



# The Thrive Clinic

21 Stuart Street  
Mosman Park, WA 6012

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## **Adolescent Strength & Conditioning Information Pack**

At The Exercise Therapist, we see our clients as individuals with specific needs and considerations, rather than a grouped diagnosis. We have created a positive and welcoming environment for our clients, and provide supervision and guidance at all times. Although our exercise sessions tend to be performed in a small group setting, we aim to take the time to provide clients with specific understanding and knowledge in regards to their prescribed exercises and individual benefits.

### **Adolescent Strength & Conditioning**

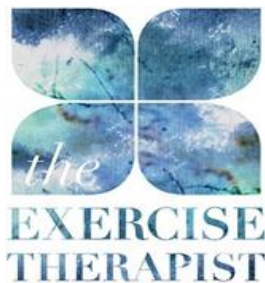
Multiple studies have shown that appropriately prescribed strength training can increase strength in preadolescents and adolescents. Increases in strength occur with a properly structured program that includes frequency, mode, intensity and duration. Over an 8 weeks program with two sessions per week shows the most beneficial frequency for adolescents to gain their strength needs. Unfortunately, gains in strength, muscle control and power are lost within 6 weeks after resistance training is discontinued. Recent research supports strength-training programs in adolescents will improve sports performance and prevent injuries, rehabilitate injuries and set the physiological foundation for sound growth development. Strength training has also been shown to have a beneficial effect on several measurable health indicators, such as cardiovascular fitness, body composition, bone mineral density, blood lipid profiles and mental health (American Academy of Paediatrics, 2008).

Preventive exercises (prehabilitation) refers to strength training programs that address areas commonly subjected to overuse injuries, such as providing rotator cuff and scapular stabilization exercises preventively to reduce overuse injuries of the shoulder. This is of particular importance when it comes to preparing the soft tissue for rapid bone and strength growth during bursitis.

Recent research suggested a possible reduction in sport-related anterior cruciate ligament injuries in adolescent girls when strength training was combined with specific plyometric exercises. Plyometric exercises enable a muscle to reach maximum strength in a relatively short time span through a combination of eccentric and concentric muscle contractions, such as jumping up onto and down from a platform. In order to be able to execute plyometrics successfully children need functional strength and balance.

### **Adolescents and strength training: (American Academy of Pediatrics, 2008)**

Adolescent strength and conditioning programs should begin with low resistance exercises until proper technique is perfected. The American Academy of Pediatrics recommend that when 8-15 repetitions can be performed it is then reasonable to add weight in 10% increments for adolescents who are engaging in strength training. If the goal is to improve endurance performance than increasing the repetitions of lighter resistance is the best method. For adolescents, exercises should include all muscle groups and should be performed through full range of motion at each joint to gain the most improvement. At The Exercise Therapist we ensure functional strength check points are achieved before progressions are made.



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## **Australian Institute of Sport (Narelle Sibte – Strength and Conditioning Coach)**

The best results for resistance training are demonstrated over an 8-12 week period. Failure to start resistance training before 16 years of age may be detrimental to playing longevity, injury rate and severity and overall performance.

Gains from strength training for preadolescents are generally attributed to the nervous system and motor learning. Preadolescents make similar relative gains in strength compared to later stages of development but usually demonstrate smaller absolute strength increases following strength training.

Common overuse injuries such as tendonitis and stress fractures can result from excessive volume of training and competition, particularly when loads are increased dramatically in a short period of time. Growing athletes may be particularly susceptible to such injuries because of diminished flexibility and muscle tendon strength mismatches

Poor technique, excessive loading and performance of jerky/bouncy activities and compression have the potential to damage growth plates of long bones in children and adolescences. However, bone stress via resistance training may encourage bone growth when performed under supervision with correct technique. Resistance training increases muscle strain, strain rate and compression which are all important for positive bone modelling. For injury prevention, adherence to sound exercises principles and competent adult supervision is paramount when adolescence and children engage in strength and conditioning programs.

Limiting increases in training frequency, intensity and duration to no more than 10% per week is optimal for strength gains in a safe and controlled manner (progressive overload). Intensity should be moderate (approximately 10-15reps) and maximal lifts should be avoided. High repetitions allow the adolescent to practice the technique and movement pattern more which assists their skill acquisition. Strength training comes from neuromuscular development in this age group, which makes it the ideal time to teach and perform co-ordination and stability. Overall recommendation of 1 to 3 sets of 6-15 repetitions of a variety of exercises and frequency of 2-3 days per week on non-consecutive days.

## **The Thrive Clinic Strength & Conditioning Program Aims and Objectives**

### **Athlete Population:**

Aims of the program are to improve or build athletic performance and outcomes. Increase functional strength and develop/improve postural strength and activation. Balance and postural control first, then working on sport specific goals for strength. Manage conditioning and strength when athlete is injured and/or during vulnerable growth spurts.

### **General Population:**

Aims of the program are to improve and develop functional strength, postural awareness/education and postural strength and neuromuscular function. Balance and postural control first then working on specific goals for strength.



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## **Clinical Population:**

Aims of the program are to improve and develop functional strength, postural awareness/education and postural strength and neuromuscular function. Reduce symptoms and side effects that the child may be experiencing, due to pathological symptoms. Balance and postural control first then working on specific goals for pathological specific strength.

## **The Exercise Therapist Program**

Children will progress through the sessions supervised by our team of Accredited Exercise Physiologists. Children are booked on 10 minute intervals into our Thrive Clinic to ensure adequate individual attention and supervision through each of our four stages of the practice. This practice process also supports and encourages self-accountability and an intrinsic focus in the children whilst being surrounded by similarly motivated peers during practice. The sessions are 30 minutes only and offer children and young adults a place to learn, discuss and experience firsthand how effective the combination of mindfulness practice and specifically prescribed cardiovascular exercises medicine is in managing our mental health and the relationship between our mind and body.