# 420 HIGH LEVEL COACH

## Nutrition of 420 sailors

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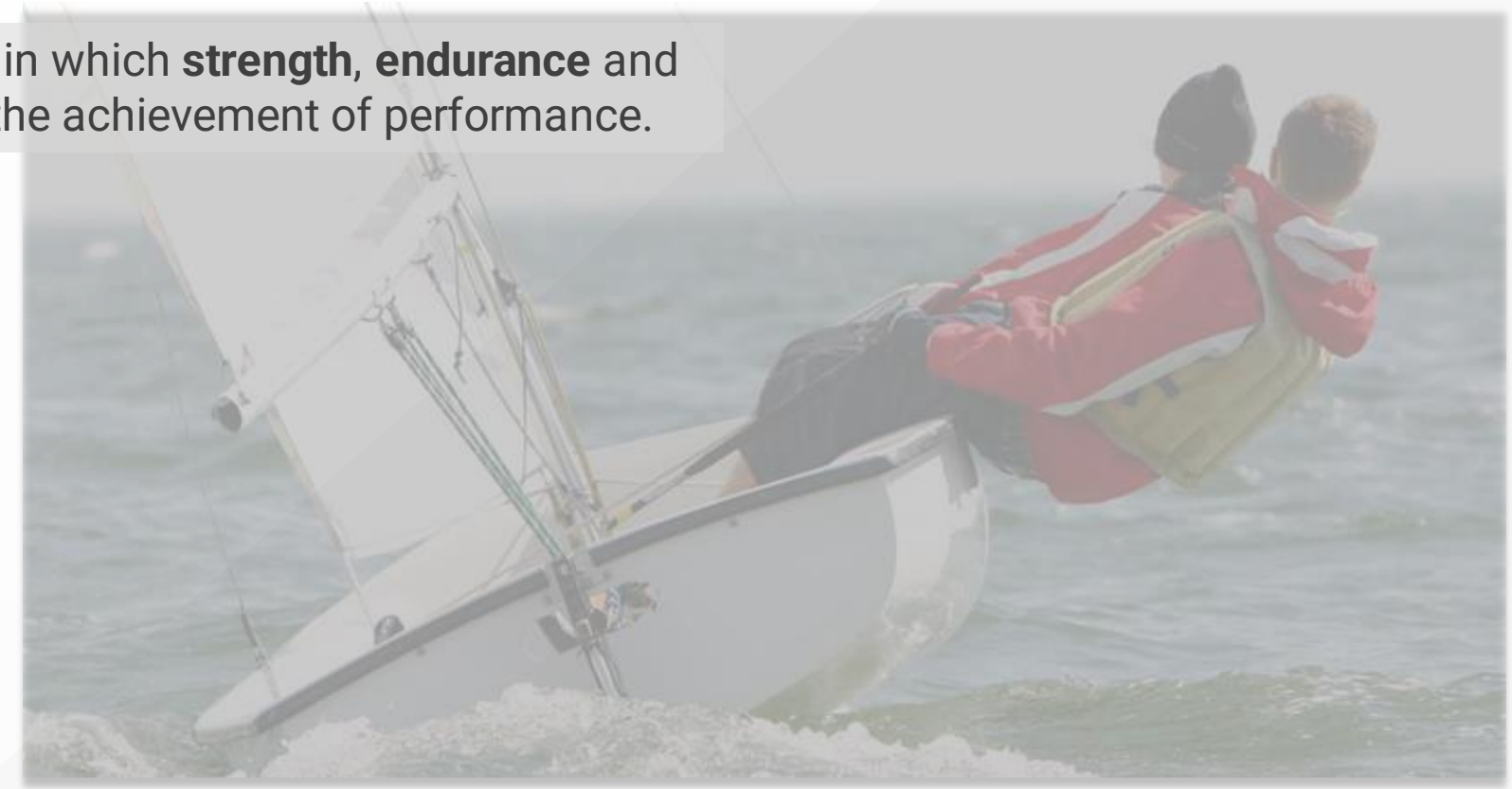
# Nutrition for Sailors

**The nutritional requirements for sailors are influenced by several variables, in particular the environmental conditions play a key role in this sport.**

# Anaerobic / Aerobic

Sailing is a skill sport, in which **strength**, **endurance** and speed contribute to the achievement of performance.



Require the development of MUSCLE STRENGTH/MASS

*The ability to carry out work against a resistance.*

Endurance

*The ability to make a lot of physical effort over a long period of times*

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# Nutrition for Sailors

The Mediterranean Diet is suitable for those who practice sports, providing the right proportion of nutrients and a large amount of protective substances, such as vitamins and antioxidants, contrasting the production of free radicals which increase during physical exercise.


**Athletes have different nutritional needs compared to the general population**

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# Nutrition for Sailors

- Higher energy and macronutrient intake
- Increased water and electrolyte intake
- Timing of meals considering the schedule of training and competitions

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# Nutrition for Sailors

**An insufficient energy intake can cause:**

- **loss of weight and muscle mass**
- **injuries**
- **illnesses**
- **increased prevalence of overtraining and reduced performance**

# NUTRIENT TIMING

Nutrient timing is a dietary strategy in which specific nutrients are ingested at certain times surrounding training/competition, in order to improve performance, recovery, and adaptation

**Goals:**

- to favorably impact the adaptive response to exercise (e.g. muscle strength and power, body composition, substrate utilization)
- **to improve athletic performance**

The timing of **carbohydrates**, **proteins** and **fats** can greatly influence the adaptive response to exercise.

# Carbohydrates

- Provide energy during exercise
- Replenish energy after exercise
- Prevent the use of proteins for energy purposes

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# Carbohydrates

**Preferably, the majority of dietary carbohydrate should come from whole grains, vegetables, fruits, etc..**

**Foods that empty quickly from the stomach such as refined sugars, starches and engineered sports nutrition products should be reserved for situations requiring rapid energy recovery**

# Protein

**High quality protein from a variety of foods spread throughout the day for optimal protein synthesis.**

**Prefer proteins with a high biological value. (chicken meat, turkey, beef, fish, egg white, and semi-skimmed milk…).**

# Lipids

The dietary recommendations of fat intake for athletes are similar to or **slightly greater** than those recommended for non-athletes. Adequate consumption of essential fatty acids, especially polyunsaturated fatty acids, are of great importance among athletes.

# Nutrition for Sailors

Beyond optimal energy intake, consuming adequate amounts of carbohydrate, protein, and fat is important for athletes to optimize their training and performance.
Main meals should be balanced especially in terms of protein and carbohydrate intake; starting with breakfast, which very often, by Italian tradition, is sweet and relatively low in protein. Some foods that could be introduced to ensure the first protein intake of the day can be: yogurt, toast, sandwich with ham, eggs.

**TIPS**

- Always try the diet during training, preferably do not include foods other than the athlete's routine on the day of the competitive event.
- The use of dense energy foods, (eg energy bars, energy gels) can provide an alternative solution to supplement the diet of athletes and allow the achievement of an adequate energy intake, calibrated with the physical activity performed.

# Nutrition Timing before competition

- The meal before a competition should be eaten approximately 2-3 hours before to ensure adequate digestion

- It should be:

✓ Rich in complex carbohydrates
✓ Easily digestible
✓ Low in fiber and lipids

**Goals:**
- To prevent hunger before and during exercise
- To maintain optimal energy levels for exercise

# Before competition

example

# Nutrition Timing before competition

## The pre-event snack

The pre-event snack is of crucial importance in sailing. In the period from the pre-competition meal to the start of the competition, the athlete should take a ration, preferably hydro-glucose about 30-60 min-1 hour from the competition.

**Goal: to maintain constant blood sugar levels, provide ready-to-use energy in the starting phase and prevent any pre-race dehydration.**

# The pre-event snack

## examples

**supplement snacks**

- **Gel carbohydrate supplement**
- **Sport drink**
- **Energy bar**

**non-supplement snacks**

rusks with jam

toast with jam

# Nutrition Timing during competition

- Maintain constant blood sugar levels
- Preserve energy stocks
- Maintain mental clarity
- Prevent muscle catabolism
- Prevent dehydration

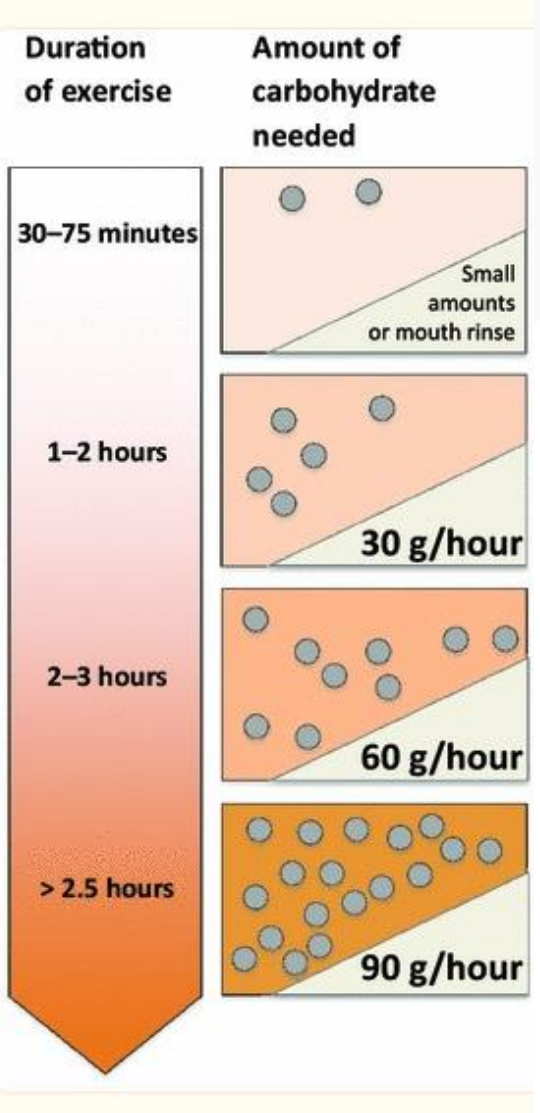
# Nutrition Timing during competition

It is not necessary to ingest large amounts of carbohydrate during exercise lasting approximately 30 min to 1 h and that a mouth rinse with carbohydrate may be sufficient to obtain a performance benefit.

When the exercise is more prolonged (more than an hour), carbohydrate becomes a very important fuel, useful to prevent a decrease in performance.

Guidelines recommend that athletes should take between thirty and sixty grams of carbohydrate per hour during exercise (over 1 hour) -> fast-absorbing forms of carbohydrates such as maltodextrins should be chosen.

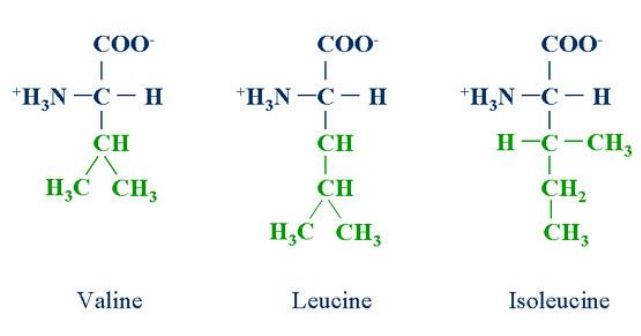
If it is a prolonged exercise (over two and a half hours) then the amount of carbohydrates to be ingested is greater (ninety grams per hour)



# Nutrition Timing during competition

- **No evidence for the benefit of consuming proteins during exercise.**

- **Some studies have shown promising results for essential amino acids / Branched-chain amino acids (BCAAs) supplementation, but more research is needed.**



# During competiton

examples


# Nutrition Timing after competition

- to ensure an adequate Hydro-saline recovery
- to recover energy
- to speed up muscle recovery

**Goals:**

- **Repair of muscle damage due to prolonged physical exercise**
- **Support for high protein synthesis**

# Nutrition Timing after competition

- **Evidence states that combining carbs and protein after training further improves your muscle glycogen recovery as well.**

- **Ingestion of a 20-40 g protein dose after performance, appears to affect Muscle Protein Sintesis rates more favorably than other dietary patterns.Therefore, this is associated with improved body composition and performance results.**

# After competition

example

# Water Needs

A good state of hydration during training and competition is essential

A hydric deficit greater than two percent of body mass after endurance activity is correlated to reduced athletic performance.

**Focus on… sailing**

Recent studies have shown that over 75% of an Olympic national sailing team, often had insufficient hydration. In addition, it has also been observed that they have an incomplete dietary habits with an excessive intake of proteins compared to carbohydrates.

The consumption of drinks containing electrolytes and carbohydrates can help both maintain fluid and electrolyte balance and support performance in the case of endurance disciplines. The type, intensity and duration of physical exercise, as well as environmental conditions, influence the need for fluids and electrolytes.

# Water Needs

External temperature

Hyperventilation

Humidity

Salty environment

Clothing

Reduced perception of thirst
Reduced availability of water

# Water Needs

The risk of a sailor becoming dehydrated in training or a regatta is high

A sailor should start the regatta hydrated by drinking small amounts regularly from waking on race day, till the racing has begun.

Fluid balance testing with Olympic Sailors has shown sweat rates that average between 500-1500ml/hour

Planning ahead and taking sufficient fluids on the boat or in the coach boat for on-water sessions and regattas is important.

Dehydration causes cognitive impairment along with reduced skill and impaired endurance, which is a significant issue for sailors given decision making and concentration are key factors in performance.


Suitable choices include sports drinks (to provide carbohydrate and electrolytes as well as fluid), water or electrolyte drinks (when fuel requirements are low, but fluid needs are high)

# Water Needs

**BEFORE training/competition:**

- 300 - 500 ml of fluids approximately two hours before exercise
- 200-300 ml in the minutes before the race

- Always keep water and drinks close at hand to maintain hydration
- Carbonated drinks should be avoided because the presence of carbon dioxide can cause intestinal disorders

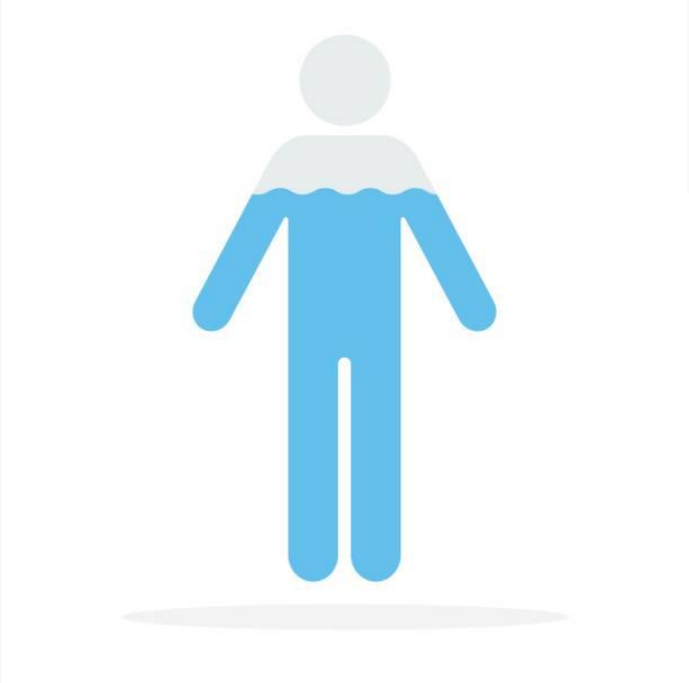
**DURING training/competition:**

- 150-200 mL of drinks every 20 minutes.
- For Activities lasting < 60': sufficient hydration with water
- For Activities lasting > 60': addition of CHO 30-60 g/hour and /or electrolytes (e.g. sodium, magnesium and potassium)

# Water Needs

- **After training/competition:**

- After the race, the athlete should restore the water balance by drinking a volume equivalent to 125/150% of the weight loss between before and after the activity.



In practice, a good tip is to drink in small sips every quarter of an hour.

# Water Needs

## Difficulty for the sailor


Considering that the sailor cannot easily receive help during the regatta, therefore the water requirement can hardly be met.
So even with excellent planning it is possible to meet just the minimum hydration requirement


**Solution:**
get to the competition well hydrated, with excellent planning to meet just the minimum requirement

# Water Needs

**TIPS**

- Come to the regatta with a good state of hydration
- Prepare your own adequate water rations
- Try to hydrate as much as possible during the race
- Have, when possible, the support of the dinghy
- Beware of excessive sweating
- Use suitable clothing to avoid heat loss

# Gastrointestinal Discomfort

- Very frequent among endurance athletes
- Greater problems are found in those who eat an excessive amount of foods rich in fats (e.g. dairy products, ice cream) and fibers before the competition;
- The consumption of caffeine before the competition or an excessive consumption of fructose could also cause problems.

Prevention:

- proper hydration
- food hygiene
- testing supplements and timing during workouts
- possible integration with probiotics and prebiotics

# Gastrointestinal Discomfort

Practical advices:

- Do not try new drinks, bars or gels before or during the competition
- Choose iso or hypotonic drinks from known and safe companies
- Drinks in small sips
- Eat in small doses and slowly to facilitate digestion
- Limit lipids consumption in the pre-competition meal
- In the last 2 days before the race, limit foods rich in fiber, caffeine, alcohol, creams....

# Nutritional sports supplements


Food supplements are products presented in small consumption units such as capsules, tablets, vials, based on nutrients or other substances with a nutritional or physiological effect.

The use of these products must be made in a conscious and informed way about their function, without opposing correct eating habits in the context of a healthy lifestyle

# Nutritional sports supplements

Even if you play sports at a high level, you can meet your nutritional needs with a varied and balanced diet.

Any use of food supplements must consider the type of activity carried out and the actual individual needs.

Taking supplements at doses higher than those recommended, which excessively unbalance the dietary intake of nutrients, is irrational and can have adverse consequences on your physical condition, performance and, if prolonged, also on your health.

# Nutritional sports supplements

***"Dietary supplements or ergogenic aids will never substitute for genetic makeup, years of training, and optimum nutrition."***

***Dietary supplements can play a small role in an athlete's sports nutrition plan, with products that include essential micronutrients, sports foods, performance supplements, and health supplements all potentially providing benefits.***
***Some supplements, when used appropriately, may help athletes to meet sports nutrition goals.***

There are few significant data available regarding positive effects on performance and/or physical recovery for many supplements.
For most of the supplements there are mixed data (positive-negative) or data that do not confirm their direct efficacy.



*American College of Sports Medicine position stand. Nutrition and athletic performance. American Dietetic Association. Med Sci Sports Exerc. 2009 Mar;41(3):709-31.*

# Nutritional sports supplements

Supplements are usually used for:

- correct or prevent nutritional deficiencies that can compromise health or performance
- for a practical intake of energy and nutrients before/after/during a training session
- to achieve improved performance and better recovery

# Nutritional sports supplements

## How do they look like?

- Liquids
- Bars
- Gel
- Soluble powder
- Tablets
- Capsules

# Bars

## Energy bars

Energy booster to increase glucose availability in endurance athletes during prolonged exercises. However, their use in sports nutrition finds different uses.

Composition: high presence of carbohydrates, low percentage of proteins and lipids

<u>General features:</u>
Long conservation
Easy portability
High carbohydrate percentage (60-70%)

# Bars

## Energy bars

### How to use?

- **Daily snacks to enrich them mainly with carbohydrates: for example for athletes with high training loads**
- **Sports trips**
- **Before training / competition: to maximize carbohydrate intake**
- **After training / competition: to supply the body with easily assimilated**

The use of the energy bars varies according to the nutrient inputs established for the athlete; they can possibly be accompanied by drinks (water, fruit juice ...) according to tastes and moments

# Bars

## Protein bars

- To increase protein and carbohydrate intake during the day, especially in the hours following training/competition.

- Easy portability
- Easy digestibility
- High biological value proteins

# Bars

## Protein bars

### How to use?

- To replace daily snacks or enrich them with protein
- In sports / travel trips
- To balance the protein intake in vegetarian diets

The use of protein bars varies according to the protein and carbohydrate intake established for the athlete; the bars can possibly be accompanied by drinks (water, fruit juices, sports drinks) according to tastes and moments

# Sport gels

## Carbohydrate gel


- Category of **energy boosters.**

- High amount of carbohydrates
- Free of proteins and lipids

# Sport gels

## Carbohydrate gel

- **High presence of rapidly assimilated carbohydrates (CHO 70-80%), generally with a high glycemic index.**
- **Generally free of proteins and lipids**
- **When sport drinks are not consumable or sufficient**
- **Practical use: Pocket size, easily transportable and consumable.**
- **High digestibility**

# Sport gels

## Carbohydrate gel

- **During breaks during training / competition sessions**
- **Before the training / competition (1h)**
- **If the athlete does not tolerate solid foods or does not have them available.**

Ideal for long-lasting sport

the amount varies according to the duration of the training/competition

# Sport drinks

- Sport drinks are drinks composed mainly of water, electrolytes (for example sodium, potassium, magnesium), carbohydrates (maltodextrin, fructose, glucose).
- Some sport drinks can promote hydration, while others also provide energetic support for performance.
- They also aim to increase the intake of fluids compared to water, as they have a more pleasant taste.
- Sport drinks provide fast assimilating components.

# Sport drinks

## How to use?

- During training/competition (like a hydro-carbohydrate-saline support) and also
- After training/competition, as a source of liquids to complete rehydration



**Recommended amount**

**In general 500-750 ml of drink for short and medium duration activities (<1 h); 750-1000 of drink for long-lasting activities (> 1 h)**

# Focus on… Maltodextrin

**Maltodextrins are polysaccharides obtained by enzymatic hydrolysis starting from corn starch.**

**They are gradually assimilated by the body, for this reason they are able to supply energy constantly and for a longer period than simple sugars.**

Mainly used before and during training/competition

# Focus on… Maltodextrin

**Characteristics:**

- **Water-soluble**
- **Neutral flavor**
- **High digestibility**
- **High glycemic index**

**They guarantee a constant supply of energy**

# Nutritional sports supplements

**Foods should be considered first choice whenever possible.**

The use of food instead of supplements "protects" athletes from 3 potential health risks:

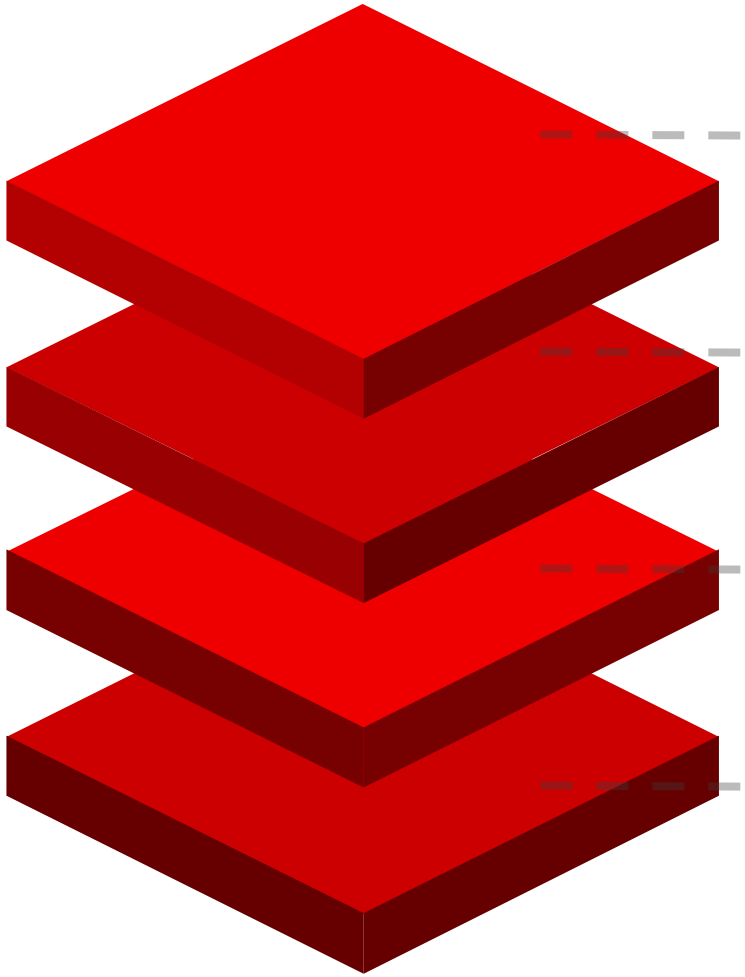
- Abandoning correct food choices based on the Mediterranean model
- Consuming excess doses, thus making an inappropriate use.
- Trusting in an external support, which can be the integrator, rather than in one's own abilities.

# Nutrition for Sailors

To plan a personalized diet for the sailor, it is necessary to consider:

- Food habits of the subject
- Anthropometric assessment and body composition
- Level of sports
- Phase of the racing season
- Number of daily and weekly workouts and competitions
- Duration of workouts and timetable (timing)
- Type of training (e.g. power, endurance ..)
- Competitive goals

# TAKE HOME MESSAGE



- Involve the whole team to create a personalized nutritional planning.
- The food plan must be tested in training sessions. It is inadvisable to introduce new foods/supplements on race day.
- Timing of food/supplement intake may vary from athlete to athlete – Personalize the meal plan as much as possible by talking to the athlete.
- Take good care of hydration.

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# THANK S

## FOR YOUR ATTENTION