, berries, baked potato, tomato, leafy greens	×		×
Omega 3 fatty acids	fatty fish (salmon, mackerel, sardines, tuna, trout), flaxseed, walnuts, canola oil		×	×
Zinc	oysters, beef, fortified cereals, pork, beans, dark meat chicken, yogurt, cashews, chickpeas		×	×

*\*Utilize these nutrients if healing from a surgical intervention to repair a soft tissue injury.*

### Athlete Recommendations:

**Gelatin Gummy Recipe** (makes 6 servings)  
 12 Knox gelatin packs or ~ 1/2 cup, 84g gelatin  
 1/8 tsp vitamin C powder (300-500 mg)  
 1 tsp crystal light powder  
 1 cup juice or fruit punch

Per serve: 14g gelatin, ~50 mg vitamin C, 7 g pro, 4 g carb