STRENGTH AND CONDITIONING ROUNDTABLE

What is the potential for extending strength and conditioning to the general population?

20th April 2017
On 20th April 2017 the leading wellness solutions company, Technogym, brought together a group of expert practitioners for a roundtable discussion on the role of strength and conditioning (S&C) in elite sport, and the transferability of its benefits to the general population.

The first half of the conversation examined what the group meant by S&C, the trends that attendees saw in S&C and how they measured its effectiveness.

The second half of the discussion focused more explicitly on how S&C can be applied across the general population, specifically: which population groups can take up S&C, the barriers that stand in the way of this happening, and ideas on how to build more engagement.

This paper documents the discussion and sums up the group’s conclusions. The aim is to put more focus on this issue and share expert opinion that can inform future initiatives.

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FOREWORD

The strength and conditioning industry is growing and growing fast with 1000’s of graduates qualifying each year in their respective fields. This is coupled with a drastic increase in the accessibility of high-end services, which are popping up all over the UK.

With this expansion in training provision, traditional weightlifting and resistance training for health purposes, not just performance outcomes, is becoming apparent. Previous successes in the 2012 and 2016 Olympics have seen more and more people want to train like the pros do, which is having a hugely positive effect on the growth of strength and conditioning within the industry. The recent social media boom means collaboration with specialists all over the world is becoming more readily available, something which I have not seen to the same extent in any other industry.

What is even better is that interdisciplinary departments, more so than ever, are working together to assist in client service provision. Therefore, ensuring that we look constantly beyond our own individual programming biases to provide a forever-growing client centred approach is brilliant. With this, coaches are willing to learn from their mistakes and take on board criticism to enhance their ability to provide a bespoke service to clients and athletes. As such, the Technogym roundtable discussion group was, and is, a fantastic platform for practitioners around the country to make a meaningful contribution to pertinent issues for health and fitness improvement strategies. For Technogym to provide such insightful and meaningful days for experienced delegates to meet and discuss current methods pertaining to S&C/health improvement has and will continue to assist in providing an exceptional client focused service.

Signed

Sam Applebee
INTRODUCTION TO THE ROUNDTABLE

On 20th April 2017 a group of expert practitioners met at Technogym’s UK headquarters to discuss strength and conditioning (S&C) and explore, first of all, what S&C looks like when delivered to elite athletes, and then its relevance to the wider population.

The group’s second conversation focused on how S&C programming can be transferred to the general population, bridging the gap between performance-focused, strength-based training for elite athletes and its inclusion in daily wellness and lifestyle training for all.

The event provided a forum for S&C experts from a range of backgrounds to share their experiences and knowledge. The discussion demonstrated that although the participants come from different places on the S&C spectrum, there was nevertheless a high degree of consensus on how S&C should be delivered and its potential value to the general population. The group’s discussions are summarised here.
PART ONE: S&C PRACTICE IN THE CONTEXT OF ELITE ATHLETES AND ITS APPLICABILITY TO THE WIDER POPULATION

What is S&C?
To begin, the group was asked to define ‘strength and conditioning’. One participant offered: “a means of enhancing or improving physical development”. Another interpretation was: “it’s about plugging weak links”. A third thought S&C was: “a physical programme tailored to the individual”.

Meanwhile the UK Strength and Conditioning Association (UKSCA) explains S&C as: "The specialist area encompassing the physical preparation of athletes for performance in sport, while aiming to prevent or minimise the risk of injury. It includes processes that result in physical adaptation."

What are the trends in S&C?
The group discussed what it sees as the key trends in S&C. These include:

- **CrossFit**: All the participants agreed that the CrossFit approach is booming, probably because it is perceived to be very effective. Indeed, while formal research into many aspects of CrossFit is still quite limited, such findings as there are show generally positive physical benefits. ¹

- **Physique and aesthetics**: One participant noted “an obsession with physique and aesthetics, especially on social media”. He added: “For the general population it is not about performance.”

- **Education**: while everyone accepted that people are still selling ‘quick fix’ programmes – for example, ‘Get shredded in 12 weeks’ – there is a growing trend around educating people on why they are exercising. One participant noted, “When I started as a PT (personal trainer), there was no ‘why’”. Now, however, the group felt that the trend is to take the individual into account and build tailored exercise programmes, which include letting them understand why they are doing what they do.

Group members noted that while ‘even elite guys think there is a magic bullet’, coaches are spending increasing amounts of time on ‘why’, and training with a purpose. One participant said, “People need to understand the big picture.” Another said, “Our tennis players are away for the whole of April, so we give them the ‘why’ so that they remain engaged while they’re away.” Another noted that he sends articles to people on mind-set and motivation.

¹ For a summary of recent research on the impact of CrossFit, see: Evidence-based practice: crossfit training by Dr Mark McKean PhD AEP CSCS at: http://www.fitnessnetwork.com.au/resources-library/evidence-based-practice-crossfit-training
The new trend towards education is seen as an important way to create sustained buy-in. "People need education and needs analysis, so that they can perform to their ability," concluded one participant. “I need to know the intention of the workout. What I’m doing and why,” added another.

**Goal-setting:** Alongside education, group members also spoke about the value of setting goals. "We have sport goals with S&C goals within that," said one participant. “It’s been really powerful. You get buy-in which is reinforced when we win.”

**What evidence is demonstrating the effectiveness of S&C?**
Participants felt that, especially with regard to CrossFit, there is a large body of personal experience which evidences effectiveness. Someone also mentioned the ‘CrossFit Open’ which is: ‘looking to find the fittest person on the planet by division.’ It enables people to complete the same set workout and then measure themselves against others.

More specifically, as a strength and conditioning programme, CrossFit relies on testing everything, every day. Typical parameters are bone density, muscle mass, blood pressure and body fat percentage. These parameters are continually communicated within the community.

In addition, technology is deployed to provide evidence. One participant described his use of ‘zone belts’ or heart rate sensors. “I give points based on heartbeats”, he explained. “I can go in and see the evidence that people have been putting in the effort, so they feel they are being properly coached.”

It was also noted that it’s important to fit the evidence measurement to the individual. For some, the measure will be using progress photos. However, for others, who are not motivated by aesthetics, it will be a different measure. The important thing is to understand the individual’s goals.

Another participant mentioned HRV (Heart Rate Variability) measures and QRS complexes (from the Q, R and S waves on an electrocardiogram). “This sort of data is telling you whether you should do strength today, or speed, or endurance. It helps tell you where the effort should go in.”

Someone else noted that this measure is expensive, and it goes back to needs analysis. “S&C effectiveness,” he said, “has to be relevant to what it is you want to achieve.”

Another group member was less interested in data. “I keep it simple,” he said. This participant viewed wellness and fitness as progress away from a state of ill-health and increased health risks towards a fit, healthy, active lifestyle that benefits both body and mind.

Another group member agreed that while he uses numbers to support what he does, he also uses the ‘eyeball test’. “I look at someone to assess their tiredness, their mood state, their wellness and motivation. I use a coaching eye,” he said.
For other group members, though, numbers are important because of the need to build a business case. “For the general population, you need evidence that these improvements happen,” said one. In another sector it was noted that ‘performance markers, outcome measurements and batteries of tests’ such as strength and range of movement were necessary to evidence progress.

The group reported that yet another parameter that’s being measured more and more is sleep. It was noted that sleep has become very important in the sports world and that monitoring changes in sleep patterns reveal how it can make a massive difference to performance. Moreover, once people start measuring sleep, behaviours start changing. For example, people start ‘disconnecting from the world’ at 9pm instead of at 11pm.

However, it was noted that in the context of the wider population, strength and conditioning is still in its infancy in terms of demonstrating that people live longer or achieve better health because of it. Therefore, more proof is needed to accelerate its adoption across a wider population.

What is the role of technology and social media?
A final conversation in part one of the roundtable was on technology’s role in S&C, and in particular the role of social media.

Participants noted that:

- Technology can be hugely helpful, for example using videos as a coaching tool. However it’s important to give the right information, to the right person, in the right way.

- Too much technology can easily lead to data overload. There is a need to pull all the data together (how much sleep, how many miles run and so on) into one ‘wellness place’ for the individual. Apps which do that have already been developed and are improving.

- Social media has become a big influencer but can be a massive negative, such as the fixation on idealized ‘selfies’; and a lot of poor-quality advice.

- However, social media can be powerful when good quality, honest advice is given. One participant said, “If we know stuff, we should go on Twitter and put it out there”. Joe Wicks (thebodycoach.com) was cited as ‘an incredible success’.

- Twitter can also be a great source of information. “I use Twitter to follow a bunch of credible people,” said one participant, “Twitter is great for that.”
PART TWO: EXTENDING S&C PROGRAMMING TO A WIDER POPULATION

**Where does S&C fit in for the general population?**
When it comes to the general population, the group acknowledged that the first task is to get people to be more active. After all, the majority of people do not, in fact, go to the gym or take regular exercise. Campaigns have been run, such as Let’s Move for a Better World\(^2\), which try to change behaviours. It was felt that these initiatives gather useful data and do help motivate people to move more.

It was also noted that a lot can be done in the workplace and that companies were increasingly likely to run corporate wellness programmes. On that note, one participant talked about the big impact that data which demonstrates reductions in sickness rates can have on organisations. “Once we can really quantify that impact,” he said, “we will be able to really make it [S&C] go through the roof.”

The group also firmly believed that there is no section of the general population that can’t participate in S&C. Participants cited examples of different groups of people they knew who were doing S&C:

- “We have 15 to 65-year-old women weightlifters.”
- “We get 70-year-olds in the box to experience it.”
- “We’ve got 15-year-olds doing CrossFit Kids and we’ve got seniors.”

It was also noted that S&C is appropriate at every stage of the wellness curve, for instance before and after surgery. One participant observed: “You should get pre-op exercises that put you in a better place to recover. And after an operation there is a 6 to 10 per cent loss of strength per week and then secondary complications from resting. Therefore you need loading as soon as possible.”

“There is a place for everyone to do strength and conditioning,” concluded another participant, “but a lot of people are scared to find that place.” Indeed it was noted that while the minority who participate in S&C are getting stronger and fitter, the majority ‘is being left behind’. Why this is happening was the subject of the next discussion.

**Factors inhibiting S&C delivery in the wider population**
The group felt that gyms don’t always take the opportunities available to them to deliver high quality S&C programming. For one thing, they may not be adequately resourced. One participant noted: “They might have one strength and conditioning coach to 1,000 members, which isn’t enough because people do need to be taught how to do it.”

\(^2\) Let’s Move for a Better World is a global public health challenge created by Technogym, across 26 countries. The campaign encourages gym participation and promotes physical activity to fight sedentary lifestyles and reduce the harms associated with inactivity. See: http://www.technogym.com/land/en/lets-move-2017/
Also in the budget gym world, in particular, individual members aren’t always the focus of much attention once they’ve paid their subscription. And the individuals themselves often don’t seek more guidance. “Ninety per cent of people just jump on a treadmill and press quick start,” said a participant.

The group also identified that PT education was sometimes lacking and the quality of personal trainers and coaches was variable. It was noted that sometimes their training is too brief – especially when people get online accreditations. This means that for instance they don’t know as much as they should about injury prevention. One participant said: “I know a lot of coaches I wouldn’t have confidence in.”

PTs can also be resistant to changing their point of view, and some don’t support putting S&C training programmes online, as they fear it will take business away from them. “It can also be difficult telling people how to do their job in their place of work,” said a participant. Especially because many PTs are ‘ego driven alpha males’. “We need to educate and inspire people in the right environment and get them out of the rut of their own philosophy, because PTs can get very fixed in their thinking, and put up a lot of barriers,” added another. “They need to be more humble and willing to listen and learn.”

On the topic of learning, equipment suppliers can play an important role in helping to educate and train gym staff to get the best from the equipment; the best results for clients; and the best education for themselves. To that end Technogym holds free workshops throughout the year and gyms should ask their suppliers for this support.

Beyond gyms, there is a lack of joined-up thinking about keeping people well once they have been rehabilitated by S&C. People very often struggle to maintain activity once their rehabilitation is over. One reason is that often insurance will pay for a physio, but not a gym membership. Another is that strength and conditioning coaches are ‘scared’ of people who have been sick or injured. A third reason is that people struggle to make the psychological adjustment from being a patient in receipt of treatment, to someone who has agency and can start working out for themselves. They are not confident to ‘load’ (i.e. work with increasing weights to develop strength).

In this regard it’s helpful to move S&C ‘rehab’ out of the physio room and into the open gym environment. It might also be useful to integrate physios and chiropractors into the mainstream gym, rather than have them always operate in a separate area where ‘treatment’ happens.

Finally, the group felt that a large proportion of the population has never seen the inside of a gym and is daunted by the whole idea of S&C. This happens for a number of reasons, including that there is a lot of misinformation that discourages people. For example, “A lot of people feel it is too late, or that they are too unfit to go to a gym,” said one participant.
There is also an idea that S&C can be harmful, specifically that weightlifting can be unsafe, or that it has a high injury rate. “When actually boxing is the 57th most dangerous sport,” one participant noted, “and the most dangerous sports from an MSK (musculoskeletal) perspective are three-day eventing and netball.”

Women are concerned, according to one participant, that they will get overly muscular if they use weights. “If only gaining mass was so simple!” said the group. Men are concerned that there is a ‘standard’ of muscularity – promoted in certain kinds of ‘superhero’ movie – that ought to be attained through S&C, whereas in fact, as one participant put it, “People just need to move around more, eat well and be happy.”

Even medical professionals are sometimes guilty of spreading misinformation about what people can and can’t achieve with S&C. “Consultants may sometimes lay down what they think will be possible and not possible, but actually they need to be less blinkered and keep up to date with current thinking.” In addition, contrary to a large body of evidence, people continue to believe that ‘a bad back’ is best treated by rest, whereas the opposite is true.

“It comes back to education,” concluded a participant. “If you ask people what strength means, no one mentions power to weight ratio. It’s actually not about being Geoff Capes. You can be strong in your own right.”

How can we get the general population to engage with S&C?
In the last conversation of the day, the group was encouraged to share ideas on how S&C can be opened up to a wider population. The following points were raised.

- **Community culture**: The group felt strongly that a central attribute of S&C is the sense of community that it can create. It was said that where a positive and motivated S&C community is created, ‘skills and training go through the roof’. This sense of community contrasts quite starkly with the usual gym model, where everyone wears headphones and people don’t speak to each other. It may make S&C more appealing to a wider population. As one participant put it: “A lot of people have never experienced that, or haven’t felt it since they left school. People need a tribe to belong to, and with that community they would get so much from doing S&C.”

- **Inclusiveness**: As noted – everyone can do S&C. Moreover there is also the capacity to meet the needs of ‘all-comers’ – for instance gyms are often very quiet during the working day and therefore can accommodate older people, for example.

- **Goalsetting**: It was thought that setting goals can be as relevant and useful for the general population as it is for elite athletes. Too often, even people who go to the gym are just ‘going through the motions’ without intent and without pushing themselves. Setting S&C goals can be a powerful way of helping people make progress to higher levels of fitness.
- **Individuality:** An important facet of S&C is that programmes can and should be tailored to the individual's need and capacity. People will engage with S&C said one participant, if we make S&C personal to them. Moreover, the 'digital revolution' in training means that very detailed, personalised programmes are easily created.

- **Education:** This was a recurring theme throughout the day. It was felt that the general population would engage more if it had more information about the realities of doing so. Moreover, the group thought that for the general population, information has to be communicated in digestible formats. As one participant put it: “They don’t want to read journal articles. We should use infographics on the wall of the gym for instance.”

- **Integration:** Finally, the group felt that more S&C should be integrated into youth systems, because children have so much physical capacity to acquire skills. If children started sooner, they could develop further and achieve more. One participant noted that a lot of private schools are now introducing S&C, and that some have better facilities than professional sports teams. The right people with the right work ethic should engage the young early in S&C and establish habits that will last a lifetime.
The group’s discussion underlined that S&C definitely has a big role to play in helping the general population become more active and fitter.

What stands in the way are barriers that boil down to a lack of education and understanding – both on the part of the potential delivery agents (personal trainers); and within the general population, where people on the whole don’t understand S&C and believe the myths: that it’s about building muscles, it’s dangerous, it’s only for those who are young and already fit, and so on.

The way forward calls for more and better education about what S&C entails. This should counteract misinformation and contribute to building a positive exercise culture across a far wider demographic.
QUESTIONS FOR THE READER TO CONSIDER

1. Do I have a clear, accurate understanding of what current best practice in S&C looks like?
2. What efforts do I make to ensure my understanding and practice remain up to date?
3. What role can I play in ensuring that accurate and helpful information about S&C is more widely communicated?
4. Does my organisation have strategic goals in relation to S&C?
5. Does my organisation have a clear idea of which population groups it can target for S&C delivery?
6. How can we measure people’s understanding of S&C?
7. How can we measure the impact of S&C on people’s lives?
8. Do we understand the factors that motivate and demotivate people in relation to S&C?
9. What single thing can we do better that will help us reach our goals in relation to S&C?
10. What measurement tools are we putting in place to track progress?

FURTHER READING

- For background on general PA benefits: https://gpcpd.walesdeanery.org/index.php/