

Volleyball Nutrition—Serving the Ideal diet for Training, Competition, and Recovery

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Volleyball 101

Volleyball is an explosive, quick power driven sport. What propels the ball over the net is energy, primarily *anaerobic* muscle energy, for serving, spiking, blocking, digging, and rolling. Long rallies and training sessions are fueled by a combination of anaerobic glycolysis and aerobic metabolism—a combination of fuels from the breakdown of muscle sugars called glycogen and a balanced diet containing carbohydrates, protein and fats. The key to peak performance volleyball nutrition is pre game fuel, intermatch replenishment, and consistent glycogen building—keeping the ball airborne means keeping the players fed and hydrated 24/7. The estimated calorie expenditure per minute for noncompetitive and competitive play is estimated to be:

Level of play	weight (pounds) and calories used per minute of play				
	117	123	130	143	150
Competitive	7.8	8.2	8.7	9.5	10
Noncompetitive	2.7	2.8	3.0	3.3	3.4

Food Energy

Food energy, calories from foods and fluids are not uniquely different from other power team sports. A high carbohydrate diet of approximately 50-65% of total calories fuels both anaerobic and aerobic energy needs. The type of high carbohydrate foods that meet these needs include fruits, veggies, whole grain cereals, breads, and pastas, and low-fat dairy. Ten to twenty five (10-25%) of calories from protein provides additional power strength for muscle repair. Main meal foods such as lean meats, chicken, turkey, fish, nonfat cheeses, dairy and egg whites or egg beaters or protein fortified smoothies or trail mixes can meet these daily needs. Less than 30% from healthy fats are recommend for managing ideal competitive weights and can be met through “seasonings” or snacks of nuts, nut butters, fish oils, avocado, soy, and vegetable oil based salad dressings.

While carbohydrates are key to performance, special attention should be given to mineral rich carb choices to manage electrolyte losses from sweating. Replacement of sodium, potassium with sport drinks, lightly salted foods such as baked chips or pretzels, calcium fortification with low

fat dairy snacks such as nonfat milk or yogurt and iron rich foods such as lean meats, poultry, fortified cereals, beans, or peas can assist with energy utilization, efficient muscle contraction and prevention of hyponatremia (low blood sodium) and hypokalemia (low blood potassium) which can impair performance. In addition, antioxidants—vitamins E and C from a combination of nut and fruit snacks have been shown to assist in muscle repair and recovery in competitive athletes.

Volleyball nutrition is not complete without addressing fluid intake. The typical volleyball player may lose up to one or more pounds during practice or the equivalent of 16 oz of fluid. Therefore, a minimum of 2 cups of fluid prior to playing, 4-6 oz of fluid every 15 minutes of play and an additional 2 cups of fluid after practice should be consumed to management symptoms of dehydration. Athletes training and residing in warmer climates need to ensure round-the-clock hydration in order to prevent the cumulative effects of dehydration on training and performance.

Taking Volleyball Nutrition on the Road

The challenge to peak performance during competitive match means getting enough nutritious food while traveling. Players should prepare by taking a stash of sport or breakfast bars, shakes, sport drinks, crackers, trail mix, healthy soups like vegetable, bean, noodle or minestrone, small cereal boxes, fresh fruit, and mini bagels on the bus or plane. Pregame meals should be light in fat, moderate in protein and carbohydrate based. Pasta with grilled chicken or shrimp, lean meat with baked potato or a lean meat, mayo-free 6-inch whole wheat sub will also work 2-3 hours before game time. If extra fuel is needed before play, a cup or two of sport drink, water with ½ a sport bar 1 hour before play may help the hungry player however whatever foods are consumed before competitive play should be tested beforehand in practice.

A Day in the Food Life for Volleyball Players:

Morning

Citrus fruit or juice or cup of strawberries or blueberries

Egg white omelet with green veggies, tomato and nonfat cheese

1 small bowl oatmeal, whole grain cereal or slice of whole grain bread

2 tsp nut butter

Water

Am snack

Low fat breakfast bar or sport bar

Water or sugar free beverage

Afternoon

Turkey wrap or sandwich with low fat whole wheat tortilla or bread

3-4 oz turkey

lettuce/tomato

2 tsp mayo

1 small bag baked chips

1 apple or pear

Water or sugar free beverage

PM snack

Fresh fruit smoothie with low fat yogurt

Or low fat yogurt with fresh fruit and granola sprinkle

Water or sugar free beverage

Evening

Grilled chicken salad with whole grain roll or

Fresh grilled fish with veggies and baked potato or

Sushi with soup and salad or

Pasta with veggies and lite red sauce

Water or sugar free beverage

Evening snack

Frozen low fat yogurt with fresh fruit topping or air blown popcorn with a parmesan sprinkle