

# STRENGTH, CONDITIONING AND NUTRITION

A guided e-book for adolescent  
athletes and active teens



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# ARE YOU READY?!



*~ A little message to you from the creators of this little e-book ~*

Are you ready to discover how to improve your health, wellbeing, performance and nutrition? We are so excited for you and want to thank you for downloading this e-book.

Being a teenager can be tough.

We understand that everyone is different and your health journey and story is unique. We hope this e-book will help you understand ways you can stay healthy and fit and fuel your body with the energy it needs to live, work, play and be your best! Oh, and you'll help your body grow stronger and keep those nasty injuries away too!

**Why is strength and conditioning important to prevent injury?**

**What are the key ingredients of a great program?**

**How can you fuel your body for best performance?**

**What foods are best to eat before and after training?**

*BONUS 3x nutritious and delicious recipes for breakfast and snack options*

**If you have any questions, just head to the last page of this e-book for our contact details. We would love to hear from you and help you on your health journey!**

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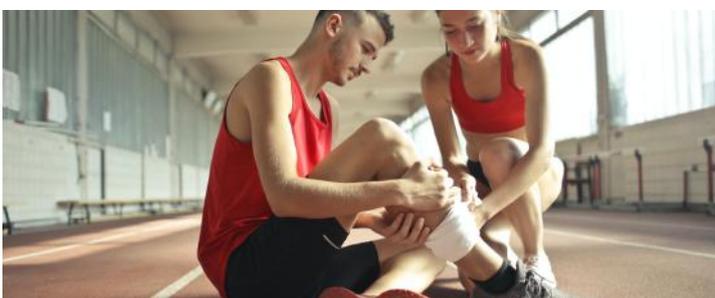
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# STRENGTH AND CONDITIONING



## Why is conditioning so important for adolescent athletes?

- Research shows that we can decondition in just 3 weeks off season (on holiday or break) which can lead to higher injury risk on return.
- As we age we need longer pre-season training programs.
- Lower level competition levels = higher risk of injury. If you are not in an elite program which incorporates training and conditioning coaches, you are more likely to have lower levels of conditioning and exposure to injury prevention programs.
- High loads in season peaks and competition periods (spike in training hours and intensity) can lead to higher risk of injury.
- Overload injuries can occur with changes in training schedules or additional commitments.
- Growth spurts and developmental (hormone) changes can also increase risk of injury, especially in females.
- Age and experience within your chosen sport or physical activity will influence your risk as well.



### SPECIFICITY

Must be related to your training, sport and movement patterns to prepare your body for that activity. You wouldn't train for Netball drills if you wanted to play Rugby.

### STRENGTH

Good muscle mass is important for development, injury prevention, joint stability, power and balance. You need strength and core stability to reduce impact and prevent injuries.

### CROSS-TRAINING

Challenge your body to build endurance, cardiovascular fitness and robustness.

## Key ingredients of a great program

### COMPLIMENTARY

Avoid adding repetitive load to your training schedule. Repetition of a skill and poor exercise programs can lead to overload injuries.

### PERSONALISED SUPPORT

Consider all factors that influence the individual (eg. sleep, stress management, nutritional intake, energy levels, motivation, experience, age and development, hormones, past injuries, and other commitments).

### COMPLETE

Must include dynamic mobility, warm-up routines and release work, specific to the individual.

## REST AND RECOVERY IS IMPORTANT

Don't forget to focus on un-loading, releasing, stretching, and making time for rest and recovery. Yoga, meditation and breath work are highly beneficial. They are often the KEY to taking your performance to the next level!



## Tips for cross training when you want to improve performance

- Cross training helps build your cardiovascular fitness, condition your body, build resilience to stress and improve endurance. This means less fatigue, more efficient movement and a healthier body and heart.
- DO NOT assume that you have enough fitness from your sport alone. You will need progressive loading over time to develop better movement patterns with less exertion and fatigue. Your cross training should complement your training so be aware not to cause an overload injury.
- High Intensity Interval Training (HIIT) with a strength based circuit program is often great for sports or performing arts that require repetitive, fast and short bursts of energy.
- Aim for 2-3x per week to complete your strength and conditioning program on the days you don't have heavy training.
- Start with small sessions and focus on control, landing mechanics and technique with each exercise. **QUALITY OVER QUANTITY.**
- You may start with 45sec-1min intervals, alternating between a cardio based exercise and a strength exercise with 30sec change over between to rest.

## Options for cardio and plyometric training (not exclusive or specific)

- Rowing – focus on core control not back extension, and power through the legs and arms
- Skipping – gradually increase time, intensity and pace, focus on soft landing control (peel and squish)
- Stair drills – fast to power up and slow to walk down. Drive through the hips and glutes (into extension) and push through a strong back leg to push off the step and propel forwards. Use your arms to pump you up.
- Bike riding – for specific sports needing leg endurance and power (also good non-impact option)
- Jumping jacks – focus on soft landing through the feet to control impact
- Squat jumps – double jump with landing control, keep alignment of hips and knees to feet, progress to 90deg or 180deg turns
- Split lunge jumps – lunge + squat + opposite lunge. Focus on hip-knee-foot alignment throughout (don't allow to fall in/out), keep feet on parallel 'train tracks', back knee under back hip, front ankle under front knee. Straight back. Option to step through each transition instead of jumping if you need to work on control first.
- Yoga Flow - such as Ashtanga (strength training)
- Interval sprints, shuttle run and weaving - between markers around 5-10m apart (related to sports with cutting, speed, agility and running)



## DEVELOPING FEMALE ATHLETES ARE AT HIGHER RISK OF INJURY

It is important to monitor female adolescents during puberty. Factors that contribute to this higher risk of injury include hormone changes (also affecting joint/ligament laxity), training loads, neuromuscular control, bone density, and nutritional intake.

## When is the ideal time to start screenings and programs?

Regular screenings and Physiotherapy assessments are recommended especially during high periods of growth or changes in training loads. Ultimately, your program will be personalised to you and your training. A Physiotherapist can ensure you are prepared to continue in your chosen sport, injury free! If you are anticipating an increase in training load, you want to ideally start working on a specific conditioning program to build up to this load at least 6 weeks BEFORE.



## How often should I update my program?

If you are consistent with your program, around every 6-8 weeks you just adapt and adjust your program to continue to improve and challenge your body. Due to growth spurts and ongoing development of adolescents and children, it is important to check in with a Physiotherapist regularly (eg. Every 3-6 months) to address any niggles or concerns before an injury occurs. Injuries are more common in stages of rapid growth due to intense changes in the body's structure, feedback mechanisms ('clumsy' teens), nutritional requirements and hormone development.



Fatigue and poor nutritional intake



Poor technique and increased impact on the body's tissues and bones



Higher risk of injury and time away from sport



**INCREASED ACTIVITY AND TRAINING, IF NOT FUELED PROPERLY, IS A RECIPE FOR DISASTER!**

You need to eat nutrient dense foods, hydrate often, sleep well, and make time for rest and recovery. Not enough good fuel (food) and poor conditioning (preparation) can lead to fatigue and stress injuries.

# NUTRITION



## MACRONUTRIENTS

### Nutrition for adolescent athletes

Being a teenager can be tough. It's a time for growth and development triggered by hormonal changes requiring the right nutrition. Teens face a variety of challenges, during this time including changes in appetite to support changes in their height, weight and body composition. That is why choosing the right food at the right time is important.

Building blocks for a nutritious diet include a variety of colourful fruits and vegetable and a balance of proteins, carbohydrates and fats. Protein, carbohydrates and fats are the three macronutrients that body needs to fuel, thrive and survive. A lack of these in the diet coupled with regular exercise could lead to fatigue, extended recovery times and increased risk of injury.

#### Carbohydrates - fuelling foods

What: Carbohydrates are fuel for the body and the brain. Consider your body as a vehicle and that vehicle needs fuel to go further.

Where: Found in fruit, rice, pasta, bread, crackers, cereal, potato's, corn, pumpkin, beans and lentils, milk and yoghurt.

Considerations: Fast carbs offer the body quick and short spouts of energy. Best to limit. Slow carbs offer the body steady and long energy. Best option

#### Protein – building foods

What: Protein are the buildings blocks for muscle growth and repair.

Where: Found in eggs, poultry, red meat, seafood, tofu, beans and lentils, milk and yoghurt. Best to select lean meats and limit processed options

#### Fats – brain food

What: Specifically, unsaturated fats support brain and heart health whilst creating hormones important for this stage of life

Where: found in oily fish, avocado, plant-based oils such as olive oil, nuts, seeds.



## Q&A

**Q - I don't like breakfast/ what can I eat?**

**A -** You may not feel like breakfast or maybe there's not enough time in the morning, but your body needs to start the day with fuel so your brain and body can remain alert throughout the day. If you have a small appetite in the morning try the smoothie recipe or alternatively if it's a matter of not enough time, make up a batch of egg muffins to grab on the go.

**Q - What can I eat after training / what to eat after late session**

**A -** After training you need to replace the fuel you have used specially carbohydrates and protein. It's handy having a small post-training snack on hand such as cheese and crackers, yoghurt or milk drink.

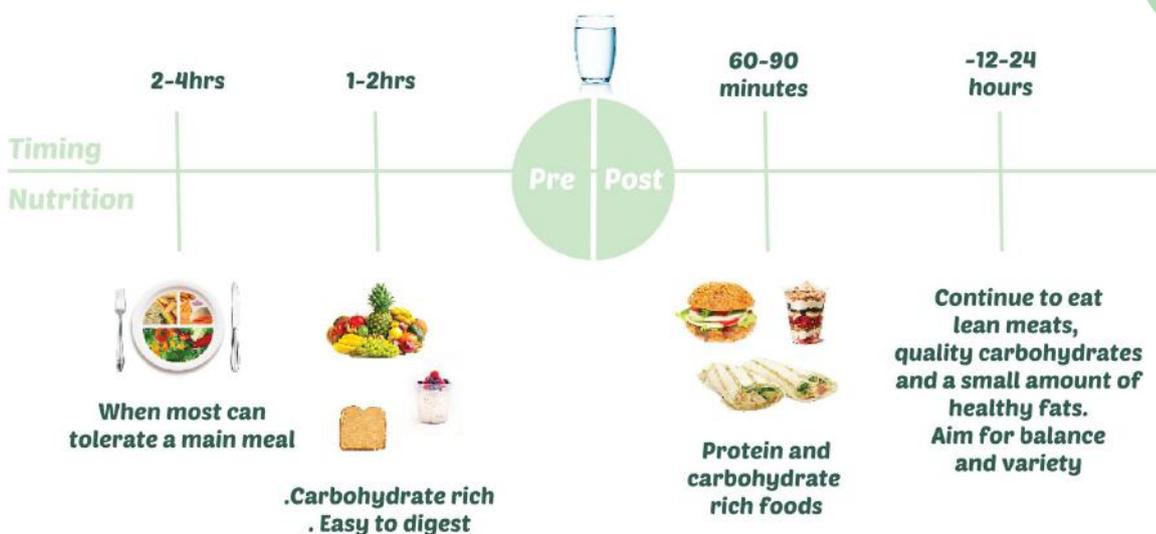
If dinner is soon after training make sure to select a lean protein, carbohydrates, fats and fill the plate up with vegetables. If your diet does not meet your energy needs you will notice loss of stamina, endurance, strength and reduced recovery causing sore muscles. If you have a late training session it is common to not want to eat a big meal just before bedtime so focus on the 3 rules when making a meal, protein, fats and carbohydrates and adjust the portion to your appetite. Skipping a meal is not advised and will impact your performance.



**Q - What snack should I have before sport?**

**A -** You want to eat something that is easily digestible and that will deliver sufficient fuel to your body. Aim for a carbohydrate rich snack such as a piece of fruit, toast, muesli bar, yoghurt or milk. Be aware of the timing of snacks aiming to eat your snack 60-30 minutes before training. Depending on your training duration and intensity the size of the snack can vary.

## Pre and Post Workout Nutrition



# Quick n Easy Snickers Smoothie



## The Ingredients

- 1 frozen banana
- Cocoa
- Peanut Butter
- Almond milk (Make sure it's calcium fortified)
- 1 Heaped tablespoon plain yoghurt
- Ice

## Methods

- Freeze a batch of bananas ensuring you cut them into 4 chunks before freezing. This will make it easier to blend.
- When you're ready to make the smoothie add all ingredients into a blender and blend until smooth.
- Add more ice to thicken or more almond milk if too thick.

# Chia Muesli bars

## The Ingredients

- 1 cup chia seeds
- 1½ cups water
- ½ cup dried cranberries
- 1/3 cup dried blueberries
- ½ cup coconut oil
- ½ cup maple syrup
- 1 teaspoon vanilla paste
- 1 cup quinoa flakes
- ½ cup pepita seeds
- ½ cup chopped nuts
- 1 cup shredded coconut
- ¼ cup sesame seeds
- 1 teaspoon cinnamon

## Methods

- Pre-heat oven on Fan Plus at 180°C.
- Place chia seeds, water, dried cranberries, dried blueberries, coconut oil, maple syrup and vanilla paste in the steam oven.
- Steam at 100°C for 8 minutes.
- Stir ingredients until mixed well. Leave to cool
- Add the dry ingredients – quinoa, pepitas, nuts, coconut, sesame seeds and cinnamon. Stir to bind ingredients. Add an extra water if mixture is a tad dry, if the recipe is too wet, add extra chia seeds.
- Place into a 20cm x 30cm tin, lined with baking paper.
- Wet the back of a spoon to smooth out the mix and to spread it out evenly.

Cook time: 20-30 minutes. 20 minutes will give you a chewy bar and any longer will provide a crunchier consistency.

Leave to cool and cut into bars.

[REFERENCE:SPORTSDIETITIANS.COM.AU](http://SPORTSDIETITIANS.COM.AU)



# Brekky Bombs



## The Ingredients

- 3-4 medium whole grain wraps
- 1 heaped tablespoon wholemeal self-raising flour
- Spinach (fresh or frozen)
- 70g tasty cheese/ feta
- 7 eggs
- 2 teaspoon chili flakes

## Methods

- Preheat oven on 200 degrees
- Cut wraps into 4 small triangles In a large bowl lightly whisk the eggs
- Roughly chop the spinach (approx 1-2 cups fresh) and add to the bowl
- Grate cheese or crumble feta into bowl
- Add flour Add seasoning and chili flakes and mix ingredients
- Using a non-stick cupcake tin place the individual triangles from the wrap into the moulds
- Pour the ingredients evenly into the moulds using a spoon or ladle

Cook time: 20-30minutes

Tip: Make a batch of these before a busy week and grab on the go



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