



# **Sport Nutrition for Diving**

## **A Practical Guide for Athletes and Coaches**



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## Introduction - Key Nutrition Consideration for Divers

*Diving is an exciting, beautiful and technical sport that demands perfection from athletes. Attention to nutrition is a key aspect of ensuring a divers body can endure the demands of training and perform at 100% of their physical potential. A diver's nutrition program must focus on the following areas, which will be covered in this guide:*

- A. A healthy diet aimed at supporting an energized, lean and strong physique.** Quality nutrition helps to support training and optimal body composition.
- **Page 3** - Breaking Down a Healthy Diet for Divers
  - **Page 4** - Tips for Weight Management
  - **Page 5** - A Word About Body Composition
- B. A nutrition and hydration plan for on-deck training and competition.** Divers need a training and competition nutrition plan that supports sustained energy and contains foods that are easy to digest and feel good in the gut.
- **Page 6** - On-Deck Nutrition & Hydration Strategies for Training & Competition
  - **Page 7** - Sample Nutrition Plan - Diving Competition Day
- C. Additional nutrition information.** In the world of nutrition, there is an overwhelming amount of information. Refer to these references as a quick link to credible answers and resources.
- **Page 8** – Nutrition FAQ's
  - **Page 9** – References and Resources
  - **Page 10** – Grocery List for Athletes
  - **Page 11** – Travel Nutrition Tips for Athletes

## Breaking Down a Healthy Diet for Divers

### 7 Foundations of a Healthy Diet

1. Healthy nutrition starts with planning. Mentally or physically map out meals and be sure this food is available.
2. Eat at regular intervals in the day. No longer than 4 hours without food.
3. Choose whole foods vs processed foods for the majority of your diet (90% of the time) (see ideas below)
4. Balance meals and snacks with carbs, protein, antioxidants and healthy fats (see healthy plate below)
5. A healthy relationship with food and your body. Eat for health/performance, not boredom, guilt or stress.
6. Choose liquids with minimal sugar like water, milk/soy/almond beverage, tea. Avoid juice, soda, energy drinks.
7. Enjoy “treats” in moderation – they taste better this way!

### Whole Food Based Meal and Snack Ideas

#### Best Breakfasts

- Oatmeal, 1-2 eggs, handful of almonds
- Shake = 2 cups skim milk/soy/almond, 1 banana, 1 Tbsp natural peanut butter
- Mix - 6oz Greek yogurt + 1/3 cup whole granola + 1-2 Tsp dried cranberries
- 1-2 sl. whole grain toast with natural peanut butter + 1 cup skim chocolate milk/soy
- 1-2 cups high pro cereal (eg. Kashi) + 1 cup skim milk

#### Best Snacks

- 6oz greek style yogurt + small fruit
- ½ scoop whey + 1.5 cups skim milk/soy
- 1 cup of vegetable sticks + 2 Tsp hummus
- ½ cup skim cottage cheese + 1 fruit
- Natural nutrition bars (look at ingred. list)

#### Best Lunch's/Dinners

- Chicken breast salad w/ low fat dressing + fruit
- Tuna salad mixed with low fat ranch salad dressing on wheat pita + 1 cup celery sticks
- 1-2 cups vegetable soup + turkey sandwich on whole grain bread
- Tofu, chicken or beef stir fry with veggies, brown rice
- Salmon, trout or whitefish + couscous + steamed vegetables
- 1-2 cups of vegetarian, turkey or lean beef chili + 1 cup carrots
- Lean beef steak + baked potato/sweet potato + side spinach salads.

### Healthy Plate for Weight Management



Healthy Plate Graphic Created by: University of Colorado at Colorado Springs

# Tips for Weight Management

## 4 Foundations of Weight Management Success

1. **Work individually** with a professional! This will be your fastest road to sustainable change! Visit <http://www.scandpg.org/search-rd/> to search for a Sport Dietitian in your local area.
2. **Set realistic goals and timeframes** for your weight loss/gain. True change takes consistent approach for at least 6-8 weeks + consistent behavior at least 5/7 days of the week.
3. **Monitor progress** with objective measures NOT the mirror – use weight (morning before food), measurements, body composition assessment etc.
4. **Plan meals and snacks** so your food environment is set up to meet your goals.

### General Weight Loss Tips

***Fat loss success = less in + more out + consistency + motivation***

- ✓ Limit fast food or restaurant food to 2 times a month.
- ✓ Eat according to your energy level, less on less active days, more on more active days.
- ✓ Eat your biggest meals earlier in the day to support energy for training and taper portions as the day goes on, with dinner being your smallest meal.
- ✓ Include lean protein (meat, fish, milk) at each meal for appetite regulation and muscle maintenance.
- ✓ Find extra ways to burn calories:
  - Add extra low intensity cardio sessions (bike, walk etc) 30-45 minutes, 4 times a week.
  - Bike or walk instead of driving, take the stairs!
  - Wear a pedometer (step counter) and aim to walk 10,000 steps outside of training.

### General Weight Gain Tips

***Weight gain success = more in + less out + consistency + motivation***

- ✓ Aim to add an additional 500 calories in your day. Easy way to think about it is to just eat a “second lunch/dinner”. Eg. 2 cups chili; Turkey bagel sandwich + milk, Peanut butter/jam sandwiches + fruit
- ✓ Eat every 2 hours. Before bed or after training are critical times to get calories in!
- ✓ Add extra calories! Add peanut butter to fruit, nuts in yogurt, use full fat milk, add olive oil based dressings, drink 100% fruit juice.
- ✓ Drink extra calories if eating them is too much of a burden. Try this easy weight gain shake!

#### **2-day Easy Weight Gain Shake**

Prepare shake in a blender, refrigerate & drink ½ every **other day before bed.**

- 4 cups chocolate milk
- 2.5 cups frozen yogurt vanilla
- 1.5 cup of fruit (eg. strawberries frozen or fresh)
- 2 scoops of protein powder (approved by sport dietitian)
- 2 large bananas
- 6 tablespoons chocolate syrup

*2020Cals, 25g Fat, 369g Carbs, 111g Pro*



*Photo credit - US Olympic Committee*

## A Word about Body Composition

It is important for coaches and athletes to appreciate that every diver's body is different with individual performance needs. Many divers want to know what a target body fat range should be. In reality, no two bodies are alike and one level of body fat may not be sustainable for another diver.

### *Optimal body composition is achieved when:*

- ✓ Athlete follows a healthy, responsible and consistent nutrition plan which provides enough energy for consistent performance at varied training loads
- ✓ Athlete can maintain health, avoiding frequent injuries and illness in the season
- ✓ Athlete can maintain an energy balance to support a regular menstrual cycle



### *About body composition testing:*

- ❖ Avoid testing body composition just for the sake of the numbers; it can cause more undue stress than needed!
- ❖ Only use body composition testing in conjunction with a nutrition plan (weight loss/gain) as a way to track your progress with it.
- ❖ There are different ways to measure body composition (skinfolds, bodpod, dexa scan etc). Athletes should stick with one method, one measurer and someone trained in that area.
- ❖ Body composition will always shift a little up and down due to measurement error with equipment/tester as well as phase of training. Usually it's only a true change when its more or less than ~ 3% from your last measurement.

### **Body Image Issues in Diving**

Many divers struggle with body image issues and feeling uncomfortable with the way they look. Sometimes this can cause a diver to feel depressed, anxious and insecure, causing them to adopt unhealthy self-thoughts, food and exercise behaviors.

If an athlete feels like they are losing control of their emotions or behaviors when it comes to body image, food and exercise, they need to:

**REACH OUT TO SOMEONE FOR HELP RIGHT AWAY!**

**Professionals that can help include: sport psychologist, athletic or physical therapist, medical doctor, sport dietitian or other trusted sport health professionals.**

## On-Deck Nutrition & Hydration Strategies for Training & Competition

Common Fueling Mistakes	How this Impacts Performance	How to Correct
<p><b>UNDERFUELING</b> Not eating very much before practice/competition. Usually due to not wanting to feel full (aerial moves &amp; nerves), and wanting to look slim in swimsuit.</p>	<ul style="list-style-type: none"> <li>• Reduced energy over the training or competition session</li> <li>• Only perform at 60-75% of physical and mental potential</li> <li>• Increased risk for mistakes &amp; therefore injury</li> </ul>	<ul style="list-style-type: none"> <li>• See Top 5 Pre-Diving &amp; On Deck Fuels below</li> <li>• Aim for easy to digest, low fat foods with a combination of carbs + protein</li> </ul>
<p><b>OVER EATING POST TRAINING</b> Not eating or drinking enough before activity results in low blood sugar &amp; hunger, leading to the possibility of over eating afterwards.</p>	<ul style="list-style-type: none"> <li>• Overeating can result in poor body weight management.</li> <li>• Fueling timing is wrong, you need the energy before training. This can impact performance.</li> </ul>	<ul style="list-style-type: none"> <li>• Have a small amount of sugar &amp; balanced recovery snack to sustain energy &amp; prevent overeating. See On Deck Fuels below.</li> </ul>
<p><b>DEHYDRATION</b> Many athletes arrive to training &amp; competition in a dehydrated state, usually due to poor planning. Divers tend to drink less due to not feeling "warm" b/c of the cooling effect of water and drafty climate on deck.</p>	<ul style="list-style-type: none"> <li>• Lack of concentration</li> <li>• Reduction in skill ability</li> <li>• Early fatigue</li> <li>• High perceived exertion in training</li> <li>• Delayed recovery</li> <li>• Muscle cramps</li> </ul>	<ul style="list-style-type: none"> <li>• See Hydration Tips for Divers below.</li> <li>• Visit Team USA Sport Nutrition's webpage to download a great Hydration factsheet!</li> </ul>

**Top 5 Pre & Post Diving Snacks**

1. ½-1 cup rice cereal/oatmeal + skim/soy milk
2. Banana or apple + 1Tbsp peanut butter
3. 6oz Greek yogurt
4. Fruit + protein (milk, whey) smoothie
5. Sport nutrition bar

**Top 5 On Deck Fuels**

1. Water + diluted sport drink
2. Banana
3. ½ cup dried fruit
4. Applesauce (in squeezable tube)
5. 1 package sport gels, bites or blocks.

**Hydration Tips for Divers**

- ❖ Aim for a baseline of hydration of 8-10 cups per day OUTSIDE of training.
- ❖ Water, diluted juice, tea, milk all count as fluids
- ❖ Listen to your thirst - It's there to tell you when you are dehydrated!
- ❖ Pre-hydrate before training with 6-10oz of fluid 1-2 hours before hand.
- ❖ Aim for a hydrated urine color before diving (#1 or #2) on the urine chart.
- ❖ Bring a water bottle on deck filled with water, sport drink or diluted sport drink, place it somewhere visible, and aim for 3-4 gulps every 3-4 dives (~20 mins).
- ❖ Hydrate after training with at least 8-16oz of fluids and use urine color as a guide.
- ❖ Some divers could weigh themselves (nude & dry) before & after training, replacing each pound lost with 10-16oz of fluid. *Only choose this method if weighing yourself will not cause emotional stress!*

Urine Color	#
	1
	2
	3
	4
	5



## Sample Nutrition Plan - Diving Competition Day

Time	Event	What to Eat
7:00am-7:30am	Breakfast ideally 2-4 hours before	Aim for easy to digest, low fat foods & combination of carbs + protein for a sustained energy release (See <b>Page 3</b> ) Eg. 1-2 packets oatmeal + Greek yogurt Check urine color
7:30am-9:00am		Frequent sips of water Check urine color. Should be pale yellow (#1/#2 on urine chart)
9:00am-12:00pm	Warm up & diving preliminaries	On Deck Nutrition Fuels (See list on <b>Page 6</b> ). Eg. Applesauce Aim for a few small bites every hour Frequent sips of water &/or diluted sport drink
12:00pm-1:30pm	Lunch ideally 2-4 hours before next session	Aim for easy to digest, low fat foods & combination of carbs + protein! <ul style="list-style-type: none"> <li>• Broth or vegetable based soup + ½-1 turkey sandwich/wrap</li> <li>• Chicken salad with fruit</li> <li>• Meal replacement smoothie</li> <li>• Fish or chicken + Steamed rice + carrots</li> <li>• Minimum 8-16oz water + Check urine color</li> </ul>
1:30pm-4:00pm		Frequent sips of water Check urine color! Should be pale yellow (#1/#2 on urine chart)
4:00pm-6:00pm	Pre diving snack ideally 1-2 hours before	Aim for easy to digest, low fat foods & combination of carbs + protein. See Pre-Diving Snacks on <b>Page 6</b> . Eg. Banana or apple + 1 Tbsp peanut butter Frequent sips of water Check urine color. Should be pale yellow (#1/#2 on urine chart)
6:00pm-9:00pm	Warm up & finals	On Deck Nutrition Fuels (See list on <b>Page 6</b> ). Eg. Banana Aim for a few small bites every hour. Frequent sips of water &/or diluted sport drink
9:00pm	Dinner	Aim to follow the healthy plate model for this meal on <b>Page 3</b> (veggies, lean protein + carb). Frequent sips of water at dinner



## **Nutrition FAQs For Divers**

### ***Do I need to take a dietary supplement?***

Athletes that have certain food allergies, intolerances or a clinical nutritional deficiency may need to take additional dietary supplements to support their health. Taking dietary supplements without a proper nutrition or medical assessment is not recommended. Athletes with high training volumes should have blood work and a complete nutrition assessment once a year. From this information, recommendations can be made. Beware of many of the claims made by supplement companies and representatives– if it sounds too good to be true, it often is! In addition, athletes that are part of the drug testing pool are responsible for whatever they put in their bodies, so they need to be extra cautious with their supplement use. See the link to USADA in the reference section for more information.

### ***In addition to nutrition and hydration, what are some other ways to ensure proper recovery?***

Recovery is both a physical and mental process. Talk to a local sport health professional about how to best incorporate recovery habits into your weekly training. Massage, corrective exercises (to prevent injury), contrast and Epsom salt baths, compression garments and rolling exercises can help with physical recovery. In addition, sleep is an essential component of ensuring recovery is optimized. A minimum of 8 hours per night is recommended. Athletes with sleeping issues should reach out for help with this (MD or psychologist). Remember that alcohol increases recovery time!

### ***What are some of the signs of overtraining in athletes?***

Some initial signs of overtraining include significant fatigue, progressive loss of performance, moodiness, disturbed sleep patterns, decreased motivation to train, increased incidence of sickness reduction or gain in appetite, elevated resting heart rate and abnormal blood work results. It's important that coaches and athletes have a training cycle that allows time for rest and recovery as well as intense training. Talk to your doctor if you suspect overtraining is an issue.

### ***Are there any special nutrition needs for young divers (under 18)?***

Yes. Young athletes are faced with the nutritional challenge of fueling for both growth and development as well as training. Athletes should be monitored by their sport MD and RD to ensure their needs for calcium/vitamin D (bone growth), iron and protein are being addressed. In addition, athletes should be growing and developing in a normal pattern. This is a sign that nutrition is optimized.

### ***Where can I go for more nutrition information and help?***

Check out the references used for this guide and additional sources for your information on Page 9!



## Resources and References

### US and International Sport Nutrition Resources

United States Olympic Committee Sport Nutrition – Resources & Factsheets

<http://www.teamusa.org/About-the-USOC/Sport-Performance/Nutrition/Resources-and-Fact-Sheets.aspx>

American Academy of Nutrition and Dietetics: Sport Cardiovascular and Wellness Network

[www.scandpg.org/](http://www.scandpg.org/)

Nancy Clarks Nutrition Recipes for Athletes (Book or App options available)

[http://www.humankinetics.com/products/all-products/Nancy-Clarks-Recipes-for-Athletes?associate=6857&hq\\_e=el&hq\\_m=2245053&hq\\_l=7&hq\\_v=d950a71e23](http://www.humankinetics.com/products/all-products/Nancy-Clarks-Recipes-for-Athletes?associate=6857&hq_e=el&hq_m=2245053&hq_l=7&hq_v=d950a71e23)

Sport Nutrition Advisory Committee – Free Sport Nutrition Factsheets

<http://www.coach.ca/sport-nutrition-tips-p138189>

Sports Dietitians of Australia – Free Sport Nutrition Factsheets

<http://www.sportsdietitians.com.au/factsheets/>

US Anti-Doping Agency – Athlete Resources

<http://www.usada.org/resources>

US Department of Agriculture – Food and Nutrition Resources

[http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=missionarea\\_FNC.xml](http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=missionarea_FNC.xml)

<http://fnic.nal.usda.gov/lifecycle-nutrition/fitness-and-sports-nutrition>

<http://www.nutrition.gov/smart-nutrition-101/healthy-eating/eating-exercise-and-sports>

### Scientific References

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2. Petrie, H.J., Stover, E.A., & Horswill, C.A. (2004). Nutritional concerns for the child and adolescent competitor. *Nutrition*. (Burbank, Los Angeles County, Calif.), 20(7-8), 620–631.
3. Rodriguez, N.R., DiMarco, N.M., & Langley, S. (2009). Nutrition and athletic performance. Joint position statement of ACSM/ADA/DC. *Medicine and Science in Sports and Exercise*, 41(3), 709–731.
4. Sawka, M., Burke, L., Eichner, E., Maughan, R., Montain, S., and Stachenfeld, N. American College of Sports Medicine. 2007. American College of Sports Medicine Position Stand. Exercise and fluid replacement. *Med. Sci. Sports Exerc.* 39(2), 377–390.
5. Burke, L., & Deakin, V. (2007). *Clinical Sport Nutrition*. Human Kinetics: Belconnen, Australia.



# Athlete Grocery Shopping List

Instructions – bring this shopping list with you to the grocery store. This should ensure you have the essentials to make your own meals and snacks for the week.

## Bread Aisle

**Bread Tip:** Read label for "whole wheat" or "whole sprouted wheat" & > 3g fibre per slice. Pick 2 options for fresh use and then 2 for the freezer.

- bread
- bagels
- English muffins.
- tortillas

## Fresh Fruit and Veggie Aisle

**Fruits Tip:** Keep fruit on the counter for a reminder or visible location in fridge. Just wash and eat! Pick 2-4 fruits you like.

- Oranges
- mango
- berries
- nectarines
- apples
- pears

**Fresh Vegetables Tip:** Take into account any frozen or canned products you have stocked. Pick 2-3 veggies you like. 1 bag of onions & potatoes.

- celery
- snow
- peas
- lettuce
- mushrooms
- sweet peppers
- onions
- broccoli
- carrots
- Potatoes (sweet or white)

## Dairy, Eggs & Deli Counter

**Dairy Tip:** Choose 1% or skim milk, look at the % M.F./B.F. (milk or butter fat) on labels. Buy eggs high in omega 3 fats

- dairy or soy milk
- Cheese of choice
- Organic free range eggs
- 1% cottage cheese
- Greek Yogurt
- light sour cream

**Fats Tip:** pick what you like to cook with or have on bread

- Butter
- 

**Deli Meats (pick 100-200g of deli meat you like – organic and nitrate free is best)**

- roast chicken
- roast turkey
- ham slices

## Meat & Fish Aisle

**Meat & Alternates Tip:** Buy small portions or value-packs and separate into Ziploc freezer bags as smaller portions. One serving = 50-100 grams or palm size. Pick options you like.

- Salmon or tuna fillet
- fish (sole, basa, snapper)
- pork chops
- Chicken breast
- pre-cooked shrimp
- Extra lean ground beef.
- lean, round steak

## Condiment Aisles

**Other Foods/Condiments Tip:** Choose low sodium soups and sauces. Choose what you normally use.

- pasta sauce
- Ketchup/Mustard
- salsa
- natural peanut butter or almond butter
- soy sauce
- balsamic vinegar and/or olive oil
- jam, jelly, marmalade, honey, sugar
- dried basil, oregano, cumin, thyme
- pepper, hot sauce

## Cereal and Pasta Aisle

**Cereals Tip:** Read label for < 2g fat, < 10 grams sugar & > 4g fibre per serving. Alternate for breakfast.

- Cold, ready to eat cereal (mini wheats, Alpen, Kashi Go Lean)
- quick rolled oats/plain instant oatmeal

**Grains** Pick 1-2 bags of what you like to eat and you know how to cook.

- Brown rice
- Couscous
- Whole wheat pasta
- Regular pasta is ok if you prefer it.

## Canned Foods Aisles

**Canned Fish & Poultry.** Pick 2-3 cans of 1-2 options you like

- Tuna
- Chicken
- Clams
- shrimp

**Canned Beans, Corn & Lentils** Tip: Rinse beans under water before eating. Pick 2-4 options of what you like.

- baked beans
- black beans, corn
- chili
- kidney beans
- low fat canned soup

**Canned Fruits** Tip: Read label for no added syrup. Choose fruits packed in juice.

- pears, peaches, pineapple, orange sections
- Fruit-to-go or Sun Rype Fruit Source bars

## Snack Food Aisle

**Snack Foods** Tip: Look for a short, easy to read ingredient list. Pick 2-4 snacks that you like.

- Natural popcorn
- Roasted soy nuts
- Baked chips
- Trail mix or dried fruit

## Additional Items

- ✓
- ✓
- ✓
- ✓
- ✓
- ✓

## Travelling for Sport – What can go wrong?



Travel issue	Potential Nutrition and Performance Implications
Food & Water Safety	<ul style="list-style-type: none"> <li>• Foodborne illness = infection, illness, diarrhea</li> <li>• Dehydration and electrolyte imbalance, weight loss</li> </ul>
Long travel (4 + hours w/ time zone changes)	<ul style="list-style-type: none"> <li>• Jet lag, fatigue, loss of appetite, constipation</li> <li>• Dehydration, weight gain/loss</li> <li>• Increased risk for illness</li> </ul>
Climate changes	<ul style="list-style-type: none"> <li>• Altitude: Iron status, CHO intakes/appetite/hydration</li> <li>• Heat/Cold: Hydration/electrolytes</li> <li>• Pollution: oxidative stress</li> </ul>
Athlete meal logistics	<ul style="list-style-type: none"> <li>• Lack of planning, unfamiliar food, food safety issues, access to healthy snacks, limited access to food at competition venue</li> </ul>

### Managing Jet Lag – Key Tips

#### Before Travel:

- Adjust your sleep schedule to the destination time zone a few days before you leave
- Make sure you are well hydrated before you get on the plane
- Purchase compression socks and travel snacks for the plane ride

#### On the Plane:

- Try to sleep only if it is night at your destination or stay awake if it is day (moving around the aircraft can help keep your body alert)
- As soon as you get on the plane change your watch to the time at your destination so that you can begin to adjust your schedule accordingly
- Stay well hydrated by having about a glass of water every hour

#### Upon Arrival:

- Sleeping and eating on your time zone right away, keep hydrating!
- Avoid napping so that you will be tired at bedtime
- Try to expose yourself to natural daylight
- Eat a high carbohydrate meal about 1 hour before bed to induce sleep, avoid caffeine

### Travel Nutrition Shopping Checklist

#### Foods to Include:

- Granola bars – eg. Nature Valley, Kashi
- Sport bars – PR Bars, Cliff, PowerBar Harvest bars
- Fruit leather bars
- Dried fruits – prunes, cranberries, raisins
- Fruit and nut trail mix
- PowerAde Powder
- Peanut butter, Honey, Jam
- Powdered meal supplement – eg. Carnation Instant Breakfast packets and or Boost
- Protein powder – approved by sport dietitian
- Sachets of tuna
- Crackers, tortillas, pretzels

#### Other items:

- Kettle/hot pot
- Re-sealable bags
- Hand sanitizer
- Constipation, anti-diarrhea, anti-histamines, anti-inflammatory meds, multivitamins, vitamin C
- – approved from team doctor