## Assessment of Vitamin D status in Ethnically Diverse Populations

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Vitamin D supports bone health, muscle repair and immune function in athletes, and around 30% of adult and 39% of adolescent elite athletes present with inadequate status. The talk opens with a brief overview of the vitamin D endocrine system and the evidence underpinning current targets for athletes, before highlighting a key limitation: those targets, and the thresholds used to define inadequacy and deficiency, come largely from people of European ancestry. Managing athletes of mixed ancestry is the most common vitamin D question we receive, and a familiar scenario is the athlete of African ancestry who adheres to supplementation yet still returns a “low” result. This reflects the so called vitamin D paradox, in which lower total 25[OH]D sits alongside preserved or superior bone mineral density and lower fracture risk. Our own earlier work in a large, ancestrally diverse athlete cohort suggested bioavailable vitamin D better reflected bone health than total 25[OH]D. Later evidence showed the binding protein immunoassay was biased against isoforms more common in people of African ancestry, undermining that interpretation. Differences in vitamin D metabolites, pathway gene variants, calcium handling and skeletal sensitivity to PTH suggest lower total 25[OH]D may reflect a different equilibrium rather than a true deficiency, and mistaking population variation for individual pathology can lead to escalating doses that carry real risk. The talk will conclude with a practical decision tree for practitioners and medical staff, setting out when to supplement conservatively, when to assess PTH, calcium, the clinical picture and diet, and when to refer to a sport and exercise medicine physician.

## When Does a Food Become a Supplement?

The sport nutrition world has now largely adopted a food first, but not food only, approach, recognising that supplements have a legitimate place in elite sport when used appropriately. With this has come broad acceptance that any supplement used by an athlete should be batch tested through schemes such as

Informed Sport. The rapid growth of sports foods, such as protein bars, drinks and fortified products, has created a new problem. Are these foods or supplements, and do they need testing? Considerable effort has gone into separating the two, yet no clear line has emerged. This talk will argue that we may have been asking the wrong question. To an anti-doping laboratory, a failed test is a failed test, whatever category the product falls into. The 2027 World Anti-Doping Code reflects this by replacing the narrow term "contaminated product" with the broader concept of a "contaminated source", recognising that prohibited substances can reach athletes through food, drink, the environment and contact, not just supplements. The wider anti-doping world appears to have moved on from the definitional debate, leaving sport nutrition as one of the few groups still searching for an answer. The more useful question is not what a product is called but what risk it carries. Drawing on contamination evidence and case examples, the talk will consider what drives that risk, including ingredients, manufacturing, supply chain, and how often and how much an athlete consumes, and how practitioners can assess these consistently to decide when testing is warranted.

## Paper to Podium in Practice: Building Performance Nutrition Support for the British and Irish Lions

The British and Irish Lions present a unique applied challenge. Players from four nations, each with their own club and national nutrition practices, come together for a short preparation window before a gruelling tour. This case study describes how the Paper to Podium framework was used to build performance nutrition support under these constraints across three areas: a squad supplement policy and strategy built on our Food First, but Not Always Food Only, philosophy; a travel and jet lag strategy translating the evidence on meal timing, light, sleep and hydration into a plan that worked for a large touring party; and in game and post-game recovery strategies developed from the rugby specific research from our group at LJMU. Throughout, the focus will be on the translational decisions: what the evidence said, what was feasible on tour, and where compromises had to be made. The talk will conclude by reflecting on why it worked. Drawing on our recent work applying Bourdieu's concepts of field, capital and habitus to performance nutrition practice, it will argue that the science was only part of the

story. Evidence only reaches the athlete when practitioners have the credibility and relationships to deliver it, and in a hierarchical field, the person at the top largely decides whether that happens. Here, our leader created a culture of trust, valued his staff and empowered them to deliver which was as important as any nutritional intervention.