Ask the Experts


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From strength training to stretching to foot-strike, John Foster, Physiotherapist and Neil Welch, Strength & Conditioning Coach, of the Sports Surgery Clinic offer up their professional advice.

Will strength training help my running?
Those of you who have read Alberto Salazar's comments on Mo Farah and Galen Rupp's training will no doubt have taken note of his mention of strength training. The answer, in short, is yes, it will. Strength training will improve your ability to produce and absorb force, enable you to maintain correct form and technique and reduce your chances of injury.

As a general rule you are looking for as much crossover between your strength work and your running as possible. Single leg exercises such as split squats or step-ups allow increases in strength while having to use ranges of motion and movements similar to running. As for the kind of sets and reps you should be using, aim for shorter sets of 3-6. Heavier weights increase strength more effectively than longer sets of lighter weights. The most important point is to complete the movement, keeping good form with rapid movement.

Is plyometric training good for distance running?
Plyometric training covers a broad group of exercises. Basically it means exercises using some kind of a rebound; running is actually a form of plyometric exercise. We can use higher-loaded exercises to improve that rebound and make a more efficient runner. I like to group the exercises into short and long ground contact and use them depending on the sport.

For distance running, the aim is to apply force to the ground as quickly as possible, not to produce the highest force possible as in a high jump. Because of the shorter contact required, exercises like drop jumps (dropping off a low box and jumping straight off the ground as fast as possible) are good for this. Plyometric exercises should be done non-fatigued with plenty of rest and shorter sets of 3-8 focusing on movement quality. The high loads involved in this type of training mean that supervision from a strength and conditioning coach is preferred as there is a greater risk of injury.

At what age is it safe to start training in the gym?
I will get straight to the point here; there is no cut-off age for safety as regards training. A qualified strength and conditioning coach should be well able to coach pre-adolescent, adolescent and youth athletes safely. There is a myth that delayed growth should be a reason for avoiding strength training; there is no scientific evidence that this is the case. In any case, coaches will generally not be looking to start heavy strength training but will aim to improve and increase the athlete's 'movement vocabulary' or ability to move well.

This will involve jumping, landing, pushing, pulling, squatting and lunging-based movements in multiple directions. Only once these movements have been optimised would a strength and conditioning coach, generally, seek to add weights to increase strength. This type of training will improve the young athlete's performance and reduce injury risk, which is greater when playing sport than training in a gym.

> *"Overstretched tissues are a key component of many runners' ailments*

Should I adopt a Midfoot Strike Pattern?
Over the last few years we have seen an increasing number of runners adopt a mid-foot strike pattern. This stems from the belief that the natural way our ancestors ran when they were shoeless was on the forefoot or mid-foot. Several researchers also showed that a mid-foot strike was good for certain injuries. Recent studies, however, have since shown that the majority of habitually barefoot people still land with a heel strike unless sprinting. A midfoot strike is good in certain injury conditions and a heel strike in others.

We have major success with Anterior Compartment Syndrome with changing to a midfoot strike but in others such as Achilles tendinopathy this can often aggravate the condition. Sometimes we have even seen stress fractures develop in the foot as a result. The best advice I can give is to transition SLOWLY. While I tend to advise against an extreme heel strike, there is nothing wrong with a slight heel strike and if it isn't broken, I don't fix it.

Should I increase my step rate?
There is a common myth that we should aim for 180 steps per minute when running. This originated from the work of distance running coach Jack Daniels. In the 1980s he analysed the stride rates of several elite athletes and determined that most took about 180 steps per minute.

However, this figure was recorded only during racing and for some reason has been promoted for non-race situations by non-elite athletes. A small increase in step rate makes good biomechanical sense from an injury point of view, due to lower rotational and impact forces, but for the majority of us an increase of only 5-10% is sufficient. In practice this is much more achievable, as large increases normally result in excess fatigue and initially poor running economy. Anecdotally, some of our elite athletes report improved running economy after small cadence increases after 6-8 weeks.

Should I stretch?
My patients know I am not a big fan of stretching for the sake of stretching. If I think reduced ankle or hip mobility is causing a problem then we address this with specific mobility exercises. Stretching often causes a reduction in muscle tension, but this tension is required for joint protection and propulsion.

We know the immediate effect of stretching is a reduction in muscle strength and it is this reduction in strength that often leads to problems. Too often I see runners with overstretched, sore calf muscles continuing to stretch in the mistaken belief this will cure their ills. Overstretched tissues are a key component of many runners' ailments and this becomes obvious on slow-motion video capture. Many of the strategies we employ are actually to stiffen the lower limbs, including step-rate modification, visualisation and runner-specific resistance training. The legs are like springs; don't overstretch them!