

The South West Talent Development Centre

Case Study No 3: Functional Screening

August 2010



The South West Talent Development Centre is a joint initiative between the University of Bath and Sport England. Its objective is to maximize the potential of people from the South West to progress to elite levels in sport by providing support to and building the capacity of National Governing Bodies to implement their talent pathways in the South West.

Working Collaboratively with Physiotherapists and Strength & Conditioning Coaches

In the last 12 months the SW Talent Centre has worked with over 200 adolescent "Training to Train" and "Training to Compete" athletes from 27 different sports. They range in ability from junior internationals to strong multi-sport athletes who have not yet specialised. These athletes and their coaches have invested huge amounts of time in developing their sport specific skills but early on in our involvement with them it became clear that insufficient attention was being paid to their general physical preparation consequently it has become a major area of focus for the SW Talent Centre.

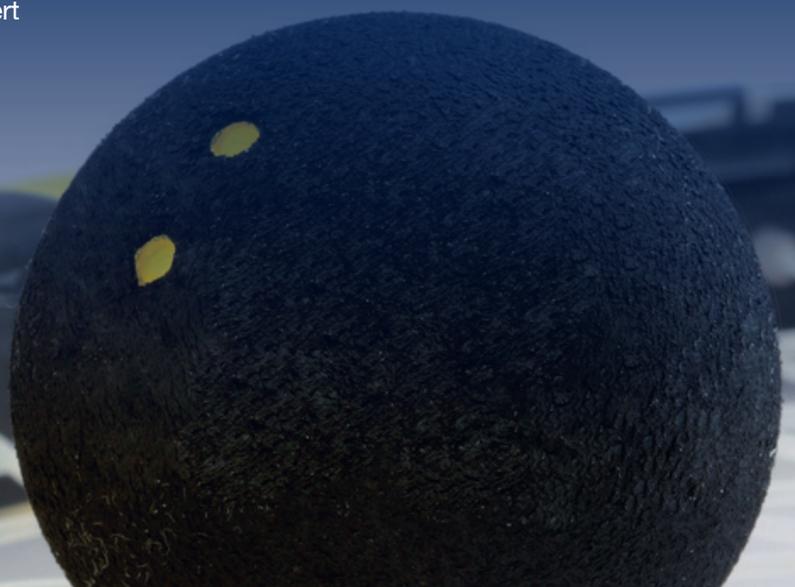
Each athlete on the SW Talent Centre performance development programme was given a functional assessment conducted collaboratively by a physiotherapist and strength and conditioning coach with the athlete's personal coach in attendance when possible. Muscular imbalances and poor movement patterns that could either lead to injury or were limiting performance were identified for the strength and conditioning coach to address through an appropriate individualised programme. The strength and conditioning coaches work from the premise that all around athleticism must be developed before any athlete progresses to generic programmes specific to the sport.

To date only a handful were passed fit by the physiotherapists to immediately progress onto sport specific programmes. A larger number were caught just in time to reverse asymmetries that weren't far off becoming life long problems, a particular concern for early maturing boys who achieve their adult strength levels by the age of 16, long before most come into contact with an expert strength and conditioning coach.

What we found was that the vast majority of athletes had postural problems, poor gluteal activation, poor scapula stability and many lacked hamstring flexibility. The structural integrity necessary to develop the basics of good motor skills that will help specialist skills later on was absent and few would have been able to cope with the increased training volumes that come with specialisation without breaking down with injury.

Addressing these problems as adults once they've really become ingrained can take large investments of time and effort however if they're addressed while adolescent bodies are still developing most can be easily remedied. Good general physical preparation training between the ages of 13 and 16 prior to full specialisation and in line with the principles of Long Term Athlete Development (LTAD) in order to capitalise on the Windows of Trainability for speed, maximal aerobic power and strength that occur relative to their growth spurt has a dramatic impact on an athlete's long term prospects.

An expert strength and conditioning coach targeting an individual's needs can make a substantive difference in as little as 6 to 12 months. As the athlete's basic physical abilities such as strength, flexibility and agility improve, their ability to acquire and execute the skills required to excel in their chosen sport is enhanced, fewer training hours are lost to over-use injuries and they're better prepared the training rigours of the elite programmes they aspire to join.



Athlete mini-study – The injury prevention story
Sam was a 14 year old multi-sport athlete when he joined the Talent Centre athlete performance development programme and was already destined for premature retirement due to injury. He plays volleyball and rugby in County programmes, is County Champion in Javelin and also plays club cricket but his training was inconsistent because he was repeatedly injured and the underlying structural problems that were contributing to his injuries were not being addressed. He went through his growth spurt shortly after his 13th birthday and as boys enter their main Window of Trainability for strength in the final stages of puberty, 12 to 18 months after the growth spurt, Sam was developing severe muscular imbalances because all his sports involved the repetitive use of his right arm and he was doing no compensatory training to strengthen his left side. He was storing up long term back and shoulder problems and was frustrated due to the amount of training time he missed due to frequent injuries. Twelve months of specialist coaching has reversed the imbalances and he is now able to train consistently. He hasn't specialised yet but when he does he'll definitely be ready for it.

Athlete mini-study – Performance improvement
Rhianna is a 14 year old trampolinist who was named as the non-travelling reserve for the 2009 World Age Group Championships. Between December and March this year she had 5 training injuries and 4 trips to the Emergency Department as she lacked the power required for more complex routines she needed to master to compete at this high standard. The fear of another accident had her on the verge of giving up when she joined the Talent Centre programme in April 2010. The impact of the strength and conditioning support has been dramatic. As an athlete with few underlying problems, she has been able to focus on performance development training. Her strength improved rapidly and her confidence in her ability to perform higher difficulty routines soared. Confidence restored, she subsequently achieved top 10 and top 5 rankings in both senior and age group national competitions.

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Functional Assessments - A coach's perspective
The other major initiative sponsored by the SW Talent Centre is "Transformational Coaching" a professional development programme for coaches one aim of which is to develop coaches who can work effectively in a multi-disciplinary team. All the coaches on the programme are asked to attend a functional screening with one of their athletes. This is one coach's story of what he learned from the process.

The Coach's Story

As a squash coach I have no contact with or access to sport support service practitioners. While I understood the benefits to the player of attending a functional screening I found it difficult to understand the worth of me attending these assessments. Having a full time job along with coaching for an additional 8 hours a week and doing tutoring meant attending a screening was one of the items that I initially felt was a low priority for me and I was struggling to move it high enough up my list of things to be done

When I finally was able to attend my view changed completely. This one hour session was then one of the most interesting CPD sessions I have ever done.

Being able to watch the many elements of the screening while having the reasoning behind it explained to both myself and the player and then being applied specifically to Squash was an enlightening experience. The results enabled me to understand the biomechanical reasons behind the player being unable to perform certain technical elements that I had initially attributed to co-ordination deficiencies. With my technical knowledge and the physio's scientific expertise working together; simple results were quickly achieved just from a series of basic stretching exercises.

From that one hour experience these sessions have moved up my list of priorities significantly and could have the potential to save time on court by correctly identifying underlying problems rather than trying to tackle an issue from the wrong direction. My knowledge in this area is still minimal but having the hands on experience of the potential impact it can have has provided me and the players with an extra weapon in our armoury.

Richard Colman
Squash Coach

