NUTRITION FOR THE DEVELOPING ATHLETE

Little Athletics

Growth and Development

Training Nutrition

Hydration do's and don'ts

Event Day nutrition

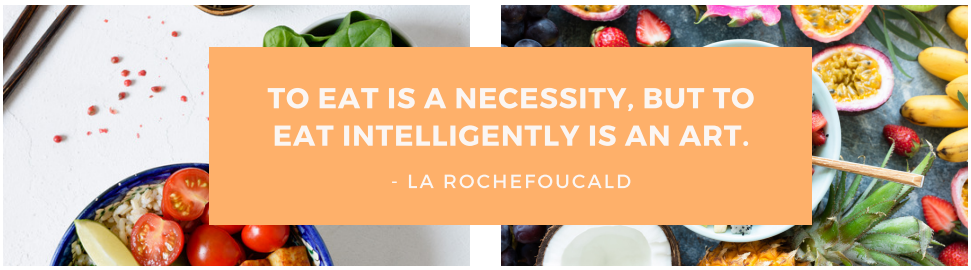
Fuel and Support

Reduce risk of Injury

Repair and Recovery for performance

The Purpose

Nutrition for our younger athletes involves many focuses not just on training nutrition but additionally adequate nutrition for growth and development, training, competition or events, supporting the immune system and producing a positive energy availability to reduce the risk of injury.



Sports nutrition is all numbers but as you are probably more than aware it involves individuality and having an immense understanding of the athlete, and it needs to be continually evolving and changing according to growth needs and to optimise adaptive effects from the ever changing training program. Even at such a young age it is vital that we build a strong relationship between food and the athletes, to enable adequate nutrition but also healthy and positive relationships with food not only to benefit training performance but later in life after their sporting career has finished.

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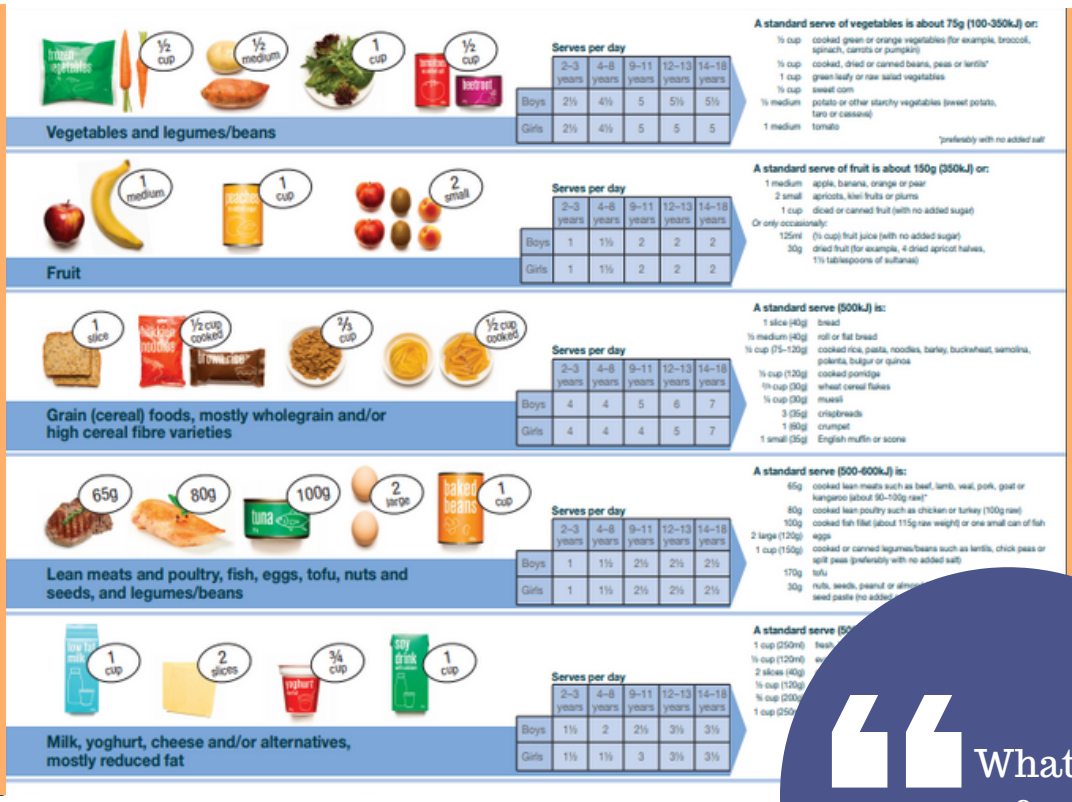
Growth and Development

Building a Foundation; Nutrition Guidelines

The Australian Nutrition Guidelines cover nutritional requirements for growth and development. This is a great guide to help reach nutrition requirements before adding in sports nutrition for training. Just like a house if we don't have the foundation right, the painting on the wall will not hang straight.

What can Coach's do?

Ask questions related to these guidelines as it will be covered in school. This will help to understand your athlete's current nutrition intake, and thought's around food.



> What is your favourite food?

It might seem difficult to believe children of primary school age are even more in tune with their eating behaviours as they often don't discuss it and are also heavily lead by their taste buds. But as babies and young children we are driven to eat via emotions. Emotionally eating as been termed as a bit of 'bad' activity however it is this action that leads to a great understanding between coach's, sports dietitians and the athletes.

Ask questions : " What is your favourite food before training and why? " , " How do you feel after a lolly compared to a sandwich?" , "What foods feel heavy in your stomach after eating?" (and these foods can be avoided before training or events)

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Growth and Development

POSITIVE ENERGY AVAILABILITY

To reach nutritional requirements we can use a plate as example of nutrition focusses. There are slight variations in the focus of nutrients for the under 12 years as opposed to adolescents who are going through puberty.

Under 12 years will need to mostly focus on balancing energy availability and nutrient density.

During puberty athletes will need more energy for puberty and the demands of replenishing and recovery after heavier training loads. Followed by nutrient dense foods.

Nutrient Dense

foods = > nutrients content to energy content

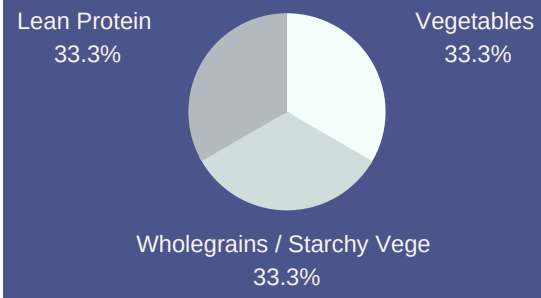
Vegetables except potatoes, corn and legumes
Lean Protein = fish, beef, pork, poultry

Energy Dense

foods = good nutrient profile but more useful as energy

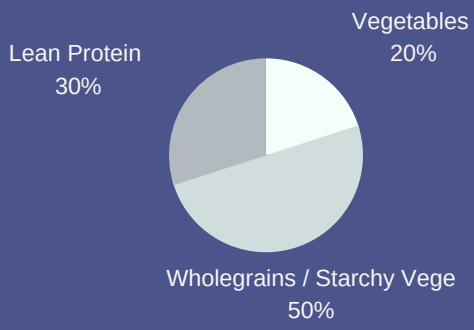
Vegetables: potatoes, legumes, corn
Wholegrains & Cereals: bread, pasta, rice, quinoa, cous cous, wraps, oats
Dairy: milk, yoghurt, cheese
Fruit: all fruit

PLATE PORTIONS FOR OPTIMUM ENERGY AVAILABILITY



< 12 YEARS / PRE-PUBERTAL AGE

Fats incorporated through foods or cooking with a focus on: fish, avocado, extra virgin olive oil, nuts and seeds



> 12 YEARS / OR DURING PUBERTY

- approximate values and portion sizes will change with body size, gender (muscle mass differences) and training loads

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TRAINING NUTRITION

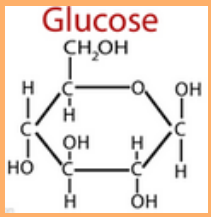
FUEL FOR ATHLETICS: CARBOHYDRATES

Despite the bad wrap that carbohydrates are given this is an athletes fuel. Even more especially in a sport where there is a lot of explosive activity and performance is to rely mostly on the anaerobic energy system. Should be noted that fats are being continually used however it is not the preferred source or get our athlete gold medals.

Just delving into the science a bit more, as a sports dietitian we educate athletes to ensure they properly understand the 'why'. Even the young ones can use concepts to help with compliance and to feel in control. As you can see below any sugar will be broken down to glucose (muscle fuel) and transported with priority to the working muscles. This occurs at any point of the day, but more so after training and if carbohydrate is ingested during training or events.

Particularly when there is choccy milk involved. I have done many group sport nutrition workshops with various sports and whether choccy milk has a place in the diet is a non-doubtly a question that pops up everytime! And much to their delight the answer is YES. A study has confirmed that the composition of chocolate milk is great recovery snack - after training / after an event / and during if their stomach can tolerate dairy. Milk in general has a great composition of carbohydrates and protein. The key for optimal fueling.

> IS CHOCCY MILK A GOOD AFTER TRAINING SNACK??



RESEARCH ARTICLE Open Access

Chocolate Milk versus carbohydrate supplements in adolescent athletes: a field based study

Katelyn A. Born, Erin E. Dooley, P. Andy Cheshire, Lauren E. McGill, Jonathon M. Cosgrove, John L. Ivy and John B. Bartholomew*

Abstract

Purpose: The purpose of this study is to translate laboratory-based research on beverage-based supplements to a naturalistic, field setting in adolescent athletes. To this end, we tested the effects of two commercially-available drinks on strength in a field-based setting with both male and female high school athletes completing a summer training program.

Methods: One hundred and three high school athletes completed the study (*M* age = 15.3, *SD* = 1.2; 70.9% male; 37.9% Afr. Amer.). Measures included a composite strength score (bench press + squat). Participants completed 1 week of pre- and post-testing, and 4 days per week of strength and conditioning training for 5 weeks. Participants were randomly-assigned to receive either CM or CHO immediately post-exercise.

Results: A 2 (group) × 2 (time) repeated measures ANOVA showed there was a significant main effect on time for

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Training Nutrition

FUEL, REPLENISH, REPAIR AND RECOVER

Nutrition around training is going to piece together the puzzle. Once we have the foundation nutrition in place we can focus on strategies to optimise energy levels, replenish fuel stores predominately within the muscles and bones, repair muscles, and recover cells used during training, all to help performance.

Fuel

Fueling before an event or training needs to be the same so that ahletes are familiar with 'safe' options (avoid mid training vomits or stomach cramps), to reduce nerves towards food decisions, and importantly make sure there is enough energy in the tank rather than relying on the stored energy. This can look like a snack or a main meal. Since we know carbohydrates fuel us that will be the focus of the fuelling nutrition. Adding protein will alleviate hunger if there is a longer duration between fueling and movement.

During Training or Event Nutrition

This can be the meal or snack that is fueling for an event. The main focus here is avoiding gastrointestional issues and to specifically use this fuel instead of stored fuel.

Low fibre foods will digest more quickly than high fibre foods choose: white flour grains / fruit / lollies/ muesli bar / jam / pikelets

Fats and protein also take a long time to digest. Try to avoid these macronutrients when using food <1.5 hours before training or an event.

> 1.5 hours before a small amount of protein like a chicken sandwich is usually tolerated and reduce hunger pains.

Post- training or event

Aiming for the athlete to eat within 30 - 90 minutes after training or the last event to refuel muscles optimally.
Ideally include a recovery meal/snack followed by the main meal will be replenish for growth and development

Replenish + Repair + Recover

Fueling for training


70% Carbohydrates
20% Protein
5-10% Fats

During training or <1.5 hours before an event


100% low fibre carbohydrates
+ hydration (small sips)

Fueling after training




70% Carbohydrates
20% Protein
10% Fats

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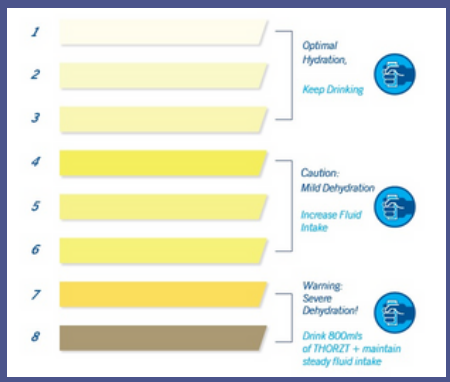

Check your hydration with urine colour!
Aiming for the first 3 shades

Hydration

Hydration vs Fueling

Water

Hydration

Sports Drink

Fueling

As you can see here there is a difference between water and sports drinks. Once we had sugar or a solid to water it becomes a food that needs to be digested. It therefore is not the best hydration method.

Do young athletes need electrolytes?

The easy answer is NO. We don't need sports drinks or electrolytes if we are an adolescent or younger age and are a light sweater at any age.

The training or event conditions may change the sweating rate like a hotter temperature or higher humidity for those older than puberty age. Younger athletes who have not reached puberty do not cool their body down by sweat. The cooling process is predominately via blood vessels reaching skin surface.

How much fluid to hydrate/ re-hydrate?

To determine if your athlete (after puberty age) is a heavy sweater or light sweater, weigh the athlete before and after a training session. Ensure no fluids have been consumed or the athlete has not visited the loo. The weight loss is the amount of water to re-hydrate too. This can be anywhere to 200ml to 2L! This amount needs to be consumed in the net few hours for optimum hydration. Electrolyte tablet can be used in a water bottle (try shotz, hydrolyte, Torq and thorzt brands) or any electrolyte with <5g carbohydrates/sugar content.

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