

Putting theory into practice: Strength and conditioning activities for children's coaches

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Ideas for designing and integrating simple strength and conditioning activities into training sessions. Too often a neglected area of coaching outside of elite sport, these practical exercises will help coaches create an effective environment in which to develop their participants' full range of physical attributes and core movement skills.

- **We are inarguably and unequivocally failing our children by continuing to under prioritise and undervalue the physical side of coaching.**
- **Developing children's athleticism – that is the physical qualities of strength, power, speed, mobility, agility, balance, coordination and endurance – has tremendous long-term benefits.**
- **Historically, the accepted industry practice was that strength training should be held back until participants reach adolescence but this view has shifted markedly.**
- **The quality of the warm-up can directly affect the quality of performance in the session.**

You are sat down at home, coffee in one hand, session plan in the other, giving it a final once over ahead of tomorrow's midweek training session.

Technical and tactical elements. Tick, tick. An exciting plethora of exercises and drills await that promise to engage and challenge in equal measure. Another chance, you muse, for your participants to master their skill-set, expand their tactical nous and hone their anticipation and perception.

Psycho-social. Tick. Or should that be tick, tick? Never let it be said that you overlook this crucial aspect of coaching. You are an advocate of autonomous learning and group problem solving and fully appreciate the importance of communication techniques to help promote self-regulation in a social environment conducive to learning.

And as for this week's session being [creative](#) and [fun](#). A resounding TICK!

Oh, nearly forgot the physical. Well, of course that goes without saying. The children will be running and sprinting most of the session after all and, following a bit of stretching to kick things off, the routine is always to get them to jog a lap of the pitch. So, duh! Tick.

Dereliction of duty?

This type of thinking is all too familiar to Professor [Kevin Till](#), who is a Professor in sports coaching at Leeds Beckett University and also works as Youth Academy strength and conditioning coach at Yorkshire Carnegie Rugby Union and Leeds Rhinos Rugby League clubs.

He believes the coaching sector is still a long way off delivering S&C training as standard practice – and an even longer way off delivering S&C exercises that are both adequate and appropriate to the participants' age and stage of physical development.

Talking of stages, Professor Till took the centre one at the iCoachKids International Conference held at Leeds Beckett's Headingley campus, where the theme was 'Developing Effective Environments for Children in Sport'.

After attending his classroom-based workshop on Talent Identification in Youth Sport on day one (which posed the question, 'Is it Appropriate and Healthy?') less than 24 hours later he had swapped lecture hall for sports hall, and suit for tracksuit as he prepared to put a group of local Primary School children through a series of S&C exercises aimed at developing their athletic motor skills.

He was joined by Dr Stacey Emmonds, senior lecturer in sports coaching at Leeds Beckett University and S&C coach at Doncaster Rovers FC and England Women's Rugby League, to deliver an observational workshop for delegates that showcased what a simple S&C session might look like for middle childhood participants of any sport.

Developmentally appropriate interventions

Before we explore the what, let us expand briefly on the why.

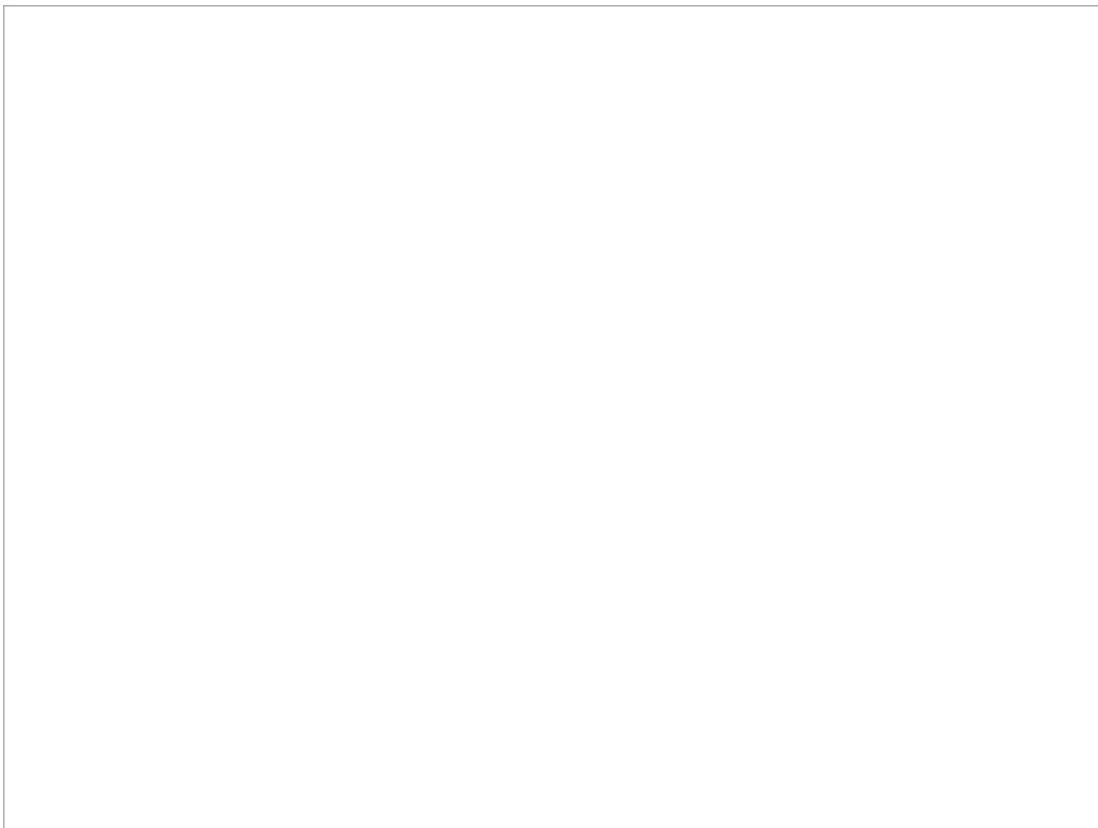
Developing children's athleticism – that is the physical qualities of power, speed, mobility, agility, balance, coordination and endurance – has tremendous long-term benefits.

Being able to perform a range of movements with precision and competence in a variety of situations and settings decreases the risk of sports-related injuries, increases enjoyment of sport and physical activity and helps to achieve optimal and sustained long-term athletic performance.

Historically, the accepted industry practice was that strength training should be held back until participants reach adolescence. It was considered developmentally inappropriate. But this view has shifted markedly.

In fact, latest evidence suggests that strength training should be treated as an integral part of the range of S&C interventions which collectively form a vital part of children and young people's athletic development – as set out in the Youth Physical Development Model (more on the model, devised by Cardiff Metropolitan University lecturers Dr Jon Oliver and Dr Rhodri Lloyd, [in this ConnectedCoaches blog](#)).





In terms of planning, integration and implementation of S&C activities, coaches should remember that the determining factor of what is delivered in a session should be the ability of an individual or group.

Simply put, individuals must be able to demonstrate the basics before they move on to more advanced techniques.

‘That means adolescent athletes who cannot demonstrate the fundamental movement skills required to further develop physical characteristics should not proceed with this process until competency is demonstrated,’ says Professor Till.

‘The ability to perform a body weight squat, for instance, should precede weight training to

develop lower body strength.’

Under starter’s orders

The age and ability level of the mixed group of local Primary School children Professor Till and Dr Emmonds were coaching demanded the exercises arranged for the session centred on developing control of body weight. Hypertrophy training, which is designed to increase the size of the muscles through loaded movements, was clearly not appropriate in this context.

Working on the proviso that the quality of the warm-up can directly affect the quality of performance in the session, Professor Till took the children through a whole range of age and stage appropriate S&C activities.

These ticked all the boxes in terms of developing the core movement skills that are intrinsic to developing athleticism while also serving to loosen up the muscles to establish an extended range of movement, increase body temperature and blood flow by raising the heart rate and provide mental focus ahead of more sport specific practice or competition.

Here is a detailed breakdown of the full session.

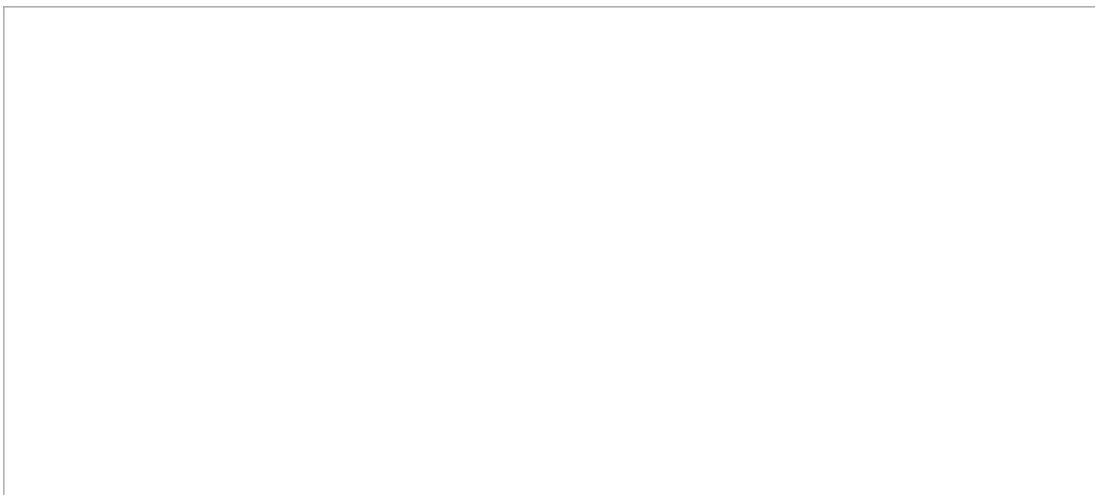
Activity 1:

As the children zig-zagged around the hall they were told to ‘high five’ their friends when they passed them. Over the course of the next ten minutes the instruction changed to ‘low fiving’ their friends, then on to high-fiving while skipping, jumping and running backwards, progressing to high knee raises, then finally, using their arms to get some extra height in a high knee run.

‘From a physical perspective, the focus was on multi-directional movement, locomotor movements [where the body travels through space from one location to another] lateral and backward movement, spatial and cognitive awareness and running mechanics,’ explained Professor Till.

In terms of instruction, the two coaches intervened only when necessary to ensure correct execution of the technique. So, for example, children were asked to ‘point their toes’ and shown the correct arm action during the high knee run, ‘ideally with your elbows raised to a 90 degree angle’.

Activity 2:



The squat, lunge and single leg balance. ‘In my experience this activity is not tried too much in a

children's environment,' explained Professor Till.

A child was asked to volunteer to demonstrate what a squat looked like. The coach fine-tuned their technique and praised what they were doing right. 'That's it, making sure to keep your feet flat on the floor and your arms straight out in front of you to help you balance. Keep your back straight. Imagine you are sitting down on a low seat.'

After completing 10 repetitions, the children gathered round for some feedback. Points raised by the coaches included: 'Keep your chest out and your feet pointing slightly outwards to help you with your balance and make sure you maintain a nice wide stance.' The children were told this exercise would strengthen their thigh muscles.

Following 10 more squats, the same process was followed to demonstrate a lunge (pictured). With the help of the coaches, the volunteer's technique was tweaked, and we heard the coaches ask: 'Why should you be keeping your body straight?'; 'Can you feel your calf being stretched?'; 'As you step up, push that floor away'.

Activity 3:

The push-up, where control is the goal. The warm-up workout had so far concentrated on major muscle groups in the lower body. This simple upper body exercise once again used the participant's own natural body weight as a conditioning tool.

After beginning from a starting position with elbows on the floor, and holding the position for 20 seconds, the children then attempted a full push-up, with hands flat on the floor. Ranging ability levels meant not every child could complete a push-up.

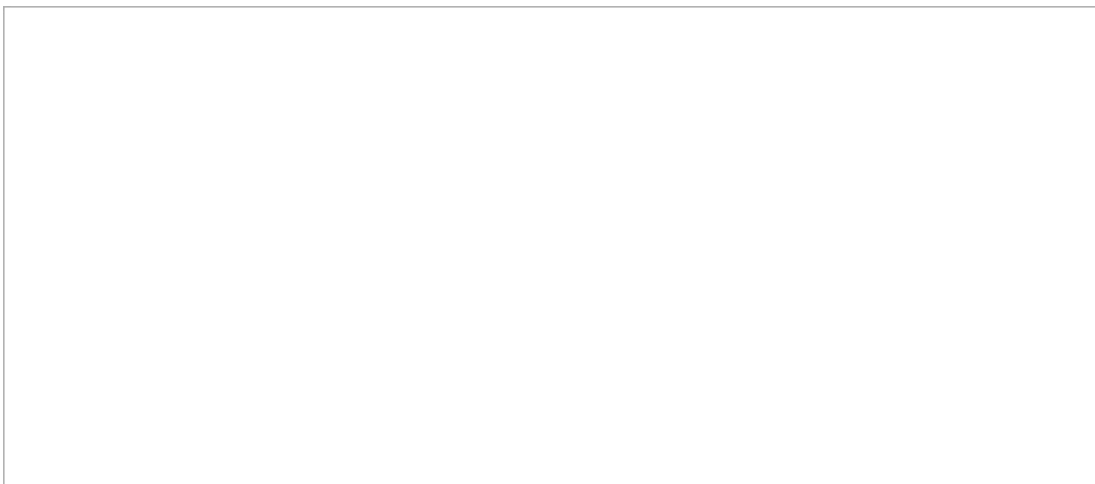
'What is important is that, whichever method is used, the child is able to maintain control of their own body weight,' Professor Till explained to watching delegates.


To ensure correct execution, children were told to keep a straight back and to get as close as they can to touching their nose on the floor.

The activity worked on developing upper body strength and core stability. Children found these movement patterns quite difficult in relation to trying to control their own body weight.

But as the saying goes, Rome wasn't built in a day. It takes time to build physical strength. You just have to remember to keep laying the bricks one day at a time.

Activity 4:





The hall took on the sights and sounds of a zoo as all the techniques were put together in a fun exercise where the children were allowed to ‘express themselves’.

‘Pretend you are a gorilla. How do they squat down and walk around?’ asked Professor Till. No direction for vocal accompaniment was needed as the air was immediately filled with gorilla noises. ‘That’s it, remember knees nice and low and pointed out, chest pumped out too.’

In the minutes that followed the children balanced on one leg like a flamingo – ‘Now flap your wings. Now change legs’ – and crawled like a bear, where both arms and legs were used to propel themselves across the floor at varying speeds and levels of success.

Fun, age appropriate movement patterns and core stability exercises, with the tick-list of fundamental movement skills completed in the session now amounting to run, skip, bound, jump, hop, squat, lunge, step up, jump and land, hop and land; lateral, backwards, diagonal and combination movement; mobile use of ankle, hip, arms and shoulder; upper body horizontal push; reaction speed, evasion and dodging.

Activity 5:

Moving swiftly onwards... to speed work that focused on acceleration, deceleration and reacceleration and developing agility levels through rapid changes of direction, which involved more intricate biomechanics such as cutting and turning at pace.

These techniques were incorporated into series of relay contests, with the children divided into three groups.

The games grew in intensity. So what began with one member of the group dropping a tennis ball with an outstretched arm while a team-mate was stood a few metres away, poised to push off on their dominant leg to collect (what about alternating with the weaker leg, came a suggestion from the audience), developed into a race to gather the bouncing ball from 10 metres away while balancing in anticipation in a push-up position on the floor. ‘Push off with your front leg. Pump your arms. As fast as you can.’

Traditional relay races followed, with different coloured cones spread at five-metre intervals along the width of the hall. The coaches called out a series of colours, ‘blue, red, green’ and the children had to race to each one, crouching to touch with their fingertips and turn on a sixpence before heading back to the start line to tag and release their team-mate.

An assault course was set up as a finale to the session, with mini hurdles, landing mats and gymnastic blocks set up, with the express mission for children to go out and enjoy themselves and explore the different movements they had been practising.

Beware the fundamental flaw

It’s not rocket science and yet such straightforward and often overlooked strength and conditioning activities provide a terrific boost to children’s long-term athletic development.

We are inarguably and unequivocally failing our children by continuing to under prioritise and undervalue the physical side of coaching.

It can simply slip through the cracks. It's easily done. But a child development framework that is strong on social, emotional, psychological, technical and tactical aspects remains incomplete... and the cracks *will* show over time.

By way of analogy, think of another development project that has been years in the making, born out of similar dedication and apparent attention to detail.

The technical drawings were meticulous when you decided you wanted to build your own house. You applaud yourself for getting your tactics right by choosing the perfect location in a neighbourhood where you know you will be happy, with friends and family in close proximity – the promise of fun times, and an emotional support blanket right on your doorstep. You are sure you will thrive here. You have concocted the complete package. Much later you realise you have made one cardinal error. You cut a corner at the start of the project and didn't build the house on solid foundations. Now the cracks have begun to appear, threatening to bring everything crashing down. It seems likely you will pay a heavy price for that fundamental oversight.

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Next Steps

UK Coaching's practical '[How to Coach the Fundamentals of Movement](#)' workshop integrates the Youth Physical Development Model mentioned in this blog, where you will learn how to teach fundamental movement skills (FMS) in order to develop physical literacy – key to nurturing healthy and active lifestyles.

Organisations: Find out more about how to organise the UK Coaching '[How to Coach the Fundamentals of Movement](#)' workshop.

Coaches: To find a '[How to Coach the Fundamentals of Movement](#)' workshop running near you, visit the [UK Coaching Website](#).

Further reading

[Revolutionary research inspires new approach to coaching Fundamentals of Movement](#)

[Is the coaching sector failing to provide athletes with basic conditioning training?](#)

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