



FITNESS FIX

With many new year resolutions revolving around getting fitter, Duncan Busby looks at how to improve your overall fitness in ways that will benefit your archery

As we begin the New Year most of us will turn our attention to our fitness and health, since improving these particular aspects of ourselves can often give us a feeling of rejuvenation. This is especially welcome when we want to leave any disappointments of the previous year behind us and make a fresh start, but will improving your physical condition really improve your archery performance, too?

Now, archery is not often seen as a sport that requires high levels of fitness or even good health since it's a sport for all; whether young or old, able bodied or disabled, archers of every classification can find success. But you should still eat well and keep fit in ways that fuel your body and reinforce good shooting practices, so how can you go about improving your archery fitness?

DIET

Ask any internationally successful archer how they stay in peak physical condition and I'm sure you'd get a vast range of responses. From intense gym workouts, daily training regimes, clean eating or even fast food diets everyone has a different way of maintaining their performance.

We all know that a low body fat percentage and ripping muscles are not necessary in archery –

after all, this sport does not have the same aerobic challenges as, say, swimming, so you won't need to begin the new year by eating endless salads and protein shakes. But small changes in your food choices can make a difference, and although you can get away with a McDonalds and pizza diet (and some archers do) you will find it has very few benefits.

As a sport, archery is considered a moderate fitness activity: the chart below should give you an idea of the energy you'll use when shooting. Though archery is an enjoyable way to burn calories, you'll need to shoot for nearly an hour to work off one Snickers chocolate bar. So a high fat and sugar diet is probably not going to help your performance in the long-term, especially in a sport that requires a steady aim and hours of stamina.

It can be a challenge for archers to support but not over-support their training or competition activities and nutrient-dense, but not energy-

dense, foods are ideal to snack on. Sustaining blood glucose levels and fuelling the brain is the key to this sport, so put down the Haribo and choose cereal bars, bananas, yoghurts and shakes as good snacking options instead.

Even archers wishing to increase their strength though muscle mass should be aware of over-indulging on carbohydrates and protein, as many athletes with high energy needs are surprised to find they actually consume less than they think. Eating more frequently rather than massively increasing the amount you eat is far more effective for your performance. Consuming even excessive quantities of beneficial protein and carbohydrate will still result in weight gain if you don't use this energy up.

Protein powders and bars are extremely popular these days, and though these options claim to provide you with pure energy, archers should be aware that many of these products aren't scientifically tested, they can be expensive

ESTIMATED ENERGY BURNED DURING ARCHERY FOR A 70 KG (11 STONES OR 154 LBS) PERSON

TIME (MINS)	5	10	15	30	60	120	180	240
CALORIES	24	49	74	147	294	588	882	1176



STRETCHING IMPROVES FLEXIBILITY AND THE ABILITY OF A JOINT TO MOVE THROUGH ITS FULL RANGE OF MOTION

and they can provide you with more energy than you actually need. So if you choose to use them they should be consumed in place of rather than alongside other food choices. Additionally, if you compete in drugs tested competitions you should also be aware that some sports supplements may not be clean, so use them with caution.

Fluid losses during training and competition are generally not high either, so sipping fluid between ends should be adequate to replace any losses. However, high sugar sports drinks should be limited as excessive consumption can also contribute to an unnecessary intake of energy, not to mention a spike and subsequent dip in glucose levels, which can leave you feeling weak, tired and lacking in concentration.

EXERCISE

Since archery is largely skill-based, and as such doesn't select for a particular body type, strength, concentration, accuracy and consistency are often seen as more important virtues in an archer

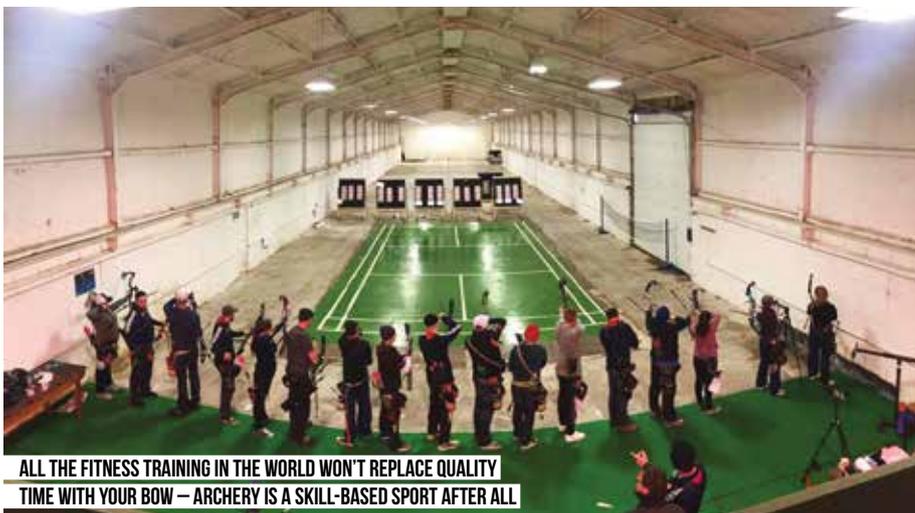
than aerobic endurance. But different disciplines of archery require different levels of fitness; for instance, archers competing in extreme field archery tournaments such as the European Pro-Archery Series, who face miles of punishing courses and severe target angles, will need a lot of strength and resilience to get through each event, whereas club archers who enjoy practicing with friends in a relaxed environment may find they need only moderate levels of fitness and stamina. Every archer has different priorities and we don't all need to be the same, but it's important that your body allows you to shoot whichever discipline and bow style you choose. Physical training can benefit us all though and many professional archers are choosing to work out to improve their performance. As their scores go up and records are broken it's clear that physical fitness is an important part of their success, but you don't need to hit the gym for hours on end; just doing a few choice exercises can still give you a boost.

Fitness: If exercise were a pill, it would be one of the most cost-effective drugs ever invented. Research shows that physical activity can boost self-esteem, mood, sleep quality and energy, as well as reducing your risk of stress and depression. As a result, a boost in fitness may in turn increase your enjoyment of archery and improve your scores too, because the more you do, the more you'll be able to do.

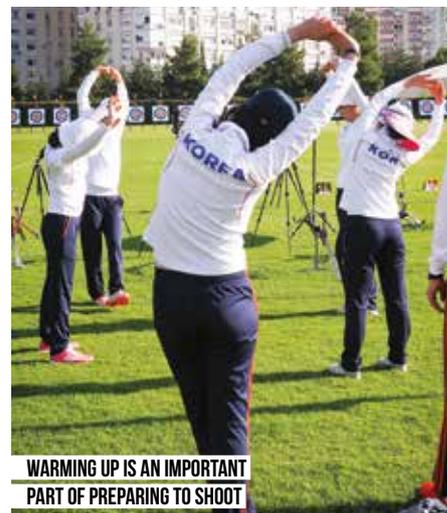
It's recommended that we should try to be active daily and aim to achieve at least 150 minutes of exercise over a week. For most of us the easiest way to get moving is to take part in everyday activities such as walking or cycling, instead of using the car or public transport. But to benefit your health you need to be moving quick enough to raise your heart rate, breathe faster and feel warmer.

Aerobic or cardio exercises can be low, moderate or high in intensity, but the fitness activities you choose will depend on the discipline of archery you do, as well as your own individual circumstances. For example, if you are in your 70s you're unlikely to want to take part in marathons or Tough Mudder challenges to improve your health, but then you're also unlikely to compete in some of the more extreme archery competitions either. So tailor your workouts to the demands of your shooting, and even if you have a disability there is always some way you can get active; gardening, household chores or dancing are good ways for us all to improve our fitness this upcoming season.

Strength: Archery requires a certain amount of strength; after all, if you can't pull your bow back repeatedly you're not going to get very far. Now, you don't need to look like Arnold Schwarzenegger to shoot well – on the contrary, muscles that are too large may impede your form. But you need to be able to draw your bow and hold steady, then repeat each shot at least 72 times at an outdoor 720 tournament and 60 times on an indoor round, and that's not



ALL THE FITNESS TRAINING IN THE WORLD WON'T REPLACE QUALITY TIME WITH YOUR BOW – ARCHERY IS A SKILL-BASED SPORT AFTER ALL



WARMING UP IS AN IMPORTANT PART OF PREPARING TO SHOOT



RESISTANCE BANDS ARE A GREAT WAY TO WARM UP THE RIGHT MUSCLES

SUSTAINING BLOOD GLUCOSE LEVELS AND FUELLING THE BRAIN IS THE KEY TO THIS SPORT

including any practice arrows or head-or-head matches you shoot.

Anaerobic or strength exercises are important for your everyday health too, as they improve your stamina, your posture, reduce aches and pains and lower your risk of injury, so there's no need to think these exercises should be confined to elite athletes.

Resistance training exercises are recommended for archers who want to develop the areas of their body actively involved in shooting, such as the back, shoulder and chest muscles (used to draw the bow) and arm muscles (used to hold the bow). You should find that with a little time and effort your scores will improve as your muscles get stronger.

Field archers may also find increased muscle strength of benefit, particularly around courses that don't allow them to shoot with their body in alignment. Contending with uneven footings and acute target angles will require more strength than other disciplines and your core and upper body strength is the key to shooting well under these conditions.

We don't all need to go down to the gym to lift weights, those of you with limitations or who have no need for super-human ability can improve your own strength by doing gentle exercises such as yoga, Pilates, swimming or in fact any exercise that uses your own body weight. There are so many ways to improve your shooting and your health by increasing your strength, but to get any health benefits you should do them to the point where you struggle to complete another repetition. And remember,

these exercises are in addition to any cardio activities.

Flexibility: Stretching before exercise is a common practice, we're told that it reduces your risk of injury, improves your performance and prevents sore muscles, but new research suggests that it's not as effective as we're all led to believe. Stretching before exercise can make your muscles weaker and slower, so unlike ballet dancers whose performance may not be affected by this, archers will instead benefit more from warming up their cold muscles first by doing light aerobic exercises. For instance, using a training band to encourage blood flow into your arm muscles, or rotating your arms to loosen up your back muscles.

Stretching improves flexibility, which increases the ability of a joint to move through its full range of motion; in other words, how far it can bend, twist and reach. It's much more effective for you to stretch after exercise, once your muscles are warm and flexible.

Flexibility is vital in archery; any tightness may affect your accuracy and increase your risk of injury, so it's important that you focus on this area of exercise. Regular stretching is thought to increase flexibility, both by making muscles suppler and by retraining the nervous system to tolerate stretching further. And as flexibility from regular stretching gradually disappears once you stop, typically after four weeks, you'll need to keep these exercises up.

There are four different forms of stretching:

- Static stretch: stretching a muscle to the point of mild discomfort and holding that position,

typically for at least 30 seconds or longer, by using a training or stretching band.

- Proprioceptive neuromuscular facilitation (PNF): involves holding a stretch while contracting and relaxing the muscle.
- Dynamic stretch: performing gentle repetitive movements, such as arm swings, where you gradually increase the range of motion of the movement, but always remains within the normal range of motion.
- Ballistic or bouncing stretches: involves going into a stretch and performing bouncing or jerking movements to increase range of motion.

Again, your flexibility demands are dependent on the activities you do and if you take part in only occasional gentle shooting you will need only minimal flexibility.

Alternatively, Specific Physical Training or SPT, was developed by world renowned archery coach Kisik Lee to increase Olympic athletes' endurance, strength and flexibility through archery-specific muscle exercises using only archery equipment. Although these exercises are recommended for recurve archers, they have limited use for compound and traditional shooters. So remember to choose exercises that suit both your bow and your body.

Physical training and a healthy diet cannot replace practice with your bow; after all, you need more than just strength and energy to shoot well. Although healthy eating and exercise is only a supplement to your archery fitness, the feel-good factor each can create can be of enormous benefit to your mental game as well as your overall health.

So whether you want to improve your shooting in practice, leagues or competitions there is no reason not to improve your health and fitness too. After all, you may end up finding enjoyment and success in more than just your shooting. ☺