



AIRDRIE PHOENIX SWIM CLUB

PERFORMANCE NUTRITION



APSC PERFORMANCE NUTRITION (1)

PERFORMANCE NUTRITION is an essential part of APSC Elite Swimming Program. It is not the training alone, but the energy requirement to complete the training and the body's adaptive response to it, that increases endurance, strength, and builds muscle. The **3 R's of APSC's Performance Nutrition Guidelines** are **Rehydrate, Refuel and Repair**. Recovery Nutrition helps your body heal and regroup to perform at its best, helping you achieve your **Swimming Goals**.

THINK OF YOUR BODY AS A CAR... the foods and drinks you consume are the fuel.
ELITE ATHLETES are like finely tuned cars that require **HIGH QUALITY FUEL** to achieve **OPTIMAL PERFORMANCE**.

 **REHYDRATE** - In swimming, fatigue is your enemy. The single largest contributor to fatigue when competing is dehydration. Environmental factors contribute to a swimmer's dehydration warm water temperature and warm humid air around the pool can increase the need for fluids. When you're dehydrated, your ability to concentrate is poor, it's harder to pull the water, the precision of your turns suffers, and your risk of injury increases. Failure to replenish fluids before, during and after training can quickly result in sore muscles, fatigue - and under-performance. Complicating matters is the fact that thirst doesn't kick in until well after you've lost a significant amount of fluid. Fortunately, dehydration can be avoided by **sticking to a disciplined hydration plan before, during, and after you swim**.

YOUR PLAN is to drink 2 cups (16 ounces) of water 2 to 3 hours **before a workout/race** with another 1 cup (8 ounces) 10 to 20 minutes before diving into the pool. The longer and more intense your workout, the more you need, drink about 1 cup (8 ounces) of fluid every 10 to 20 minutes **during your workout**. Keep

a sports bottle filled with water at poolside, so it is in easy reach. **After workout/race** the exact amount you need to drink depends on how dehydrated you are after swimming. The '**pee test**' will give you an idea how dehydrated you are, otherwise **weigh yourself before and after training**. For each **0.5 kg (1 lb approx.) of body weight lost, drink 600 – 750 ml of fluid**. **Drink little and often – 150 ml every 10 or 15 minutes over the next hour or so until your urine is very pale yellow**.

REHYDRATE - WHAT SHOULD YOU DRINK? (2)

1. **Water** is best for most athletes. If you don't like the taste of plain water, slice up lemons or limes to drop into your water bottle for a fresh taste.
2. **1% or low-fat chocolate milk** is a good pre-workout and post-workout drink because it provides carbs, sodium, potassium (like sports drinks) with the added benefit of protein for muscle recovery and calcium for strong bones. Choose fat-free or 1% milk to lower the fat content and it is OK to choose low-fat flavored milk like strawberry.
3. **Diluted fruit juice.** Why dilute fruit juice? Fruit juice is too high in natural sugars to be a good fluid replacement. Fluids that have more than 6 to 7% carbohydrate (fruit juice has about 10% and some fruit juices even more) takes longer to leave the stomach so fluids don't reach your working muscles as quickly. May cause cramping and diarrhea.

CAUTION - "Sports Drinks (Gatorade, PowerAde, G2. Etc.)." – These products should be limited if at all possible. Due to the high sodium and potassium levels, you may experience potential adverse effects (diarrhea, shakes, vomiting) if drank in full concentration. An alternative is to buy the powder format and add to water in small amounts when you have long, hard workouts or have to race many longer distances during a meet, or dilute the sport drink with 50% water. **REMEMBER** - Always trial prior to event and dilute the concentration with water to find your comfort zone.



STAYING HYDRATED can help IMPROVE YOUR PERFORMANCE and keep you healthy. Develop an individualized fluid plan and don't wait until you are thirsty to drink... STAY AHEAD OF THIRST so you don't get dehydrated.

APSC PERFORMANCE NUTRITION (3)



TO BE THE BEST, YOU HAVE TO EAT LIKE THE BEST! If you could take your swimming to the next level, you would, right? Well, you can-by eating the right foods every day. What you put in your mouth affects you DIRECTLY - that includes in the water, and in your daily activities.

There are **NO** secrets to
SUCCESS. It is the
RESULT of
PREPARATION, HARD
WORK AND LEARNING
from **FAILURE**. Colin Powell

RECOVERY NUTRITION is a technique of refuel and repair which provides the swimmer's body with what they need to prepare for the next day of competition/training and recover from a workout/race. For example, carbohydrates to replace used up energy and proteins for muscle building and repair. It is about replenishing and **YOU** need to replace the fuel that you've used, otherwise you will feel sore, achy and tired during your next training session. Training volume and intensity vary from day to day and week to week along your training and competition plan. Eating your meals and fueling your workout or race should also be cycled according to how hard or easy training is. You're eating should match the physical demands of your training session.

REFUEL & REPAIR - The Athlete Training Plate is a guideline to help you focus on eating lean proteins, fruits and vegetables and whole grains to ensure that your body is prepared for training. **Training with an empty fuel tank = poor performance.**

For all training sessions make sure you eat a meal or a snack optimally 1-2 hours before you hit the pool.

- **MODERATE TRAINING PLATE** should be your baseline from where you adjust your portions of food down (easy) or up (hard/race). Moderate Training may be one where you focus on technical skill in one part and improve endurance or strength in the other. It may also contain just an easy workout or tapering without the need to load up for competition with energy and nutrients.
- **HARD TRAINING /RACE DAY PLATE** requires extra fuel from carbohydrates, use this plate to load up in the days before or week before a swim meet, throughout, and after the event day.

APSC PERFORMANCE NUTRITION (4)



The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.



APSC PERFORMANCE NUTRITION – HEALTHY SNACKS (5)

A healthy diet is one that provides us with enough energy we need from the correct types of foods in the right amounts. As a swimmer the role of your diet is not just to keep you healthy but also to meet the extra needs your body has due to the extra training you do. What you eat will affect your ability to train, recover between training sessions and compete. To achieve a well-balanced diet and give you that extra edge for your swimming, it is the basic nutrients that are important and the amounts and balances of these nutrients that you eat.

Here's a sample menu for a day - Many top swimmers will follow this eating pattern:

1. SNACK before early morning training
2.  Drinking during & after training – Remember Hydration
3. Breakfast MEAL within one hour of finishing training
4. Mid-morning SNACK
5. MEAL at lunchtime
6. Mid-afternoon SNACK
7. Dinner MEAL
8.  Drinking during & after training
9. SNACK within 30 min. after workout

That's 3 MEALS/DAY
PLUS
3-4 SNACKS /DAY
depending on your training session.

APSC PERFORMANCE NUTRITION – HEALTHY SNACKS (6)

HIGH PERFORMANCE SNACKS – 3 to 4 per day

- ✓ Fresh fruit is always a good choice or canned.
- ✓ Bread, english muffins, tortillas and bagels with cream cheese, peanut butter, jam or honey
- ✓ Sandwich Sandwiches: Use whole-wheat or whole-grain bread. Add lean meats, cheese, lettuce, tomatoes and green pepper slices to provide another food group or peanut butter, honey or jam.
- ✓ Raw vegetables: Baby carrot sticks in individual packages and cut-up, washed broccoli and cauliflower are readily available at the supermarket. Take them along with a snack-size container.
- ✓ Dry cereal: Try some finger-food cereals (unfrosted) alone or mixed with nuts, raisins or dried fruits. Take your cereal blend with you and eat it dry if you don't have time to add milk.
- ✓ Trail Mix: One that contains nuts, fruit and some cereal or pretzels or make your own.
- ✓ Yogurt: Buy it with the fruit added, or buy it plain and add your own favorite fruits or granola or the yogurt drinks.
- ✓ Instant oatmeal: Make it with low-fat milk instead of water. Add chopped nuts and raisins.
- ✓ Crackers, rick cakes. Try the whole-grain or stone-ground wheat variety and reduced-fat versions.
- ✓ Pretzels: Buy the salt-free variety, or knock off the salt entirely if reducing your salt intake is important.
- ✓ Frozen fruit bars: Choose the ones with fruit or fruit chunks at the beginning of the ingredients list.
- ✓ Nuts and seeds: Find ways to add peanuts, almonds, pecans, walnuts, sunflower seeds, pumpkin seeds, etc. to foods or eat them alone. They're a healthy choice, but be aware that they're also high in calories.
- ✓ Baked potatoes: Microwave them in minutes, and eat them hot or cold. Add cheese for protein.
- ✓ Energy bars, breakfast bars and low-fat granola bars: Bars are convenient, but they can be expensive. And don't believe all the labels say about enhancing your performance. It's the calories you're consuming that give you energy, not some magical ingredient.



APSC PERFORMANCE NUTRITION – RECOVERY (7)

Knowing how much carbohydrate, protein and fat to get in a day is good. But knowing **when** you should be getting those nutrients is even better. In general, follow these guidelines for incorporating carbohydrate, protein and fat into your day to maximize optimize your performance.

EAT TO RECOVER - Take advantage of the 30-minute window after training. This is when your muscles **restock energy** levels faster than normal. The sooner you supply your muscles with carbs and protein after training, the quicker they will **repair and rebuild**. So have your recovery drink/ snack ready in your kit bag or in the car to eat on your journey home.

- **Eat carbs with protein:** To help the body repair and rebuild, you need carbs with protein in a ratio of 3: 1. Ideally you should consume **approx. 20g protein**. You can achieve this either in the form of drink or food. The evidence continues to show that consuming carbohydrates with protein within 30 minutes of intense exercise helps to increase endurance capacity and performance, especially when workouts are scheduled daily. **THIS IS PERHAPS THE MOST IMPORTANT TIME TO EAT/DRINK!!!!**



Flavoured chocolate milk and yogurt shakes are near-perfect recovery drinks. Research shows that all types of milk after training speed up fuel recovery, encourage muscle gain and even reduce muscle soreness after training. Opt for 1% chocolate milk; ready-to-drink yogurt shakes or make your own smoothie from fruit, yogurt and milk or protein powder and milk.

If you're serious about improving your performance, **HAVE YOUR RECOVERY MEAL READY IN YOUR SWIM BAG OR IN THE CAR TO EAT ON YOUR JOURNEY HOME.**

APSC PERFORMANCE NUTRITION – RECOVERY (8)

HIGH PERFORMANCE RECOVERY FOODS

- ✓ 1% chocolate milk
- ✓ Cereal with milk
- ✓ Granola with yogurt
- ✓ Apple or banana with peanut butter
- ✓ Trail mix with nuts, dried fruit, and chocolate
- ✓ Peanut butter and jelly sandwich
- ✓ Pretzels and hummus
- ✓ Plain or flavoured yogurt + fruit + water
- ✓ Nut butter (almond, cashew and peanut): Spread it on a banana, bagel or rice cake + water.
- ✓ Homemade milk shake: Blend 1 cup milk, 1 banana, 1/2 cup yogurt, 1 scoop chocolate/vanilla protein whey powder and 6 to 8 ice cubes
- ✓ Fruit yogurt smoothie: whizz together 1-2 cups of yogurt or 1 scoop chocolate/vanilla protein whey powder, 1 banana or a handful of berries and 150ml fruit juice.
- ✓ Natural ingredient sport bar (35-40g carbs and 15-20g protein) + water
- ✓ 50g nuts (e.g. almonds or cashews) plus 1-2 cups of yogurt



ADDITIONAL RECOVERY NUTRITION GUIDELINES ARE CRITICAL TO MAXIMIZING RECOVERY!!!!

- Follow it up with a carbohydrate rich and moderate protein meal & fluid within 60-90 minutes of your training session to help your body recover even faster and optimize energy storage levels.
- Continued refuel and hydration following the timeframes is imperative to optimizing the recovery phase.

PLAN AHEAD TO ENSURE YOU HAVE HEALTHY FOODS AVAILABLE WHEN YOU NEED THEM.

APSC PERFORMANCE NUTRITION – MEET PREPARATION (9)

Swimmers should focus on eating balanced and nutritious foods all of the time. In order to ensure that your body has the right levels of fuel, **you need to plan in advance what and when you will eat before, during, and after the swim meet**. The research is very compelling that eating well on days of practice is just as important as eating well right before a swim meet. A balanced diet rich in fruits, vegetables, whole grains, nuts and seeds, proteins and fats will help you train harder so that you are better prepared for competition.

NUTRITION ALONE will
not make you into a
WORLD CLASS
SWIMMER but **BAD**
EATING HABITS can
make you **AVERAGE**.

WEEK BEFORE COMPETITION - For swimming **carbohydrates are your body's 1st energy source** – and main fuel for working muscles. Training and a healthy carbohydrate-rich diet work together to boost the competitive edge. Training helps your body use carbohydrates efficiently and store more as muscle glycogen. Stored in muscles, glycogen fuel is ready to power your swimming.

DAY/NIGHT BEFORE COMPETITION - The day before a swimming event requires extra effort to ensure adequate carbohydrate is eaten and fluid intake has

been sufficient to ensure a good state of hydration. The focus for meals and snacks over the day should be 'fuel foods' and fluids, with a reduction in high fat/protein foods during this period. The meal eaten in the evening should have a carbohydrate base such as pasta, rice, noodles or quinoa. Stick to portion sizes to avoid eating too many **calories that can disrupt sleep and slow digestion**. You need to keep those glycogen stores topped up.



REMEMBER TO HYDRATE!

APSC PERFORMANCE NUTRITION – MEET PREPARATION (10)

HIGH PERFORMANCE MEALS

LASAGNE - include lots of **pasta** sheets with lean beef, pork or chicken, tomatoes, spinach and reduced fat cheese and a crunchy side salad or vegetables.

PASTA - your favourite pasta shape with tomato based sauce, vegetables and cheese (chicken, tuna or lean beef is another great addition to this dish).

MEATBALLS - lean beef with grated carrot and zucchini, tasty sauce, served with steamed rice.

CURRY - lean chicken or vegetarian with chickpeas, extra veggies and steamed rice.

HOMEMADE STEAK BURGERS - grill, small quick steaks and top with sauce, and lots of salad on a multigrain roll.

CHICKEN WRAPS - tortillas filled with roast chicken, salad and light sour cream or a dollop of low fat natural yoghurt.

HEARTY MINESTRONE SOUP - a meal in a bowl, rich with vegetables, beans and rice.

Serve with a crusty bread roll.

PIZZA - uses a pre prepared thick base topped with cherry tomatoes, basil, lean ham and mozzarella.

STIR-FRY - toss lean chicken or pork with plenty of vegetables in a sweet chilli and soy sauce, and serve

DESSERT AND EXTRAS - Pancakes or waffles, creamed rice with fruit, fresh fruit platter, canned or poached fruit

DRINKS - Water, mineral water, yogurt smoothies, milk, hot chocolate



REMEMBER TO HYDRATE!

ALWAYS TRIAL meals and snacks prior to competition to find what works for YOU!

APSC PERFORMANCE NUTRITION – MEET PREPARATION (11)

THE PRE-EVENT MEAL - The timing of your meal depends on when the competition starts, but you should aim to finish your meal at **least 2.5 - 3 hours** before the competition starts. The meal should be high in carbohydrate and low in fat and protein. The pre-event meal is a '**mini-nutrition period**'. It should top-up your blood sugar levels after the night's rest. The meal should not be large, but should fill you up for the next few hours.

Most swimmers don't understand the exact role of the pre-event meal and eat as much carbohydrates as possible to top-up energy **foods eaten during the week** stores. This has little effect on increasing muscle glycogen levels. **Remember**, it is the leading up to the meet that establishes the muscle glycogen levels. By meet day, glycogen levels are mostly "set" and there is little that you can do to increase them in the hours before competition.

GUIDELINES

- ✓ High-carbohydrate foods are the best options: e.g., bread, cereals, and fruit.
- ✓ Ensure that the meal is low fat (fat takes too long to digest).
- ✓ Simply Water - Drink about 500-1000ml of water about 1 hour before the warm-up to 'top up' your hydration levels.
- ✓ Avoid the caffeine in cola drinks, coffee, chocolate, and tea - it dehydrates you.
- ✓ If you feel too nervous to eat, try a liquid meal such as a fruit smoothie.
- ✓ Practice with your pre-event meal in the days prior to the meet to fine tune what you will be eating. This will allow you to know whether it fills you up enough, and whether it tastes good!

DON'T FORGET TO CARRY YOUR WATER BOTTLE AT ALL TIMES & USE IT!

APSC PERFORMANCE NUTRITION – MEET PREPARATION (12)

WHAT CAN I HAVE FOR BREAKFAST? Don't swim on empty. Even if you feel nervous, make breakfast happen. Stick to easily digested foods – cereal with milk, porridge, banana with yoghurt, some fruit or toast with jam. If you're really struggling, try liquid meals such as yoghurt drinks or a smoothie. It's a good idea to rehearse your competition meal routine in training so you know exactly what agrees with you. Try to eat 2.5 – 3 hours prior to meet.

DO'S

- ✓ Eat cereals like oatmeal or oat bran.
- ✓ Select whole grain or high fiber cereals.
- ✓ Eat breads such as toast or bagels.
- ✓ Try milk, skimmed or low fat is best.
- ✓ Choose fruit, including fresh fruit and canned in water or fruit juices.
- ✓ One egg with some toast.
- ✓ Choose fat free toppings like syrups and jams as an alternative to butter.



DON'TS

- ✓ Have a full fry-up including sausage, ham or bacon.
- ✓ Have too many eggs, concentrate more on have carbohydrates rather than protein.
- ✓ Have high sugar cereals. They will give you a quick fix BUT cause you to crash.
- ✓ Have fast food breakfast sandwiches. They contain too much fat which takes longer to digest. This will make you feel "stuffed" and lazy in the pool.
- ✓ Use too much margarine or butter.

AND MOST IMPORTANTLY.....DON'T.....SKIP BREAKFAST!!!!!!

Swimming on an empty stomach makes you feel like you have no energy!

APSC PERFORMANCE NUTRITION – COMPETITION (13)

WHAT SHOULD I BE EATING & DRINKING BETWEEN EVENTS? Foods that are high in complex carbohydrates are easier to digest and empty from the stomach faster, which is important, because not only do you want to swim on a relatively empty stomach, you also want the foods you eat to be efficiently converted to energy. These simple guidelines will guide you through nutritional recovery after the warm-up and prepare you for the upcoming events.

GUIDELINES

- ✓ Have a drink of water -  **REMEMBER HYDRATION** - about 15 minutes prior to the event. This will allow enough time for it to be absorbed.
- ✓ Right before an event, it's best not to snack or drink. Eating too close to a race can redirect blood flow to the stomach to help in the digestion of food.
- ✓ In **longer breaks** of at least 90 minutes, have something to eat as well as some fluids. Something like a banana will stop you feeling hungry and give you more energy.
- ✓ In **shorter breaks**, use a water or flavored water to replace fluids.
- ✓ Keep drinking throughout the day to keep your blood and energy pumping. It is recommended to drink about 500ml every hour. However, due to the warm environment, this may be more.
- ✓ Eating too much at once can make you feel heavy and lethargic.
- ✓ The best approach is to eat a little and often during the day in between events.

One IMPORTANT KEY to success is
SELF-CONFIDENCE ...
And important to self-confidence is
PREPARATION. Arthur Ash

APSC PERFORMANCE NUTRITION – COMPETITION (14)

HIGH PERFORMANCE SNACKS TO HAVE BETWEEN EVENTS

(1-2 hour breaks between events)

- ✓ Fruits or fruit salads are good and store easy in your bag. Bananas are the best fruit. They are high in carbohydrates.
- ✓ Sandwich/wraps with turkey or other low fat meats or bananas
- ✓ Small portions of pasta salad
- ✓ Rice cakes, crackers (you can top them with honey, jam, or banana)
- ✓ Jam or honey sandwiches, bagels, English muffins.
- ✓ Low-fat yogurts
- ✓ Good quality soups
- ✓ Dry cereal
- ✓ Oatmeal in a cup
- ✓ Trail mix



A. FOR SHORT SPRINT EVENTS (50-200M) - Consume a high

carbohydrate source such as fruit about 30 minutes before the event.

This provides glucose which enters the bloodstream quickly, giving you a fast boost of energy. Having high levels of muscle glycogen will not have a major effect on your sprint event, as long as your levels are not too low. This is because a single 50 or 100m race does not use massive amounts of carbohydrates. **VERY IMPORTANT TO EAT WELL THE WEEK BEFORE A MEET!**

B. FOR LONGER DISTANCE EVENTS (400-1500) - Consuming 500-1000ml of water about 1 hour prior to the first event will be more beneficial. Consuming a high carbohydrate source 15 -20 minutes before may give you a quick boost of energy. Your energy will come from muscle glycogen stores which were set by your previous meals.

APSC PERFORMANCE NUTRITION – AFTER COMPETITION (15)



WHAT SHOULD I BE EATING AFTER THE COMPETITION?

- ✓ Have something to drink and eat immediately after your last swim – “Think Recovery”. Water and a recovery drink/food with a 3 to 1 ratio of carbohydrate to protein is best- 1% Chocolate Milk.
- ✓ Be prepared and have a carbohydrate/protein wrap or pasta bowl on hand to eat on your way home.
- ✓ Avoid the “fast food” chains on the way home - their high fat foods will delay recovery.
- ✓ A high carbohydrate meal with some protein is best. Protein will help repair muscles over-night and works best when consumed with carbohydrates.

THE WORST THING YOU CAN DO IS WAIT A COUPLE OF HOURS, AND THEN HAVE A LITTLE SNACK. THIS WILL NOT BE SUFFICIENT, ESPECIALLY IF YOU HAVE AN EVENT THE NEXT DAY.

WHAT DO I EAT IF I HAVE EVENTS THE NEXT DAY?

Do's

- Eat pasta dishes that contains carbohydrates, proteins and fats.
- Eat rice dishes.
- Have soups, with some bread.
- Have a baked potato with topping.
- Have fresh fruit, yogurt, or jelly for dessert.

Don't

- Choose deep fried meals like sausages, chips and beans.
- Eat high fat meals like hot dogs or burgers.
- Ruin a baked potato or bread with too much butter and cheese.
- Have cakes, ice cream and pies



REMEMBER TO HYDRATE!

APSC PERFORMANCE NUTRITION – TRAVEL PLAN (16)

HEALTHY EATING AT RESTAURANTS - Whether you're travelling on a long bus trip or flying, the key to successful eating while on the move is planning and preparation. Relying on restaurants is an expensive option for travelling athletes. However, you may find yourself in a situation where you can cater for your own breakfasts and lunches and eat out in the evenings. Restaurants offer a variety of choices, the trick is to make sure you pick the right restaurant and the right menu item in order to stay on track with your nutrition plan.

BASIC RULES FOR EATING OUT

- ✓ Make sure that your water glass is topped up regularly to help with hydration goals. When extra carbohydrate is needed, chocolate milk may also be a good option.
- ✓ When fuel needs are high, order a basket of plain bread to boost the carbohydrate.
- ✓ Choose meals that focus on carbohydrate choices such as rice or pasta. Opt for sauces without cream and with small amounts of cheese and oil.
- ✓ If you are having a main course based on meat, fish or poultry, choose a medium sized portion and don't forget the fuel foods such as a baked potato or a side dish of rice.
- ✓ Order side serves of vegetables or salad if they don't come with the meal. Ask for black pepper, tomato sauce or salsa rather than buttery sauces, and lemon juice or balsamic vinegar rather than salad dressings.
- ✓ Desserts are not mandatory – keep your overall nutrition goals in mind.
- ✓ **Rest Stop or Gas Station Convenience Store** – Stick to foods that you recognize and would purchase if you were shopping in a grocery store. Look for low-fat dairy products in the coolers and fresh fruit near the checkout. Trail mix and granola bars are also available, but check the nutrition label before buying them. Choose snacks high in fiber and protein.
- ✓ **Sub Sandwich Restaurant** – These can be great options since your food is often made-to-order. Choose whole-wheat bread and lean meat, such as turkey, or have an all-vegetable sub. Load up on as many vegetables as you want, but be cautious of high-fat condiments, dressing and cheese. Instead, use condiments lightly and ask for reduced-fat cheese.



APSC PERFORMANCE NUTRITION – TRAVEL PLAN (17)

SNACKS FOR ON THE ROAD



- Invest in a cooler and ice pack to take with you when you travel. Low-fat or fat-free yogurt, string cheese, hard-boiled eggs and vegetables with hummus are great snacks; sandwiches with lean deli meat or grilled chicken are more substantial snacks that pack well in a cooler.
- Shelf-stable foods are best if you do not have a cooler. Fresh fruit, crackers, tuna packets, nut butter sandwiches and trail mix are healthy options. Bagels, breads and other ready-to-eat carbohydrates also can be easily transported.
- Remember to pack beverages to help keep you hydrated while traveling. Always bring water & chocolate milk will all contribute to your fueling and hydration needs.

HEALTHY EATING AT A HOTEL

- If there is a local grocery store, you can purchase fresh fruit and vegetables, salad, whole-wheat bread or crackers, nut butters, and tuna packets. If your room has a kitchenette or refrigerator, you can purchase low-fat or fat-free dairy products.
- Use your best judgment at hotel continental breakfasts. Avoid pastries and baked goods, as they are high in sugar and fat and provide little nutritional value.
- Fresh fruit, and low-fat or fat-free yogurt and oatmeal, are great ways to start your day.
- For the best carbohydrate choices, choose a whole-wheat bagel or low-sugar cold cereals with low-fat or skim milk.
- Juices can be high in calories and low in fiber. Choose 100 percent fruit juice over a juice blend.



PLANNING AND PREPARATION

PERFORMANCE NUTRITION–VITAMINS & MINERALS (18)

Adequate intake of vitamins and minerals is essential for good health, energy levels and performance for all swimmers. Eating a wide variety of foods, including wholegrains, vegetables, fruit, dairy foods and alternatives, lean protein sources and healthy fats will help to ensure that vitamin and mineral needs are met. Generally, if a swimmer is meeting their energy needs through a healthy diet, they will also meet their vitamin and mineral needs. However, sometimes it is difficult to consistently eat the best possible diet. Augmenting a balanced diet with a multi vitamin helps to cover all your nutritional bases.



CALCIUM & VITAMIN D

CALCIUM & VITAMIN D - Calcium is a nutrient that helps you build and maintain strong bones. When you don't get enough calcium, your bones have a higher risk of becoming weak and are more likely to break. Vitamin D is a nutrient that helps your body absorb calcium. Calcium and vitamin D work together to help you maintain healthy bones. Vitamin D also helps your muscles work properly. Generally, swimmers should be consuming at least 2-3 serves of dairy foods or fortified soy alternatives each day. Examples of one serving include: 1 cup of milk; 1 tub of yoghurt; 2 slices of reduced fat cheese; 1 cup of a calcium enriched soy beverage. Other good sources of calcium include canned fish with edible bones (such as salmon), green leafy vegetables, nuts and seeds. However, you would need to eat quite large amounts of these choices to obtain a sufficient daily intake.

VITAMINS A, C, & E are “antioxidant” vitamins. Antioxidant help reduce muscle damage and speed up recovery after you train. The best sources of **VITAMIN C** are vegetables and fruit such as oranges, strawberries, bell peppers, tomatoes and broccoli. Animal foods like liver, milk, salmon and eggs are rich in **VITAMIN A**. Dark green and orange vegetables and fruit are rich in carotenoids which can be turned into vitamin A in our bodies. **VITAMIN E** is found in nuts, seeds, avocado, vegetable oils and wheat germ.

PERFORMANCE NUTRITION–VITAMINS & MINERALS (19)

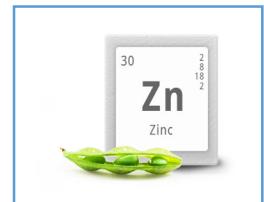
IRON - The mineral, iron, plays an important role in the body's delivery and use of oxygen to and by working muscles. It binds oxygen to hemoglobin, which then travels in the bloodstream to locations throughout the body. Generally, the more oxygen there is being delivered, the greater the body's ability to perform work. Low iron in the body can reduce aerobic capacity and impair endurance performance. Low iron levels can cause tiredness and will affect performance at training and competition.



The best sources of dietary iron include lean red meats, liver and kidney. You should aim to include a small amount of lean red meat in your diet around 3-4 times a week. Other sources of iron are green leafy vegetables, legumes such as lentils and baked beans, eggs and breakfast cereals. It is more difficult for the body to absorb the iron from these sources, however eating complementary foods that supply Vitamin C increases the body's ability to absorb the iron from non-meat sources. For example, put strawberries

on their iron-fortified cereal or offer a glass of orange juice with a hamburger. **If you are experiencing any signs of iron deficiency it is important to see your family physician for further testing.**

ZINC - Zinc is a mineral involved in many aspects of metabolism, and is important for immune function, wound healing, taste and smell, and normal growth and development during adolescence. A wide variety of foods contain zinc, and although oysters contain more zinc per serving than any other food, lean red meat and poultry are the main sources in most people's diets. Other good food sources include beans, nuts, certain types of seafood (such as crab and lobster), whole grains, fortified breakfast cereals, and dairy products.



BALANCED DIET WITH A MULTI VITAMIN HELPS TO COVER ALL YOUR NUTRITIONAL BASES.