Why is Load Management so Important?

Girls are still developing bone strength, muscle coordination, and hormonal balance. If training loads are too high, increase too quickly, or are not balanced with adequate rest, there is a significantly higher risk of:

- Injury, both sudden (acute) and slow building (overuse), including
    - Stress fractures from repetitive impact without enough rest[1,3]
    - Tendonitis and tendon pain, especially in the knees and ankles
    - Growth plate injuries, which can affect long-term development
    - Muscle strains and ligament sprains
- Relative Energy Deficiency in Sport (REDs), a condition where the body does not get enough energy from food to support growth, development, and training, leading to:
    - Irregular or absent periods
    - Poor bone health and increased risk of fractures
    - Declining performance, mood changes, and tiredness [3]
    - Frequent illness due to a weakened immune system [1]
    - Burnout or drop out from sport, with loss of enjoyment, motivation, or confidence [2]

Common Injuries from Poor Load Management

- Stress fractures in the shins, feet, back or pelvis
- Patellofemoral pain syndrome, resulting in knee pain from repetitive running, jumping, or landing
- Sever's disease or Osgood-Schlatter disease, causing heel or knee pain unique to growing athletes
- Tendinitis, especially at the Achilles or patellar tendon
- Muscle strains and ligament sprains, often due to fatigue, lack of rest, or sudden increases in load
- Growth plate injuries, unique to adolescents, which can cause long term problems if not addressed [1,2]

Maturation and Individual Differences

It is important to recognise that girls mature at different rates during adolescence, both physically and hormonally. Signs of maturation include growth spurts, breast development, and the onset of menstruation. During periods of rapid growth, girls can be more vulnerable to injuries such as growth plate injuries, joint pain, and muscle imbalances. Girls who are late to mature compared to their peers may also require individualised load management, as their bones and joints are more susceptible to stress.

Guidelines post-maturation: Once a student has reached full maturation (growth has slowed, physical development and regular menstrual cycles are established), gradual increases in training can be considered, with closer alignment to adult athlete guidelines. However, progression should always be individual and account for the athlete's injury history, overall readiness, and wellbeing.

- Guidelines for late-maturing athletes: For girls who experience delayed maturation, it is important to be extra careful with training loads. Limiting repetitive impact and high training volumes, ensuring at least two full rest days a week, and regular check-ins with coaching and medical staff are advised. These girls benefit from flexible scheduling, targeted strength and conditioning, and continued focus on skill development across a variety of activities.
- Menstruation as a sign: The onset of periods is a key indicator of healthy maturation but irregular, absent, or suddenly stopped periods can be a sign that training load or nutrition is not appropriate. If your daughter has not started menstruating by age 15, develops irregular cycles after periods have started, or experiences a sudden change in her menstrual pattern, please consult your GP or a sports physician for assessment and support.

Best Practice Load Management Recommendations

All the following recommendations are supported by scientific evidence and expert consensus:

Rest Days

- Ensure at least one to two complete rest days per week. Rest means no organised sport, strenuous activity, or competition so the body can recover and adapt.[1,2]

Total Weekly Load

- A maximum of 16 to 18 hours per week of structured training and competition for most adolescent girls is recommended. Girls who are newer to sport or do high-impact activities may need significantly less, 8 to 12 hours per week.[2]

Annual Breaks

- Pre puberty girls should have two to three months away from their main sport each year, which can be spread across the year. This downtime is crucial for mental and physical recovery and early prevention of overuse injuries.[2]

Gradual Progression

- Sudden progressions or spikes in training are linked to increased injuries. The safest progression is no more than a 10 percent increase in duration, frequency, or intensity per week.[1]

Specialisation

- Multi-sport participation is encouraged up to at least age 12 to 14 to reduce repetitive strain and promote wellbeing. Early specialisation is linked to a higher risk of injury and burnout.[2]

Recovery, Nutrition, and Sleep

- At least eight to ten hours of sleep per night is vital. A diet sufficient in energy and nutrients supports development and recovery. Lack of adequate nutrition is a major factor in injuries, slow recovery, and REDs. Please consult a sports dietitian for guidance as needed. Encourage your daughter to speak up about soreness, fatigue, or pain. These are important warning signals and should never be ignored.[1,3]

Other Important Considerations

Be cautious if your daughter is playing or training with multiple age groups at club level. While extra opportunities can be exciting, overlapping training and matches can easily lead to excessive total physical load and a higher risk of both injuries and burnout. Always include all sporting commitments in your daughter's total load and count her weekly hours and matches accurately.

Parental Involvement – Your Support is Vital

We encourage all parents to sit down with their daughter and actively review her training and competition load regularly. Use the above guidelines to ensure there are clearly scheduled rest days and her full sporting commitments (both within and outside Pymble) are included. Supporting your daughter to accurately monitor and manage her load is one of the most effective ways you can help keep her healthy and enjoying her sport for the long term.

Communication is Key

Many Pymble athletes train with both internal and external coaches. Please ensure you regularly liaise with all coaches, sharing your daughter's total training and competition schedule. Consistent communication allows every coach, both within Pymble and externally, to monitor, adjust, and support your daughter's progress while prioritising her health.[1]

Signs That Load May Be Too High

Please look out for the following:

- Ongoing tiredness, low motivation, or decline in school or sport performance
- Chronic soreness or recurring injuries
- Missed or irregular periods
- Changes in eating habits or mood
- Loss of enjoyment in sport

If in doubt, reach out to the Sports Department, your daughter's coaches, or book an appointment with Dr Sly for advice and support.

Helpful Resources

- Managing the Physical Load of Female Athletes – Balance is Better
- Australian Institute of Sport Training Load Guidelines
- Understanding Relative Energy Deficiency in Sport (REDs)

References

1. Australian Institute of Sport Training Load in Relation to Loading and Unloading Phases of Training
2. Managing the Physical Load of Female Athletes – Balance is Better
3. De Souza M J et al 2022 Female Athlete Triad and REDs J Sports Med