



Chinooks creates programs tailored to youth development needs across the genders and ages and with regards to our women's players, studies have found physiological differences between the sexes. To better prepare our players we ensure that our programs best fit their needs relative to their age, physical ability and gender specific development and physiological characteristics. Below are examples of our considerations for our male and female athletes as it relates to our Sports Science and Training Programs.

Whether you're male or female, to be a high-level footballer you still need to develop all areas of your athleticism i.e., strength, power, speed, injury resilience and stamina...

...However, there are a few key things to keep top of mind when training a female player vs, a male, let's break them down:

### **1. Muscle Fiber Composition**

Research indicates that females generally have a higher percentage of type I muscle fibres (slow-twitch fibres) compared to males, meaning that males are naturally more explosive whilst females are naturally built more for endurance.

Of course, there will be differences person to person, as well as genetics playing a part as well.

### **2. Hormonal Influences**

Estrogen, progesterone, and testosterone levels fluctuate throughout the menstrual cycle in females, impacting factors such as muscle strength, endurance, and recovery.

Estrogen, for instance, has been shown to affect collagen synthesis and joint laxity, potentially influencing injury risk. Progesterone may also affect neuromuscular control and stability.

### **3. Biomechanics**

Differences in hip width, pelvic structure and lower limb alignment between males and females can influence movement patterns and biomechanics during activities like running, cutting, and jumping.

For example, females tend to have a wider pelvis and greater Q-angle (the angle between the quadriceps muscle and the patellar tendon), which can increase the risk of knee injuries such as ACL tears.

Therefore, including exercises which target neuromuscular control, proprioception and proper movement mechanics is key, although male players will also greatly benefit from these exercises too.

### **4. Recovery and Regeneration**

Female athletes may experience different responses to training stimuli and recovery strategies compared to males, partly due to hormonal variations.

Understanding the role of factors such as sleep, nutrition, hydration, and stress management in recovery is essential for optimizing performance and minimizing the risk of overtraining and injury in female players.

Therefore, for female players it's even more important to actively monitor training load and be mindful of how they are feeling both physically and mentally week to week in response to their training.



### **5. Strength Training**

Female soccer players typically have a lower muscle mass in their lower body compared to males. Therefore, emphasis should be placed on developing strength in the lower body, particularly in the quadriceps, hamstrings, glutes, and calves.

While not as critical as lower body strength, female players should still incorporate upper body strength training to enhance overall body strength and prevent muscle imbalances.

### **6. Flexibility and Mobility**

Females tend to have greater flexibility than males due to differences in muscle and joint structure. However, this can also lead to an increased risk of injury if not properly managed.

Therefore, flexibility training should focus on maintaining an optimal range of motion while ensuring stability and joint integrity.

### **7. Injury Prevention**

As mentioned, female players have a higher risk of certain injuries compared to males, such as ACL injuries.

Therefore, their training programs should include exercises that target the muscles surrounding the knees and hips to help reduce the risk of ACL injuries.

Neuromuscular training, including balance, agility, and proprioceptive exercises, can also help reduce the risk of common football-related injuries in female players.

But again, this is much of the same training that males will also be doing.

### **8. Bone Health**

Female athletes, especially those involved in sports with high impact and weight-bearing activities like football, are at greater risk of developing conditions such as stress fractures and osteoporosis.

The good news is that strength training exercises such as squats and lunges will promote bone health and density, so with an S&C program we're inherently covering that already.

*In Collaboration with Matchfit Football and Dan Balsom.*