

## 4,500-Calorie Food Plan for a 5'11" (180 cm), 160 lb (73kg) 24-Year-Old Male Skater

**Energy-balance graph**



**Energy substrate distribution**

Total calories: 4,475  
 Carbohydrate %: 64  
 Protein %: 17  
 Fat %: 19

Hours anabolic (calories > 0) = 13; hours catabolic (calories < 0) = 11; anabolic : catabolic ratio = 1.18

Hour	Description	Food	Amount	Calories	Activity
5-6 a.m.	Wake-up and pre skate nourishment	Bread, whole wheat, toasted Jam Apple juice	2 slices 1 tbsp 12 oz	153 56 171	Should be consumed as soon as possible after waking to ensure time for gastric emptying before the morning run
6-7 a.m.	Morning training	Sports beverage	16 oz (480 ml)	125	A relatively intense run lasting the entire hour
8-9 a.m.	Cool-down followed by breakfast	Granola cereal, whole grain Milk, 1% fat English muffin, toasted Blueberries Orange juice	1 cup 8 oz 1/2 muffin 1 cup 8 oz	443 102 78 84 110	Breakfast should include plenty of fluids and should be high in carbohydrate
9 a.m.-12 p.m.	Normal daily activities	Sports beverage	24 oz	189	Beverage should be readily available to allow for sips at regular intervals to help athlete return to hydrated state, recover glycogen, and maintain blood sugar
12-1 p.m.	Lunch	Roast beef sandwich: Roast beef American cheese, regular Lettuce Mayonnaise  Water	1 sandwich 5 oz 1 oz 1 leaf 1/2 tbsp  As desired	477 316 106 4 51  0	Lunch during early part of the hour; liberal amounts of water should be consumed with foods
1-2 p.m.	Weights	Sports beverage	16 oz	127	Weightlifting for 30 min during last half of hour (moderate weights with many repetitions)
2-4 p.m.	Cool-down and stretching, followed by normal activities	Apple, with skin Wheat crackers Cheese, mozzarella, part-skim milk Water	1 medium 1 oz (30 g) 2 oz (60 g) As desired	65 134 142 0	Mid-afternoon snack is important for maintaining energy balance and blood sugar
4-5 p.m.	Afternoon training	Sports beverage	16 oz	125	Intense 1 hr run, with sipping on sports beverage that mirrors actual drinking frequency at competition

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5-6 p.m.	Post-training cool-down and replenishment	Chocolate milk	16 oz	315	A protein and carbohydrate beverage after a workout reduces muscle soreness and helps replenish glycogen stores
6-7 p.m.	Household activities and snack	Saltine crackers Milk, 1% fat	9 crackers 12 oz	177 154	Frequent snacking is necessary to supply sufficient energy to maintain energy balance
7-10 p.m.	Dinner and household activities	Chicken, roasted, light meat Potato, baked Sour cream Broccoli, boiled	6 oz 1 medium 1 tbsp 1 cup	363 145 23 84	Hearty dinner to satisfy nutrient and energy needs should be consumed between 7 and 8 p.m.
10-11 p.m.	Snack and bedtime	Grapes, fresh	1.5 cups	156	Evening snack before bedtime is important to prevent low blood sugar during the night and maintain energy balance

### Meal totals for selected nutrients

<tb>Total kcal:	4,475	Iron (mg):	24.64	Vit C (mg):	491	Vit B <sub>12</sub> (mcg):	7.65
Carbohydrate (g):	655	Calcium (mg):	2,403	Vit B <sub>1</sub> (mg):	2.72	Folic acid (DFE):	747.8
Protein (g):	194	Zinc (mg):	19.0	Vit B <sub>2</sub> (mg):	4.25	Vit A (RAE):	1,130
Fat (g):	77	Magnesium (mg):	513.3	Niacin (mg):	52.01	Vit D (IU):	317
Sodium (mg):	4,948	Potassium (mg):	6,581	Vit B <sub>6</sub> (mg):	4.3	Vit E (mg):	6.6

*Note:* This competitive skater has two intense training sessions plus does weights between the two runs. This level of activity accounts for the high-energy need (~4,500 calories), which can be provided only through frequent meals and snacks and nearly constant sipping on sports beverages. The athlete wishes to enlarge his muscle mass to improve the end-of-race sprints, and his anabolic-to-catabolic ratio of >1 suggests he should be able to achieve this with this eating and exercise pattern.

**Source:** Energy balance and nutrient intake values were derived using NutriTiming.com.