

GB SOFTBALL

SPORTS SCIENCE POLICIES

SECTION 1: NUTRITION GUIDELINES

This section contains basic information and recommendations on primary topics in sports nutrition related to softball. The memo is for players and coaches to refer to for sports nutrition information before, during and after competition, and is a basic guideline for GB players and staff to maintain consistency within the programme, including expectations for both athletes and coaches.

It is important to remember that these guidelines may not be suitable for all athletes and coaches depending on individual nutritional requirements and health conditions. Therefore, it is important for athletes and coaches to read these guidelines and raise any concerns prior to competition.

Introduction

What you eat and drink the week before competition can make a big difference to your performance, particularly in sports where training sessions or competition lasts longer than 90 minutes. The aim in the lead-up to competition is to maximise your muscle energy stores and ensure proper hydration. Preparing your eating and fluid habits a month before competition will greatly improve your body's response to the adjustments you will need to make.

Alcohol

Alcohol is prohibited by WADA (the World Anti-Doping Agency) for some sports during competition. The consumption of alcohol causes acute symptoms of reduced reflexes and coordination and visual and peripheral impairments, all important physiological requirements for softball. Drinking alcohol post-exercise will reduce the ability of the body to heal from injuries or repair muscles. The largest concern relating to alcohol and sports performance is the after-effects of dehydration (covered below).

Alcohol is a banned substance for GB Softball athletes over the age of 18 throughout the duration of a competition and the training camp that may precede it, and is banned completely during trips – including after competition – for athletes under 18. For more on GB policy with regard to alcohol, see below.

Hydration

It is important to monitor your hydration intake every day, especially if undertaking exercise on a day-to-day basis. Fluid is lost daily through sweating and through water vapour as you breathe. If an athlete fails to rehydrate efficiently, then blood gradually turns more viscous (thicker) and the

cardiovascular system has to work harder to pump this blood around the body. This added task reduces the athlete's overall energy and performance.

The easiest way to check your hydration status is by monitoring the colour and volume of urine (see hydration scale in Appendix below).

Post-exercise, you should consume the amount of fluid lost during exercise. Loss of body weight during exercise is in most cases a reduction in body fluid. Two ways to monitor efficient rehydration post-exercise is by checking urination colour against the hydration scale, or by weighing yourself before and after the event and drinking 1L per 1kg of body weight lost.

Caffeine is no longer banned by WADA, but caffeine consumption should be kept in moderation to avoid it affecting hydration status. Caffeine is recommended to be consumed without the inclusion of foods or liquids high in sugar (i.e. sweets, soft drinks or energy drinks).

Sports drinks are most useful for consumption when fluid loss during exercise is high, and should be consumed either during or after exercise, not before.

Salt and hydration. A low sodium (salt) concentration in the blood signals to the brain to lower thirst sensation, which can lead to dehydration. A higher sodium concentration helps signal thirst to the brain, and therefore leads to maintaining hydration levels. Sports drinks contain small amounts of sodium; alternatively, place a pinch of salt into water.

Recommendations:

- Drink 5-7ml of fluid per kg of body weight slowly at least 4 hours before exercise to promote hydration and allow time for excess water to be excreted.
- If this does not result in urination within 2 hours prior to training or competition or the urine is dark-coloured, you should continue drinking.
- During exercise, drink according to your thirst and sweat rates; everyone is different.
- A fluid loss of more than 2% of body weight will begin to affect performance.
- Cooler drinks are more refreshing to consume during exercise.
- Under 'controlled weather conditions', softball is a moderately intense sport and therefore water consumption should be an adequate source of fluid to control hydration.
- In 'hot conditions' which promote increased sweat production, the use of sports drinks (one per game should be sufficient) are suggested to replace lost nutrients and increase the desire to hydrate.
- Post-exercise, slowly consume 1L per 1kg of body weight lost.
- Avoid overconsumption or drinking a large amount of fluid quickly to prevent bloating and discomfort when exercising.

Sugary/energy drinks – why not?

Sugary (soda) drinks and fruit juices are hypertonic, meaning they are more concentrated than body fluids. When consumed, they are emptied more slowly from the stomach as they need to be diluted by water before being absorbed. This process reduces your body fluid and activates internal functions to process the levels of sugar rapidly entering the bloodstream. While the body is busy trying to normalise your blood sugar levels, it is taken away from a focus on assisting your performance. This quick rise in blood sugar levels (16+ teaspoons of sugar per bottled drink) causes a quick reduction in energy levels one hour post-consumption.

Recommendations:

- Avoid soft drinks and highly caffeinated energy drinks during exercise or throughout the duration of competition.
- Dilute fruit juice as an alternate hydration or re-hydration source.
- Choose water as the primary source of re-hydration, or other drinks low in sugar and that do not contain aspartame (aspartame is 200 times sweeter than sugar).

Pre-performance meals

To avoid performance slumps as a result of nutrition intake, recommended times for meal planning are below. After a meal the body uses energy metabolising and breaking down the nutrients in the stomach, and depending on the complexity of the food, this can take varying periods of time (known as gastric emptying). If an athlete tries to train and perform at their peak during gastric emptying, blood flow can be diverted from the muscles and heart to the stomach to continue digesting the food. As a result, energy for the athlete's performance is reduced and the athlete may feel heavy and sluggish. Of all the meals below, a high carbohydrate (CHO) meal containing 200- 300g CHO three to four hours before competition provides the best performance outcome.

Recommended time for consumption to allow gastric emptying of pre-performance meals:

- 3 to 4 hours to digest a large high-carbohydrate meal.
- 2 to 3 hours to digest a small carbohydrate meal.
- 1 to 2 hours to digest a blended or liquid food.
- Less than 1 hour to digest a small low-carbohydrate snack.

During competition

If sufficiently fueled prior to competition, your body should be able to cope without ingesting food throughout the duration of a softball game. However, if you feel the effects of fatigue and hunger, or the competition is at a difficult time which prevented a meal three to four hours pre-game, small snacks containing 30g of CHO (and which avoid fats, sugars and heavy protein) are recommended. This will replenish lost blood glucose stores which provide you with energy.

Recommended foods and drinks to consume during softball (aim for 30g of CHO):

- Isotonic sports drinks (500ml).
- Energy bar (1/2 – 1bar).
- Diluted fruit juice (500ml).
- Raisins or sultanas (1 handful = 40g).
- Cereal or breakfast bar (1 bar).
- Energy gel (1 sachet).
- Bananas (1-2).

Post-competition meals

Post-competition meals aim to refuel the depleted stores of glycogen (energy) in your muscles. The amount of glucose (glycogen breaks down into glucose to be used as energy) depleted will depend on the duration and intensity of the exercise and fitness level of each individual. The higher the intensity and the longer the duration, the more glucose is used and therefore the more glycogen

needs replacing. Fitness levels impact individuals with regard to how quickly the body can restore itself; the fitter athletes will be able to recover quickest and be ready to train and play hard the following day.

Recommendations:

- Aim to replenish glycogen stores within the first two hours after exercise, as this is when the body is most 'efficient' at storing.
- Four hours post-exercise the body returns to pre-exercising levels and absorption of glycogen slows.
- Depending on your exercise levels, aim to consume 1g of CHO per kg of body weight within two hours post-exercise.
- Maintain the consumption of 50g of CHO every two hours until the next main meal.
- Avoid eating a large heavy meal immediately prior to bed; instead, allow 1-2 hours for the food to digest.

Nutrition Guidelines

Recommended daily intakes based on body weight (BW) for moderate-to-high intensity training or competition (1-3 hrs daily):

Nutrient	Mod-high intensity (1-3h exercise daily)	Very high intensity (>4hrs exercise daily)	Comments
Carbohydrates (CHO)	7-12g per kg BW daily	10-12g per kg BW daily	- CHO needed to maintain blood glucose during exercise. - To replenish muscle glycogen stores. - CHO intake varies daily depending on exercise intensity.
Protein	1.2-1.4g per kg BW daily	1.3-1.8g per kg BW daily	- It may take 4-5 hours to digest a meal high in fat and protein. - Protein is important to repair muscles. - Consume 15-25g of protein with CHO within 1 hour post-exercise.
Fat	1.0 g/kg/day 20-35% of total calorie intake	1.3 g/kg/day	- Unsaturated fats support vital organs and insulate and preserve body heat. - The body can only store a small amount of fat to use as energy; the rest gets turned into adipose tissue (fat). - Minimise saturated fats (biscuits, baked products, butter, cheese) to achieve peak sports performance and health.

GB Guidelines

- Alcohol is a banned substance for all GB athletes and staff during the period of pre-event and competition to ensure each individual is physically and psychologically at their peak performance levels.
- For athletes over 18, alcohol may be consumed, at the discretion of the coaching staff, once the competition has finished and the team is still together -- but only in moderation and not while in GB uniform. Alcohol consumption is not permitted at any time during a GB trip by athletes under 18.
- The consumption of soft drinks and energy drinks during and after competition is at the discretion of the coaching staff. The decision of the staff in this matter should be clearly highlighted to all athletes before the commencement of the tour and should also be applied to all coaching staff.
- To avoid a slump in athletes' performances, meal planning should be taken into consideration with regard to the team's daily timetable. While it is important to ensure that athletes are not consuming large portions pre-competition, it is vital to ensure that sufficient time is allocated for athletes to consume meals which consist of all the required nutrients to maintain body weight, supply the body with lost nutrients and avoid fatigue.
- Details of any specific individual nutritional needs or concerns should be discussed between athletes and staff prior to the start of the tour.

Appendix

Hydration scale - correlating fluid intake against urine colour:

WELL HYDRATED

You are hydrated. Continue on drinking as recommended.

You are hydrated. Continue on drinking as recommended.

HYDRATED

You are hydrated. Continue on drinking as recommended.

Start drinking more fluids. You might be slightly dehydrated.

DEHYDRATED

You are dehydrated. You need to drink more to prevent heat illness or heat stroke.

You are dehydrated. You need to drink more to prevent heat illness or heat stroke.

SEVERELY DEHYDRATED

You are dehydrated. You need to drink more to prevent heat illness or heat stroke. If your urine is very dark/red seek medical attention without delay.

SECTION 2: CONCUSSION PROTOCOL

What is a Concussion?

The Mayo Clinic defines a concussion as “a traumatic brain injury that alters the way your brain functions. Effects are usually temporary, but can include problems with headache, concentration, memory, judgment, balance and coordination.”

There are a wide variety of signs, symptoms, and behaviours consistent with a concussion. Common signs, symptoms, and behaviours are listed below. It should be noted that an athlete with a concussion does not have to experience loss of consciousness (LOC).

If you have had a concussion previously, then you are at increased risk to have another concussion. Repeated concussions for a player requires longer recovery time. In addition, the effects of repetitive concussions may be cumulative. Possible complications and consequences of a concussion include but are not limited to: post-concussion syndrome, second-impact syndrome, and perhaps neuropathological changes such as chronic traumatic encephalopathy from repetitive head injuries. Possible consequences of any head injury include death or permanent disability.

If an athlete is unsure if they have a concussion but “don’t feel right”, then they should proceed as if they have a concussion. As a general rule, when in doubt, get it checked out.

Common Signs and Symptoms of a Concussion:

Concussion Testing

All athletes should undergo baseline concussion assessments, at the earliest opportunity, through their Federation’s sports science staff prior to participation. This will consist of a thorough concussion history, neurocognitive testing, and postural-stability testing. These tests will also be used in concussion evaluation techniques.

Concussion Reporting

All athletes should sign a statement acknowledging the risks of concussion and accepting the responsibility of reporting ALL injuries and illnesses to sports science staff.

Any athlete experiencing a blow to the head and experiencing ANY concussion symptoms will be held out from participation for the remainder of the day. At the time of injury, an Athletic Trainer (AT) or appointed and suitably trained coach will evaluate the athlete for acute signs and symptoms of a concussion.

The attending AT or appointed coach will utilise a Sport Concussion Assessment Tool to assess the athlete’s cognitive and physical symptoms. If an athlete demonstrates any symptoms of a concussion, they will not be allowed to participate in athletic activities until they have been cleared to begin the Return to Play progression.

Concussion symptoms can include:

- Headache
- Feeling “in a fog”
- Ringing in the ears
- Dizziness
- Unusual emotional sadness
- Nausea
- Irritability
- Seeing stars
- Balance difficulties
- Loss of consciousness
- Sensitivity to noise
- Light sensitivity
- Loss of orientation
- Sleep disturbances
- Fatigue
- Memory problems
- Vacant stares
- Blurred vision
- Nervousness
- Vomiting
- Easily distracted
- Personality changes
- Confusion

Following the initial concussion assessment, the athlete needs to report the concussion to sports science staff in person or via a phone or Skype call within 24 hours for detailed discussion/assessment. A form shall be used to assess players in the acute phase and recommendations made based on the documented results.

Players should also report signs and symptoms daily to sports science staff until they have been symptom-free for 24 hours. Once they have been asymptomatic for 24 hours and have been cleared by the sports science staff, they can begin the Return to Play progression.

Return to Play Progression

Return to Play Progression (RTP) will not begin until an athlete is asymptomatic for a full 24 hours and has been cleared by sports science staff to begin activity. If ANY symptoms return during Levels 1-6, the athlete must stop all activity and wait until symptom-free for a full 24 hours. Once they are asymptomatic again, they will begin from Level 1 of the RTP progression.

Rehabilitation Stage Functional Exercise

Level 1 -- No activity -- physical and cognitive rest.

Level 2 -- Light aerobics, stationary bike (10-20 minutes).

Level 3 -- Moderate aerobics, consistent running (30 minutes).

Level 4 -- Sport-specific activity, sprinting, light resistance training.

Level 5 -- Non-contact SAQ drills, progression to more complex drills.

Level 6 -- Full-contact normal training activity.

Level 7 -- Normal game play.

SECTION 3: ANTI-DOPING

The text below is largely from UK Anti-Doping (UKAD):

Your part in clean sport

All athletes in the UK are part of clean sport. It is the mission of UK Anti-Doping (UKAD) to protect your right as an athlete to compete in clean sport.

You are already on the talent pathway to elite sport as part of the GB Softball programme, or you may have been selected to a GB Softball team. This means you must incorporate anti-doping practices into your day-to-day life, so that as you progress in softball, anti-doping becomes a normal part of being an elite athlete.

Strict Liability -- not knowing is no excuse

At this stage in your sporting career, you need to know about Strict Liability and what this principle means for your sporting career.

Strict Liability means that you are solely responsible for any banned substance found in your body, regardless of how it got there and whether you intended to cheat or not.

Think about the following:

- Who advises you on what to eat?
- Has anyone ever given you something to take in addition to your normal daily diet?
- When was the last time you took medication, say for a cold or hay fever?
- Do you have a medical condition that means you have to take medication regularly?
- How aware are your parents/partner of the things athletes can or can't take?
- Have you ever taken a powdered sports drink?
- If you have been injured, have you ever used a cream or lotion as part of your treatment?
- Have you trained or played abroad? Did you purchase any medication there?

If you answered yes to any of these questions, you could have put yourself at risk of inadvertent doping -- that is, accidentally taking a prohibited substance. Many over-the-

counter medicines and health supplements contain substances that are banned for athletes, especially when in competition.

Whether you use it or attempt to use it by mistake or on purpose, any prohibited substance found in your body is your sole responsibility. There are no excuses and you are likely to face a ban from sport.

Abiding by Anti-Doping Rules

It's important you are clued up on anti-doping rules so you can continue to enjoy and achieve success in softball.

UKAD is responsible for clean sport in the UK. We set the rules and ensure sports adopt and comply with them. This means that we work with the British Softball Federation and GB Softball programmes to make sure that you compete cleanly and fairly at all stages throughout your career. We can deliver education programmes on request so that you know about key areas of anti-doping. We also carry out other work such as managing doping testing programmes, handling doping cases and gathering intelligence about doping activity.

Softball and the Anti-Doping Rules

If you are a member of a club or BSF representative team, and you take part in ESF or WBSC competitions, you must abide by the anti-doping rules associated with softball at the point of competition (or occasionally out of competition). Make sure you find out about these rules from your club or the BSF or the GB Management Committee so you know what they are.

There may be additional anti-doping rules in place for specific competitions such as regional, national or international events. Always check the rules of any major competitions you are entering. Your coaching team or the team physio will be able to advise you.

Making the Right Decisions

"100% Me" is UKAD's education programme. It is designed to help you make the right decisions in relation to anti-doping and your sporting career.

At your level, you may be exposed to a range of training sessions, some of which may be out of your usual club and may challenge you further. You're training harder and may have other things in your life, such as exams, work and friends. It can be tough and at times you may feel under pressure. This is when you need the support of your family and friends to help you make the right decisions and maintain a good balance between all your commitments.

As an athlete, your mind is your most important asset. Developing mental toughness will support you in your career when times become more challenging. Sport is full of highs and lows, and learning to be mentally tough will enable you to stay strong and focused during moments of self-doubt – moments when you may consider taking a short-cut to improve your performance.

Strong decision-making skills and the confidence to stand by your values will underpin your success as an athlete. Sometimes you will be faced with tough decisions. Always try to think things through before you take a course of action.

Things to consider:

- What is the situation I'm facing?
- What are all the possible options available to me?
- Are these options in line with what I believe in?
- What would my sporting hero do in the same situation?
- What are the consequences of taking these options – in 10 minutes, tomorrow, next week, next year, in ten years?
- Who can I ask for advice?
- Can I feel proud and take responsibility for the decision I'm making?
- Would anyone think badly of me if I did this?
- Am I being true to myself?

A true athlete is a clean athlete

To achieve clean sporting success you need to be sure that nothing you ingest or use – including food, drink, medication, supplements and herbal remedies – contains any banned substances.

Our advice is to follow three actions: tell, check and ask.

1. Tell

Always tell people you're an athlete and have to abide by the anti-doping rules. For example, tell your doctor, teachers and friends that you have to check medications and consider the foods you consume in terms of anti-doping.

2. Check

Before you take any medication, whether it's bought over the counter or prescribed, always check that it is safe for you to use. You can do this by using an online system called Global DRO.

Global DRO (<http://www.globaldro.com/UK/search>) is a web-based tool that provides athletes and support personnel with information about the prohibited status of specific substances under the rules of sport based on the current World Anti-Doping Agency (WADA) Prohibited List for products sold in the United Kingdom, Canada, Japan and the United States. The system has the ability to check the status of branded medications and individual active ingredients as well as providing every search with a unique reference number for your records.

Global DRO allows you to type in the medication's brand name or the ingredients. The website's database will then tell you if the medication is safe to take. Always read your search results carefully as some substances are only banned during competition and others are banned at all times. Try testing any medication you currently have at home to see if it is safe to take.

A new mobile-enhanced version of Global DRO is now available enabling athletes to check their medicines while on the move. If you can't find what you are looking for then contact your Head Coach or the team's Physiotherapist.

Things to Remember:

- Global DRO can only be used for licensed medications, not supplements or herbal remedies.
- Global DRO can only be used to check medications sold in the UK, USA, Canada or Japan (Japanese only).
- A brand of medication in the UK does not necessarily contain exactly the same ingredients in the US or Canada or Japan, so always check if you buy the same product abroad.
- You should check Global DRO regularly. The status of medications can change if their ingredients contain a banned substance which is added to the Prohibited List, or if the manufacturer changes the ingredients of the product.
- Be sure to keep the reference number of any medicine checks you make as a record of your search.

3. Ask

People around you want you to succeed and be the best you can be. Ask them for advice if you are unsure about anything. Your family, coaches, teachers and the "100% Me" programme are here to help you.

Build your confidence in anti-doping to improve your understanding of how to protect yourself from inadvertent doping.

Checking Your Medication

Many medications available for common medical conditions, such as asthma or hay fever, may contain prohibited substances. You need to be aware that these are readily available in products prescribed by your doctor or bought over the counter in a pharmacy.

The advice from UK Anti-Doping is simple -- check every single substance or medication before you use it, even if you have used it before. It is also important to remember that medications bought abroad may contain different substances than those in the UK and you should always check before you take them.

Therapeutic Use Exemptions (TUEs)

The Therapeutic Use Exemption (TUE) process is a means by which an athlete can obtain approval to use a prescribed prohibited substance or method for the treatment of a legitimate medical condition.

The TUE Process

1. Athletes should advise all medical personnel of their obligation to abide by the anti-doping rules of their sport and that any medical treatment received must not violate these rules.
2. When prescribed a substance or method, athletes should check if that medication is prohibited by checking the Global Drug Reference Online system.
3. If the medication is not prohibited, athletes can start using the prescribed medication or treatment.
4. If the medication is prohibited, athletes should check with their prescribing physician or the sport's medical personnel to see if there are any alternative medications or treatments that are permitted.
5. If there are no permitted alternatives, athletes should contact their Head Coach or Team Physiotherapist to find out what type of exemption is required and if a TUE should be applied for prior to use or after doping control.
6. Only in emergency situations (e.g. allergic reaction, exacerbation of asthma, onset of Bell's Palsy) should treatment begin without the necessary approval.

When to Apply for a TUE

The requirements vary depending on the level of the athlete. Athletes competing at a national level should apply to UKAD. International athletes (as defined by their

International Federation) should apply to their IF – in this case, the WBSC Softball Division. For advice on determining whether and when a TUE is required, send UKAD an email (substanceenquiry@ukad.org.uk).

An athlete not required to apply for a TUE prior to competition can make a retroactive TUE application to UK Anti-Doping. Any athlete requiring a retroactive TUE has five days post the receipt of an adverse analytical finding (AAF) to submit a retroactive application.

Typically, an athlete will receive a letter by courier to confirm an AAF and inform them of the requirements to apply for a retroactive TUE for the prohibited substance detected in their sample.

The NGB or UKAD may also contact the athlete to make them aware that this correspondence is on its way in relevant circumstances.

We encourage any athlete who has been tested without a TUE in place, and who may require one, to contact UKAD to discuss the process to better understand their rights and responsibilities. Even if an athlete is eligible to apply for a retrospective TUE, checks should be made with the prescribing physician that the criteria and medical evidence needed by the Therapeutic Use Exemption Committee (TUEC) can be met before the athlete uses any prohibited substance or method.

Travelling Abroad and Checking Medications

Athletes planning to travel abroad should ensure they adhere to the following advice:

- Take enough medication to continue any treatment for the duration of the trip.
- Check the status of all products before you travel.
- Check that the medication is permitted in the country of travel and that it is permitted to bring it through customs.
- Download the Clean Sport App.
- Any products purchased overseas should be carefully checked. The ingredients in common medications can and do contain different substances to those available in the UK. Some countries have different customs laws that may prohibit the import of certain substances into a particular country. Athletes carrying a prohibited substance for a legitimate medical condition should carry the following documents at all times:
 - The prescription from the prescribing doctor including the name of the substance, the dose and the frequency of use.
 - The Therapeutic Use Exemption Certificate to demonstrate that an authorised anti-doping organisation has permitted the use of a prohibited substance for medical purposes.

Information on Supplements

UK athletes are advised to be vigilant when choosing to use any supplement. No guarantee can be given that any particular supplement is free from prohibited substances. Informed-Sport tests batches of supplements to check for contamination as part of a risk-minimisation programme.

Supplements

- There is no guarantee that any supplement product is free from banned substances.
- You are strongly advised to be very cautious if you choose to use any supplement product.
- You must undertake thorough internet research of any supplement products before use, including the name of the product and the ingredients/substances listed. Information revealed as a result should be further investigated and we advise athletes to keep evidence of their research.

What are the risks?

- Supplements can contain banned substances.
- Contamination (where banned substances are accidentally mixed in with the supplement) can occur during the manufacturing process.
- Ingredients on the label may be listed differently to how they are shown on the Prohibited List.
- Supplements may be sold as counterfeit products. The risk of fake supplement products is greatest when buying over the internet.
- A label saying 'Safe for Sports People', or 'Approved by WADA or UKAD' is meaningless. WADA and UKAD do not approve any supplement products.

Our Advice

Before you take a supplement you should:

- Assess the need -- all athletes should seek advice from a medical professional or nutritionist on their need to use supplement products.
- Assess the risk -- undertake thorough research of all supplement products you are considering taking.
- Assess the consequences -- you could receive a four-year ban! You can reduce the risks by:
 - Undertaking thorough internet research.
 - Only using batch-tested products.

- Checking on the Informed-Sport risk minimisation programme that a supplement has been batch-tested.

All athletes are advised to be vigilant in using any supplement. No guarantee can be given that any particular supplement is free from prohibited substances.

An important principle of the Code is that of Strict Liability, which states that athletes are solely responsible for any prohibited substances they use, attempt to use or that are found in their system regardless of how it got there and if there was an intention to cheat. Before taking supplements, athletes must therefore assess the need, risk and consequences to their careers.

Diet, lifestyle and training should all be optimised before athletes consider supplements and they should always consult a medical professional or nutritionist and seek advice.

Supplements may claim to be drug-free or safe for drug-tested athletes. It is not possible to guarantee that specific supplements will be free of prohibited substances and athletes can only reduce the risk of inadvertent doping by making informed decisions.

There is an array of supplements available for athletes to purchase that have no prohibited substances listed as ingredients. Despite this, there have been several cases whereby supplement products have been contaminated with prohibited substances as defined by the World Anti-Doping Code (the Code) Prohibited List.

In the UK, there is a scheme to support athletes in assessing the risk. The Informed-Sport programme is designed to evaluate supplement manufacturers for their process integrity and screening of supplements and raw ingredients for the presence of substances that are on the WADA Prohibited List. For further information, visit the Informed-Sport Website (<http://www.informed-sport.com/>).

UKAD believes this risk-minimisation service to be a positive step and welcomes the approach being taken by industry and the LGC Informed-Sport programme. However, we wish to remind athletes that strict liability will still apply, as will the appropriate sanctions imposed on any athlete returning an adverse analytical finding from any supplement product, as with all other cases of doping.