Probiotics in NCAA Programs
Probiotic supplements are popular, but NCAA programs need a doctor’s approval to provide them to their athletes. What guidelines exist for their recommendations and use?

SUPPLEMENTATION
- Supplementation includes probiotics (live cultures), prebiotics (substances that promote growth of beneficial microbes), or synbiotics (a combination of both).
- Recommendations from practitioners are often general and inconsistent and rely on small studies or expert opinion.
- Recommendations are unlikely to account for strain-specific effects. High count, multi-strain brands may be used as a "shotgun approach" without supporting evidence.

EVIDENCE-BASED PRACTICE
- Evidence for probiotic therapy is strongest for antibiotic-associated diarrhea, but species and strains vary.
- One review identified treatment of *Clostridium difficile* related diarrhea and respiratory tract infections to be evidence-based but again lacked consistency.
- Further studies are needed to evaluate use in irritable bowel syndrome, as a coadjuvant therapy for *Helicobacter pylori*, and other use cases with promising initial results.

AT A GLANCE: CLINICAL PROBiotic USE
- The microbiome is an emerging therapeutic target.
- Probiotic supplements are widely available and generally viewed as beneficial and benign.
- Guidelines are lacking for clinical use, and nonexistent for elite athlete populations.
- A therapy for antibiotic-associated diarrhea is most evidence-based application.
- Reducing infections of the upper respiratory tract is a key area of interest for college athletics.
- Emerging research suggests probiotics may not have a lasting impact on some microbiomes.

UTILIZATION IN ELITE ATHLETES
- Immune function, especially with upper respiratory tract infections, was commonly investigated. Multiple studies report positive effects but lack consistency.
- Though evidence is not strong, some studies suggest the microbiome changes may modulate the immune system and some parameters of performance and recovery.
- More rigorous studies are needed to assess the microbiome’s influence on health and performance.

A CHANGING PARADIGM?
Probiotics are commonly perceived to alter the composition of the microbiome. Emerging research suggests the effects could be merely transitory for some people.
- Persistent colonization may occur in less than 1/3 of people and may be determined by the microbiome’s carbohydrate utilization, as well as human genetic factors.
- Use of probiotics after antibiotics may actually delay microbiome recovery compared to controls.