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POLICY AND PRACTICE RECOMMENDATIONS REPORT



IRIS

Improving Athletes' Risk Appraisal and
Informed-Decision-Making Towards
Nutritional Supplement Use in
Recreational and Competitive Sport

**This report provides recommendations
regarding safer nutritional supplements for:**

1. Regulatory authorities

2. Manufacturers

3. Anti-doping organisations

4. Athlete Support Personnel (ASP)

5. Athletes





INTRODUCTION

The use of nutritional supplements (NS) has become increasingly common across all levels of sport, from elite and competitive athletes to recreational exercisers, gym users, and young people seeking improvements in performance, recovery, health, or physical appearance. Products such as protein powders, amino acids, creatine, vitamins, minerals, caffeine, pre-workout formulas, fat burners, and herbal preparations are now widely available through pharmacies, supermarkets, gyms, specialist retailers, and online platforms. This easy access has contributed to the normalisation of supplement use and has contributed to the rapid expansion of a global market shaped by fitness culture, body image standards, performance-oriented lifestyles, and highly persuasive commercial promotion.

Although many nutritional supplements are legal and may be useful when used appropriately and under qualified guidance, their widespread use raises important public health, consumer protection, and anti-doping concerns. The supplement market is commercially driven, and the primary objective of manufacturers and distributors is to sell products. This commercial imperative can influence how products are formulated, labelled, advertised, and promoted. Athletes and exercisers are often exposed to claims suggesting enhanced performance, faster recovery, fat loss, muscle gain, or improved appearance, even when such claims are not supported by robust scientific evidence. Misleading promotion, unclear labelling, pseudo-scientific language, and the use of terms associated with prohibited performance-enhancing substances may create unrealistic expectations and encourage unnecessary or risky consumption.

The risks are particularly important in sport because nutritional supplements are closely linked to both intentional and inadvertent doping. Evidence reviewed in the IRIS report indicates that NS use is a major risk factor for doping in competitive and recreational sport, that competitive athletes who use supplements are more likely to engage in doping than non-users, and that a proportion of positive doping cases may result from the unintentional use of contaminated supplements. Contamination may occur because of poor manufacturing practices, inadequate quality control, cross-contamination during production, or inaccurate labelling. As a result, athletes may unknowingly consume products containing prohibited substances, such as anabolic agents, stimulants, or prohormones. This creates serious consequences for athletes' health, sporting careers, reputation, and legal rights, especially because athletes are subject to strict liability for any prohibited substance found in their body, regardless of intent or source.

Beyond doping, nutritional supplements may pose direct health risks. Products may contain undeclared ingredients, inaccurate doses, contaminants such as heavy metals, pesticides, mycotoxins or bacteria, or substances that interact negatively with prescription or over-the-counter medication. These risks are amplified when athletes rely on informal sources of advice, such as peers, coaches, social media influencers, fitness professionals without specialised nutrition training, or commercial websites. The IRIS report demonstrates that, despite widespread supplement use, many athletes have incomplete knowledge of contamination risks, limited understanding of regulatory responsibilities, and inconsistent use of third-party testing or other quality assurance mechanisms.





The issue should therefore not be understood solely as a matter of individual responsibility. It reflects a broader ecosystem in which athletes, coaches, parents, clubs, sport organisations, healthcare professionals, anti-doping bodies, regulators, retailers, manufacturers, and digital marketing platforms all influence supplement-related decisions. Current regulatory and safety frameworks often struggle to keep pace with the scale, complexity, and cross-border nature of the supplement market. The IRIS report highlights systemic challenges, including limited awareness of regulatory bodies, inconsistent contamination screening, misleading marketing practices, and the need for stronger consumer protection, clearer labelling, education, and marketing reform.

The IRIS Project (Improving Athletes' Risk Appraisal and Informed Decision-Making Towards Nutritional Supplement Use in Recreational and Competitive Sport), funded through the Erasmus+ Sport Programme, was developed to address these challenges. IRIS aims to combat doping and protect athlete health by fostering risk awareness, informed decision-making, and evidence-based approaches to supplement use across both recreational and elite sport. helping athletes in recreational and elite sport become more risk-aware, better informed, and more capable of making evidence-based decisions about supplement use. Rather, they affect a broad population of sport participants and exercisers who may have different levels of knowledge, access to expert advice, and exposure to commercial promotion.

This document of policy recommendations translates the evidence generated through the IRIS project into a practical framework for action. Its aim is to support policy makers, sport organisations, anti-doping authorities, public health bodies, educational institutions, coaches, athlete support personnel, retailers, and other relevant stakeholders in developing safer, more transparent, and more accountable approaches to nutritional supplement use in sport. The framework is intended to complement existing anti-doping regulations and public health policies by focusing on prevention, risk reduction, informed decision-making, ethical marketing, and shared responsibility across the supplement-use ecosystem.

Specifically, the recommendations seek to: strengthen athlete and consumer protection; reduce the risk of inadvertent doping; improve the quality and transparency of labelling and marketing practices; promote evidence-based education; encourage responsible guidance by athlete support personnel; and support more coherent regulatory and monitoring mechanisms across European sport settings. In doing so, the document recognises that nutritional supplements should not be addressed only as products consumed by individual athletes, but as part of a wider policy concern involving health, fairness, commercial accountability, and the integrity of sport.





FRAMEWORK

How to assess nutritional supplements

Assessing nutritional supplements requires more than checking whether a product is popular, widely available, or promoted as “scientifically proven.” Nutritional supplements exist within a complex environment shaped by commercial interests, variable regulation, health and performance expectations, and anti-doping risks. For this reason, athletes, coaches, parents, athlete support personnel, sport organisations, and policy makers should apply a structured decision-making framework before recommending, purchasing, or using any supplement. The IRIS framework is based on three sequential questions: What is the expected benefit? What are the possible risks? What are the potential consequences?

The first step is to assess the benefit. Nutritional supplements are generally defined as concentrated sources of nutrients or other substances with a nutritional or physiological effect. They may be used to address identified nutritional deficiencies, support normal physiological functions, or, in some cases, assist training adaptation, recovery, or performance. Available in many forms, they can include tablets, capsules, powders, liquids, gels, drinks, and bars. Common examples include vitamins, minerals, protein formulas, amino acids, creatine, caffeine products, pre-workout formulas, weight-loss products, and herbal preparations. However, the fact that a product is legally sold does not mean that it is necessary, effective, or safe. A supplement should only be considered when there is a clear and justified need, when the intended benefit is supported by credible evidence, and when food-based strategies or professional nutritional guidance are insufficient. The IRIS report highlights that supplements are commonly used by both elite and recreational athletes to improve performance and physical appearance, but also that many users lack sufficient knowledge about active ingredients and possible side effects.

The second step is to assess the risk. Nutritional supplements are commonly marketed through persuasive claims about strength, endurance, recovery, fat loss, muscle gain, energy, or appearance. Marketing often uses scientific-sounding language, elite athlete imagery, ‘natural’ claims, or references to pharmacological effects. Such strategies can create the impression that products are more effective, safer, or more essential than they really are. This is particularly concerning because supplements are generally regulated as food products rather than medicines, meaning they are not subject to the same level of pre-market testing, quality control, or proof of effectiveness as pharmaceuticals. The IRIS report notes that nutritional supplements are widely available online and offline and that regulatory systems often do not require comprehensive pre-market evaluation of product composition or safety.

Risk assessment should therefore include careful consideration of product composition, manufacturing quality, labelling accuracy, source of purchase, testing from independent authorities, and the credibility of the information used to justify consumption. Particular caution is needed with products making exaggerated claims, promising rapid body transformation, using terms such as “anabolic,” “extreme,” “testosterone boosting,” or “fat burning,” or containing complex blends of ingredients that are not clearly explained. The IRIS report identifies misleading labelling, poor manufacturing standards, and inadequate quality control as important contributors to supplement-related risks.





The third step is to assess the consequences. The consequences of supplement use may be health-related, performance-related, legal, social, ethical, and financial. More specifically: a) From a health perspective, products may contain undeclared ingredients, inaccurate doses, contaminants, or substances that may adversely interact with medication. Contaminants may include prohibited by the World Anti-Doping Agency (WADA) performance-enhancing substances, stimulants, prohormones, anabolic agents, heavy metals, pesticides, mycotoxins, or bacteria. From an anti-doping perspective, the consequences may be severe. b) With respect to anti-doping consequences, nutritional supplement use is linked to both intentional and inadvertent doping, and contaminated supplements have been identified as a source of positive doping tests. The IRIS report notes that supplement use is a major risk factor for doping in competitive and recreational sport, that athletes using supplements are more likely to engage in doping, and that a proportion of positive doping cases may result from contaminated products.

For competitive athletes, this risk is especially important because anti-doping rules are based on strict liability: athletes are responsible for any prohibited substance found in their body, regardless of whether the substance was consumed intentionally or unknowingly through a contaminated supplement. Consequences may include suspension, loss of medals or results, reputational damage, emotional distress, financial cost, and loss of trust in sport systems. Even outside elite sport, supplement misuse may lead to health harm, unnecessary financial expenditure, and increased normalisation of performance-enhancing substance use.

In practice, the IRIS assessment framework can be summarised in the following steps: 1) Have you identified a specific goal or benefit for using the selected supplement? 2) Have you optimised your sleep, nutrition, and training, yet still find it difficult to achieve your goal? 3) Is it a Group A or B supplement within the AIS Sports Supplement Framework? 4) Have you discussed its use with your sports dietitian (or doctor) to confirm its potential to support desired outcomes? 5) Have you discussed integration of the supplement into your overall health & performance nutrition plan with your sports dietitian (or doctor)? Do you have a specific protocol for use? 6) Is the supplement third party batch tested, and does the batch number appear in the relevant database? 7) Have you documented all relevant supplement details, including photographs of the packaging, nutritional information, manufacturer details, and batch number? 8) Do you understand the 'strict liability' principle under anti-doping regulations? 9) Only use supplements following evidence-based, safe guidelines outlined in official practical guides, and in accordance with the specific guidance of your sports nutritionist, dietitian, or physician.

This approach shifts supplement decisions from marketing-driven consumption to informed, evidence-based, and risk-aware decision-making. It also reinforces the need for shared responsibility among athletes, coaches, parents, health professionals, sport organisations, regulators, manufacturers, and retailers to create a safer supplement environment.





1. REGULATORY AUTHORITIES

Strengthening regulation, surveillance and consumer protection

Counterfeit, adulterated and contaminated nutritional supplements should be treated as a combined public health, consumer protection and anti-doping risk. Evidence consistently identifies certain product categories as carrying a higher risk of containing prohibited or undeclared substances. These include products marketed for pre-workout, muscle recovery, strength, endurance, fat loss, or rapid body transformation (e.g., fat burners and thermogenics, herbal slimming and weight loss products), brain enhancers, nootropics, and mood, focus and energy boosters, as these categories are more likely to use aggressive performance-enhancement claims and may contain undeclared substances, including anabolic agents, stimulants or prohormones. Regulatory scrutiny should be prioritised accordingly. The IRIS report shows that supplement use is linked to both intentional and inadvertent doping, that contamination may result from poor manufacturing standards and inadequate quality control, and that contaminated supplements may contribute to positive doping cases.

Recommended actions

1. Require minimum traceability standards for all nutritional supplements

All supplements sold in the EU, including those sold online, should be required to display clear and verifiable product information. Products should not be legally distributed when they lack:

- batch or lot number;
- expiry date;
- full manufacturer and distributor details;
- country of manufacture;
- complete ingredient list and dosage per serving;
- including the chemical form of active ingredients where relevant
- warning statements for athletes and high-risk groups;
- contact details for adverse event reporting;
- evidence of quality control or third-party batch testing, where relevant.

Products without a batch number, real manufacturer, expiry date or traceable distributor should be classified as high-risk and prioritised for inspection, removal from sale and reporting to consumer protection and anti-doping authorities.

2. Introduce stricter production and distribution requirements

Regulation should move beyond general food safety compliance and require stronger controls for supplements commonly used in sport. EU-wide regulation should also address the use of alternative and misleading names for commonly detected stimulants and anabolic substances, as regulatory frameworks should require standardised labelling of such substances and their known synonyms to prevent deliberate concealment and improve detection. Regulatory frameworks should require standardised labelling of such substances and their known synonyms to prevent deliberate concealment and improve detection.





Specific measures could include:

- mandatory Good Manufacturing Practice standards for supplement manufacturers;
- regulations requiring that labels display active ingredient amounts relative to established reference values or evidence-based effective doses where these exist, not just per manufacturer-defined serving;
- compulsory testing for high-risk product categories, such as muscle-building, fat-burning, pre-workout, testosterone-boosting and stimulant products;
 - prohibited substance testing should specifically target commonly detected stimulants and anabolic agents – such as ephedrine, pseudoephedrine, methylephedrine, DMAA, DMBA, boldione, androstenedione, sibutramine, higenamine, BMPEA, oxilofrine, NMPEA, enobosarm (also known as ostarine), clenbuterol, octodrine, cannabidiol-related compounds, and strychnine – including their alternative, obscure or proprietary names;
- random market surveillance testing for prohibited substances, heavy metals, mycotoxins, pesticides and undeclared pharmacological ingredients;
- mandatory risk warning on products likely to be used by athletes, for example: “This product may present an anti-doping risk if independently batch testing cannot be verified.”;
- obligation for online sellers and retailers to keep documentation on product origin, batch identity and supplier chain;
- EU-wide notification of supplements found to be contaminated, adulterated or falsely labelled.

These measures respond to the regulatory weaknesses identified in the IRIS report, including inconsistent contamination screening, limited athlete awareness of regulatory bodies, and the need for mandatory contamination testing, standardised risk disclosure and plain-language labelling.

3. Strengthen controls over illegal and informal distribution

Controls should be expanded beyond pharmacies and formal retailers to include the channels through which high-risk supplements are often distributed. Authorities should monitor and inspect:

- online marketplaces and cross-border e-commerce sites;
- social media sales through personal profiles, influencers or closed groups;
- gyms, fitness centres and bodybuilding clubs;
- informal sales by coaches, trainers, fitness instructors or athletes;
- products imported in small quantities and resold without authorisation;
- products using fake certification logos or unverifiable batch-testing claims.

A coordinated reporting mechanism should allow sport organisations, athletes, coaches, health professionals and consumers to report suspicious products. Reported products should be assessed by food safety, consumer protection, customs, anti-doping and law-enforcement bodies where appropriate.

4. Prohibit misleading and doping-associated marketing claims

Marketing rules should prohibit statements and imagery, through font size, colour palette, and pumped muscles, that blur the distinction between legal supplements and prohibited performance-enhancing substances.





This should include claims such as:

- “legal steroid”;
- “anabolic formula”;
- “testosterone booster” when unsupported by authorised evidence;
- “pharmaceutical strength”;
- “extreme muscle gain”;
- “rapid fat loss”;
- “before-and-after body transformation imagery”
- “WADA-safe” or “doping-free” unless linked to verifiable batch testing;
- claims implying drug-like effects or guaranteed performance enhancement.

This is important because the IRIS report found misleading claims, PED-associated terminology such as “Anabolic” or “Extreme,” and visual strategies suggesting pharmaceutical-grade potency.

5. Establish EU-level information sharing and surveillance

EU Member States should share information on contaminated, counterfeit and suspicious supplements through a common surveillance mechanism. This system should include:

- alerts on contaminated or adulterated products;
- laboratory testing results;
- products removed from national markets;
- suspicious online sellers and distribution networks;
- counterfeit products and fake certification badges;
- adverse health events;
- products associated with positive doping cases.

This would support a more aligned European overview of the supplement market and improve cross-border responses to unsafe products. To further support these actions, it would be useful creating a publicly available high-risk product database for athletes and exercisers across Europe.

6. Develop public awareness campaigns with practical content

Large-scale campaigns should be delivered by public health agencies, anti-doping organisations, sport federations, schools, universities, clubs and professional bodies. Campaigns should focus on practical decision-making rather than general warnings only. Key topics should include:

- how to identify counterfeit products;
- why batch numbers, expiry dates and manufacturer details matter;
- risks of buying supplements from social media, gyms or informal sellers;
- contamination with anabolic agents, stimulants, heavy metals and other undeclared substances;
- strict liability and the consequences of inadvertent doping;
- how to check third-party batch-testing certification;
- why “natural,” “scientifically proven,” or “legal” does not automatically mean safe;
- how to report suspicious products or adverse effects;
- the role of coaches, parents, trainers and healthcare professionals in safer supplement decisions.





The IRIS report indicates that many athletes rely on informal sources such as trainers, friends and family, while many users lack knowledge about active ingredients and side effects; therefore, campaigns should also target athlete support personnel and recreational sport environments.

7. Concise policy statement

EU and national authorities should strengthen regulation, market surveillance and public education to prevent the sale and use of counterfeit, adulterated and contaminated nutritional supplements. Products lacking batch numbers, manufacturer identity, expiry dates or verifiable traceability should be treated as high-risk and removed from distribution. Stricter controls should apply to high-risk supplement categories, online sales, social media promotion and informal distribution in gyms and fitness settings. At the same time, coordinated EU-wide information sharing and practical awareness campaigns are needed to protect consumer health, reduce inadvertent doping, and improve informed decision-making among athletes and exercisers.





2. MANUFACTURERS

Manufacturers of nutritional supplements should be required to provide clear, complete and evidence-based product information so that athletes and recreational exercisers can make informed decisions. The IRIS report shows that athletes want greater transparency in labelling and marketing, especially regarding ingredients, dosages, potential risks, third-party verification and exaggerated claims. It also highlights that misleading labelling may misrepresent active ingredients, that contamination can result from poor manufacturing standards and inadequate quality control, and that athletes often lack knowledge about supplement ingredients and side effects.

Recommended actions

1. Improve mandatory labelling information

Manufacturers should include, in plain language:

- full ingredient list, including active and inactive ingredients;
- the chemical form of key active ingredients (e.g., "magnesium as magnesium oxide" vs. "magnesium as magnesium citrate");
- exact dosage per serving and maximum recommended daily dose;
- clear instructions on safe use;
- possible side effects;
- risks of exceeding the recommended dose;
- risks of combining the product with other supplements, energy drinks, medicines or alcohol;
- warnings for minors, pregnant women, people with medical conditions and athletes subject to anti-doping rules;
- batch number, expiry date, country of manufacture, manufacturer identity and distributor contact details;
- adverse event reporting contact or QR code;
- third-party batch-testing information, where available.

This is particularly important because USADA warns that supplement labels cannot always be trusted to reveal the true ingredients, as products may contain prohibited substances or harmful ingredients that are not listed on the label.

2. Provide anti-doping risk information without making false guarantees

Manufacturers should not use phrases such as "Doping-free," "No doping," "WADA approved," "WADA safe," "100% safe for athletes," or similar claims. These statements may mislead athletes because no supplement can be guaranteed to be completely free from contamination or anti-doping risk. USADA similarly emphasises that supplement safety is never guaranteed and that even products described as "natural" may still pose risks.





A more appropriate label statement would be:

“Athletes subject to anti-doping rules should verify the batch-testing status of this product before use, ensure they have made an informed decision, and understand the strict liability principle.”

3. Avoid exaggerated or doping-associated marketing claims

Manufacturers should avoid claims that imply drug-like or prohibited performance-enhancing effects. Claims such as “anabolic,” “legal steroid,” “testosterone booster,” “extreme muscle gain,” “pharmaceutical strength,” “rapid fat loss,” or “maximum legal performance” should be prohibited unless they are legally authorised, scientifically substantiated and not misleading. The IRIS report found that some products use terms such as “Anabolic” or “Extreme,” which can blur the boundary between legal supplementation and performance-enhancing drug use.

4. Strengthen quality assurance and supply-chain responsibility

Manufacturers should be responsible not only for the final label, but also for the quality and traceability of raw ingredients. USADA notes that some companies may purchase impure or contaminated raw materials, rely on weak testing methods, or receive certificates of analysis that may not reliably detect contaminants. Therefore, manufacturers should:

- test raw ingredients before production;
- test final products by batch;
- use accredited laboratories;
- keep certificates of analysis for each batch;
- prevent cross-contamination during production;
- remove products immediately when contamination or mislabelling is detected;
- publish recall information clearly and rapidly.

5. Use third-party certification responsibly

Manufacturers should be encouraged to use reputable third-party testing schemes, but certification should not be presented as a total safety guarantee. Labels should show the exact batch number tested, the testing body, the date of testing and a QR code linking to verification. This would help athletes distinguish between genuine testing and vague or misleading “quality assured” claims. Importantly, certification logos should not appear more prominently than mandatory safety information.

6. Concise policy statement

Manufacturers should be required to provide transparent, evidence-based and plain-language labelling that includes ingredients, dosages, side effects, overdose risks, warnings for athletes, batch traceability and third-party testing information. They should be prohibited from using misleading anti-doping guarantees such as “WADA approved” or “doping-free,” and from using marketing claims that imitate or normalise prohibited performance-enhancing substances. These measures would improve consumer protection, reduce inadvertent doping risk and promote a more responsible supplement market.





3. ANTI-DOPING ORGANISATIONS

National Anti-Doping Organisations (NADOs) and anti-doping authorities should play a stronger role in reducing the risk of inadvertent doping linked to nutritional supplements. Although they do not regulate supplements directly, they are well placed to educate athletes and athlete support personnel, identify high-risk patterns, collect intelligence, and cooperate with public health, food safety, customs and consumer protection authorities. This is important because the IRIS report shows that supplement use is linked to doping risk, contamination may result from poor manufacturing and weak quality control, and many athletes have limited knowledge of regulatory bodies and inconsistent awareness of contamination risks.

Recommended actions

1. Integrate supplement risk education into all anti-doping programmes

NADOs should ensure that supplement education is not treated as an optional topic, but as a core part of clean sport education. Training should explain that:

- supplements may contain undeclared prohibited substances;
- “natural,” “legal,” or “available for sale” does not mean safe;
- labels may not reflect the true product content;
- contamination may occur intentionally or unintentionally;
- athletes remain responsible under strict liability;
- support personnel may unintentionally recommend unsafe products.

USADA emphasises that supplement safety is never guaranteed, that labels may not list prohibited or harmful ingredients, and that even trusted people such as coaches, doctors, parents or peers may not fully understand supplement risks.

2. Develop a NADO supplement risk-analysis tool

NADOs should provide athletes with a simple decision tool based on three questions: Is it necessary? Is it effective? Is it low risk? The tool should guide athletes to:

- prioritise food-first and medical/nutritional advice;
- avoid high-risk categories such as muscle-building, fat-burning, pre-workout, testosterone-boosting and stimulant products;
- check whether the exact product and batch have been independently tested;
- verify certification logos and batch numbers;
- keep records of purchase, batch number and advice received;
- avoid products sold through social media, gyms or informal sellers.

The tool should clearly state that third-party testing reduces risk but does not eliminate it and be available digitally and integrated into athlete education platforms/apps. This reflects USADA's warning that athletes cannot know the true ingredients of a product simply by looking at the label, and that contaminated or illegal products can still reach consumers.





3. Create national reporting and alert mechanisms

NADOs should establish or promote a clear reporting pathway for suspicious supplements, adverse health effects, misleading claims, counterfeit products and suspected contamination. Reports from athletes, coaches, clubs, doctors and laboratories should be shared, where appropriate, with food safety authorities, consumer protection agencies, customs, law enforcement and sport federations. This responds to the IRIS report's recommendation for stronger consumer protection measures, including a centralised supplement safety database and public awareness campaigns about contamination risks.

4. Monitor high-risk marketing and distribution channels

Anti-doping authorities should systematically monitor products and marketing practices that may normalise doping or mislead athletes. Particular attention should be given to:

- products using terms such as “anabolic,” “extreme,” “legal steroid,” “testosterone booster,” or “WADA safe”;
- products promising rapid muscle gain, fat loss or drug-like effects;
- influencer promotion and social media sales;
- supplement sales in gyms, fitness centres and bodybuilding environments;
- products with fake or unverifiable certification badges.

The IRIS report identified misleading claims, PED-associated terminology and visual strategies suggesting pharmaceutical-grade potency, supporting the need for stronger monitoring of supplement marketing.

5. Train athlete support personnel

NADOs should develop targeted education for coaches, trainers, parents, doctors, physiotherapists, nutritionists and club staff. This should cover supplement risk, strict liability, misleading marketing, third-party testing, documentation of advice, and referral to qualified professionals. The IRIS report highlights that athletes often rely on informal sources such as trainers, friends and family, while coaches, trainers and parents may lack formal nutrition education.

6. Cooperate across Europe

NADOs should share intelligence with other NADOs and relevant European authorities on contaminated products, high-risk brands, suspicious sellers, fake certification badges, adverse events and supplement-related anti-doping cases. A coordinated European alert system would help identify cross-border risks and prevent unsafe products from continuing to circulate.

7. Concise policy statement

NADOs and anti-doping authorities should strengthen supplement-related prevention by embedding supplement risk education in clean sport programmes, developing practical risk-analysis tools, monitoring high-risk claims and distribution channels, training athlete support personnel, and creating reporting mechanisms for suspicious or contaminated products. These actions should be coordinated with food safety, consumer protection and public health authorities to reduce inadvertent doping, protect athlete health and improve trust in clean sport.





4. ATHLETE SUPPORT PERSONNEL

Athlete Support Personnel (ASP), including coaches, trainers, sport nutritionists and dietitians, physicians, physiotherapists, strength and conditioning staff, team managers and parents in youth sport, should be recognised as key actors in supplement-related decision-making. Although athletes remain personally responsible under strict liability, ASP can also be held accountable for anti-doping rule violations, including administration, attempted administration, trafficking, possession, complicity or encouraging the use of prohibited substances. Therefore, ASP should not only avoid recommending unsafe products, but also actively help athletes make informed, evidence-based and low-risk decisions. This is particularly important because the IRIS report shows that many athletes rely on informal sources such as trainers, friends and family for supplement advice, while coaches, trainers and parents often lack formal nutrition education. The report also highlights that supplement use is a risk factor for doping, that contamination may involve prohibited substances, and that athletes frequently lack sufficient knowledge about active ingredients and side effects.

Recommended actions

1. Make supplement-risk training mandatory for ASP

Sport organisations, clubs and federations should require periodic training for ASP on:

- nutritional supplement benefits, limitations and risks;
- contamination with prohibited substances;
- misleading marketing and high-risk claims;
- strict liability and ASP responsibilities under anti-doping rules;
- third-party batch testing and product verification;
- safe referral pathways to qualified sport nutrition or medical professionals.

Training should be updated regularly, as supplement products, marketing tactics and prohibited substance lists change over time.

2. Establish a “do not recommend unless verified” rule

ASP should not recommend, distribute, sell or administer supplements unless the product has been assessed through a structured risk process. At minimum, ASP should check:

- whether the supplement is genuinely necessary;
- whether there is credible evidence of benefit;
- whether the athlete has received qualified nutrition or medical advice;
- whether the exact product and batch have independent third-party testing;
- whether the product has a batch number, expiry date, manufacturer details and full ingredient list;
- whether the product is free from high-risk claims such as “anabolic,” “testosterone booster,” “legal steroid,” “extreme fat burner” or “WADA safe.”
- whether the product is visually aggressive using large font, intense colour schemes, pumped muscles, before-after effects etc.





Products purchased through social media, informal sellers, gyms or unverified websites should be treated as high-risk and should not be recommended.

3. Require documentation of supplement advice

ASP should document all supplement-related advice given to athletes. This should include the reason for use, product name, batch number, source of purchase, evidence considered, third-party testing status, dosage guidance, and the professional who approved the recommendation. This protects athletes and ASP by creating a transparent record of decision-making.

4. Separate education from commercial interests

ASP should not sell, promote or receive incentives for recommending specific supplement brands to athletes. Any relationship with manufacturers, retailers or sponsors should be declared. Clubs and federations should adopt conflict-of-interest policies preventing ASP from using their authority to promote commercial products.

5. Strengthen the role of sport nutritionists

Professionally qualified and accredited sport nutritionists and dietitians who are responsible for athletes' dietary plans should apply a food-first approach and recommend supplements only when there is a clear nutritional, medical or performance rationale. They should also educate athletes about dosage, timing, interactions with medication, possible side effects, and contamination risks.

6. Create a clear referral and reporting pathway

- products without batch numbers or manufacturer details;
- suspected side effects;
- products with misleading claims;
- counterfeit products;
- supplements sold informally in gyms or via social media;
- products suspected of containing prohibited substances.

7. Concise policy statement

Athlete Support Personnel should receive mandatory and regularly updated education on supplement risks, anti-doping responsibilities and safe decision-making. They should not recommend, sell, distribute or administer supplements unless there is a clear need, credible evidence of benefit, qualified professional input and verifiable product quality, including batch-level testing where possible. ASP should document all supplement advice, avoid commercial conflicts of interest, and report suspicious or high-risk products. This will reduce inadvertent doping risk, protect athlete health and strengthen the integrity of sport.





5. ATHLETES

Athletes should treat nutritional supplements as products that may carry health, financial and anti-doping risks, even when they are legal, widely available or recommended by trusted people. Supplement use should not be routine. It should be considered only when there is a clear nutritional, medical or performance-related need, and after advice from a qualified professional. This is important because the IRIS report shows that supplement use is linked to both intentional and inadvertent doping, that contamination may result from poor manufacturing and weak quality control, and that many athletes do not fully understand supplement ingredients, side effects or contamination risks.

Recommended actions

1. Apply a “food first, supplements only when necessary” approach

Athletes should avoid using dietary supplements unless there is a clear reason to do so. Before taking any product, they should ask:

- Do I really need this supplement?
- Can the same goal be achieved through diet, recovery, training or medical support?
- Is there reliable evidence that this product works?
- Has a qualified sport nutritionist, doctor or pharmacist advised me to use it?

Avoiding unnecessary supplement use is one of the most effective ways to reduce health risks and the possibility of an inadvertent positive doping test.

2. Check the product before use

Athletes should never rely only on the product label, brand reputation, social media advertising or advice from friends, teammates or fitness instructors. Before using a supplement, they should check whether the product has:

- a clear batch or lot number;
- expiry date;
- full manufacturer and distributor details;
- complete ingredient list;
- recommended daily dose;
- warning statements;
- independent third-party testing;
- Evidence that the exact batch, not only the brand, has been tested.

The IRIS report found that only 28% of athletes consistently verified supplement quality through third-party testing, despite widespread use and concerns about contamination.





3. Use only independently batch-tested products

Athletes who decide to use supplements should choose products that have been tested by reputable independent certification programmes, such as Informed Sport or similar recognised schemes. However, certification should not be understood as a guarantee of complete safety. Athletes should verify the exact product name and batch number and keep evidence of this check.

Keep a supplement record

Athletes should keep a personal supplement log that includes:

- product name;
- manufacturer;
- batch or lot number;
- expiry date;
- place and date of purchase;
- dosage used;
- date and time of use;
- screenshots of online product pages at the time of purchase;
- name of the professional who recommended it;
- evidence of batch testing, where available.

They should also photograph the product, label, batch number and receipt. Where possible, they should keep a small, sealed amount of the supplement from the batch they used. This documentation may be important if a health problem or doping issue arises.

5. Avoid suspicious or high-risk products

Athletes should avoid products that:

- lack a batch number, expiry date or clear manufacturer;
- have unclear or incomplete ingredient lists;
- are sold through social media, informal sellers, gyms or unverified websites;
- use fake or unverifiable certification badges;
- promise rapid muscle gain, strength increases or fat loss;
- use terms such as “anabolic,” “legal steroid,” “testosterone booster,” “extreme,” “hardcore,” or “WADA safe”;
- contain complex “proprietary blends” without clear dosages;
- are marketed as producing unusually fast or dramatic results.

The IRIS report identified misleading claims, PED-associated terminology and exaggerated efficacy promises in the supplement market, which may encourage risky decisions.

6. Understand personal responsibility

Competitive athletes should remember that they are responsible for any prohibited substance found in their body, even if it entered through a contaminated supplement. A product being legal, natural, popular or available in a shop does not mean that it is safe for anti-doping purposes.





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7. Concise policy statement

Athletes should avoid unnecessary supplement use and should only use products when there is a clear need, qualified professional advice, credible evidence of benefit and verifiable batch-level testing. They should avoid suspicious products, keep detailed records of all supplements used, and remain aware that they are personally responsible for any prohibited substance found in their body. This approach can reduce health risks, financial harm and inadvertent doping violations.

Supplement-checking checklist: what athletes and consumers should look for

Before using any nutritional supplement, athletes should apply a simple rule: do not use the product unless its need, benefit, safety and traceability can be checked. Labels and marketing claims alone are not enough. The IRIS report shows that athletes value clear labelling, third-party certification and evidence-based claims, but also recognise that labels may be incomplete, misleading or insufficient to guarantee safety.

Step 1: Check whether the supplement is necessary

Question	What to do
Do I really need this supplement?	Use supplements only when there is a clear nutritional, medical or performance-related reason.
Can food, training, sleep or recovery solve the issue?	Apply a “food first” approach before considering supplementation.
Have I asked a qualified professional?	Seek advice from a sport nutritionist, doctor, pharmacist or qualified dietitian, not only from friends, influencers or fitness instructors.





Step 2: Check the label

What to look for	Why it matters
Full list of ingredients	Avoid products with incomplete, unclear or hidden ingredients.
Exact dosage per serving	Check that the amount of each active ingredient is clearly stated.
Recommended daily intake	Helps prevent excessive use or unsafe combinations.
Side effects and warnings	The label should mention possible risks, not only benefits.
Expiry date	Avoid products with no expiry date or an expired date.
Batch or lot number	Essential for traceability and batch testing.
Manufacturer and distributor details	Avoid products without a real, traceable company behind them.

Step 3: Check quality and testing

What to check	Recommended action
Is the product batch tested?	Check whether the exact batch number has been tested, not only the brand.
Is the certificate genuine?	Verify the certificate on the certifier's website or through a QR code.
Is the certification recognised?	Look for reputable third-party schemes, such as Informed Sport, NSF Certified for Sport, or similar recognised programmes.
Does the label say "WADA approved" or "doping-free"?	Treat this as a red flag. WADA does not approve supplements, and no supplement can be guaranteed completely risk-free.
Are testing results available?	Prefer products where testing information is transparent and easy to verify.





The IRIS report recommends expanding the role of third-party certifications and testing because these can increase consumer confidence, although they should not be treated as a complete safety guarantee.

Step 4: Check marketing claims

Red flag claim	Why it is risky
"Rapid fat loss"	May indicate exaggerated or misleading marketing.
"Extreme muscle gain"	Often associated with unrealistic or drug-like claims.
"Anabolic"	May blur the boundary between supplements and prohibited substances.
"Legal steroid"	Strong warning sign; avoid the product.
"Testosterone booster"	High-risk claim, especially for athletes.
"Pharmaceutical strength"	Suggests drug-like effects and should be treated with caution.
"100% safe for athletes"	No supplement can guarantee zero doping risk.

Participants in the IRIS report were particularly sceptical of exaggerated claims such as "instant fat loss" and "massive muscle gains," and the report recommends that labels should avoid exaggerated claims and focus on evidence-based benefits.

Step 5: Check the source of purchase

Safer practice	Avoid
Buy from regulated pharmacies, reputable retailers or official brand websites.	Buying from social media profiles, informal sellers, gyms, or unverified online shops.
Keep the receipt and order confirmation.	Buying products with no proof of purchase.
Check that the seller is authorised.	Products imported or resold informally without traceability.





Step 6: Keep your own record

The IRIS report recommends expanding the role of third-party certifications and testing because these can increase consumer confidence, although they should not be treated as a complete safety guarantee.

Athletes should keep a supplement log including:

- product name;
- brand and manufacturer;
- batch or lot number;
- expiry date;
- date and place of purchase;
- dose used;
- date and time of use;
- name of the professional who recommended it;
- certificate or screenshot of batch-testing verification;
- photo of the front label, ingredient list and batch number.

Where possible, keep a small sealed amount of the product from the same batch. This can be useful if a health concern or anti-doping issue arises.

Final decision rule

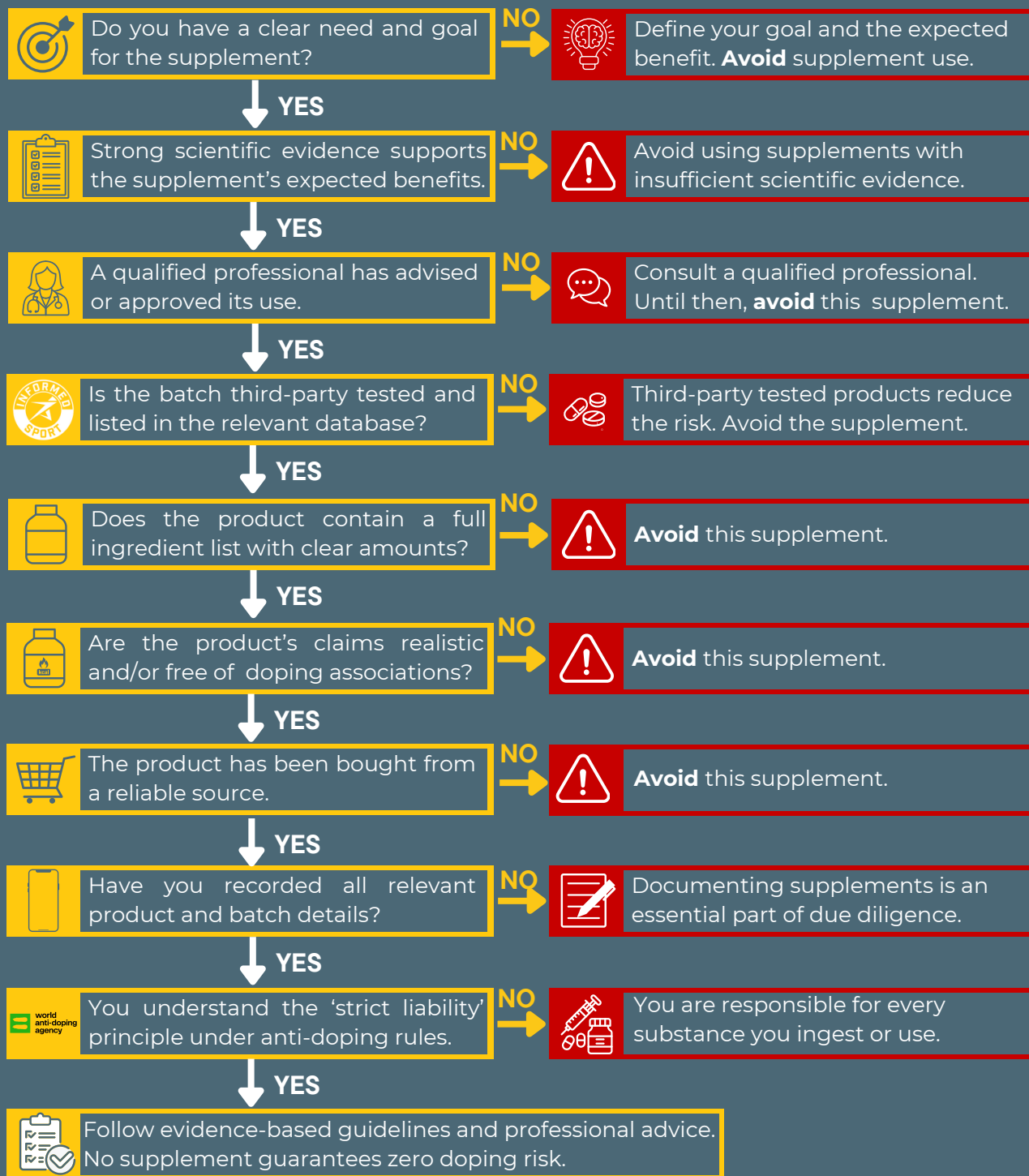
Use only products that pass all of the following checks:

Decision check	Yes/No
There is a clear need for the supplement.	
A qualified professional has advised or approved its use.	
The full ingredient list and dosage are clear.	
The product has a batch number, expiry date and real manufacturer.	
The exact batch has been independently tested.	
The certificate can be verified.	
The product does not make exaggerated or doping-associated claims.	
The product was bought from a reliable source.	
I have kept a record of the product, batch and use.	

If any answer is “No,” the safest recommendation is: do not use the supplement until the risk has been clarified.



Supplement Decision Tree





CONCLUSION

The evidence collected through the IRIS project highlights a clear need for coordinated policy action on nutritional supplements in sport. Supplement use is widespread among athletes and exercisers, but this use often takes place in a market environment where labelling is not always clear, marketing may exaggerate benefits, contamination risks are insufficiently understood, and regulatory systems do not always provide adequate protection. The report shows that athletes often recognise contamination as an important issue, but many do not perceive themselves to be personally at risk and only a minority consistently verify supplement quality through third-party testing.

The policy recommendations presented in this document therefore emphasise a shared-responsibility approach. Manufacturers should provide transparent labelling, accurate ingredient information, warnings about side effects and overdose risks, and verifiable batch-level testing. Regulators should strengthen market surveillance, restrict misleading claims, and improve controls over counterfeit, adulterated and illegally distributed products. NADOs and anti-doping authorities should expand education, reporting mechanisms and cooperation with public health and consumer protection bodies. Athlete support personnel should receive regular training and avoid recommending products unless there is clear evidence of need, benefit and reduced risk. Athletes should be encouraged to follow a food-first approach, use supplements only when necessary, check product quality carefully, and keep detailed records of all products consumed.

A central priority is to move from general awareness to practical risk reduction. This requires clearer labels, stricter standards for product testing, recognised quality certifications, stronger penalties for misleading marketing, and accessible tools that help athletes and consumers assess whether a supplement is necessary, effective and low risk. The IRIS findings also support the expansion of third-party certification and testing, while recognising that certification improves confidence but cannot guarantee complete safety.

Public education remains equally important. Current awareness efforts are often led mainly by anti-doping organisations, but the risks associated with nutritional supplements extend beyond elite sport and should also be addressed by public health authorities, consumer protection agencies, sport federations, schools, universities, healthcare professionals and fitness-sector organisations. Campaigns should focus on practical topics, including how to recognise counterfeit products, how to check batch numbers and certification, why “natural” or “legal” does not always mean safe, how contamination can lead to health harm or inadvertent doping, and why exaggerated claims such as rapid fat loss or extreme muscle gain should be treated with caution.

Overall, safer supplement use cannot be achieved through individual responsibility alone. It requires stronger regulation, responsible manufacturing, evidence-based education, coordinated surveillance and informed decision-making across the entire sport and consumer environment. By implementing these measures, stakeholders can reduce health risks, protect athletes from inadvertent doping, improve trust in the supplement market, and support a culture of clean, safe and responsible sport.





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