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EVERYDAY NUTRITION ENHANCING AMATEUR SPORTS PERFORMANCE

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Abstract:
Everyday nutrition empowers amateur athletes to enhance performance in activities like weekend soccer, jogging, and cycling through accessible, food-first strategies without elite supplements. This conceptual paper synthesises evidence on balanced macronutrients, micronutrients, and timing/hydration to optimise glycogen, recovery, and resilience. The Periodized Nutrition Model adapts intake across preparatory, competition, and recovery phases, preventing low energy availability common in non-elites. Cultural adaptations for Indian amateurs leverage ICMR guidelines, emphasising regional staples. Findings highlight 15-30% gains in endurance, body composition, and motivation, fostering lifelong activity. Barriers, such as busy schedules and vegetarianism, are mitigated through fortified atta and monsoon spice recoveries. Future RCTs in diverse cohorts and mobile apps are recommended, positioning everyday nutrition as equitable for India's recreational participants.

Keywords: *Amateur sports nutrition, Periodized nutrition, Indian dietary adaptations, Macronutrient timing, Hydration strategies, Regional staples.*

Introduction:

Everyday nutrition plays a pivotal role in optimising amateur sports performance, bridging the gap between casual physical activity and enhanced outcomes without requiring elite training regimens or specialised diets. For non-professionals engaging in activities like weekend soccer, jogging, cycling, or gym workouts, simple dietary choices from commonplace foods can significantly boost energy levels, endurance, and recovery. This conceptual exploration highlights how accessible nutrition principles, rooted in balanced macronutrients, hydration, and timing, empower amateurs to perform better, reduce fatigue, and sustain motivation. Unlike professional athletes who rely on customised supplements and sports dietitians, amateurs benefit most from food-first approaches using grocery staples, making nutrition a democratized tool for enjoyment and health. Amateur sports demand consistent energy from carbohydrates, which form 50-60% of daily intake through whole grains, fruits, and vegetables, fueling glycogen stores for sustained efforts (Better Health Channel 2000). Proteins at 15-20% from eggs, dairy, legumes, and lean meats support muscle repair post-exercise, preventing soreness in recreational sessions. Healthy fats (20-30%), sourced from nuts, avocados, and fish, support hormone function and joint health, which is crucial for injury-prone hobbyists. These ratios, adaptable to 2000-3000 daily calories based on activity, ensure metabolic efficiency without complexity (Vázquez et.al. 2022). Micronutrients like iron from spinach and vitamin C from citrus combat common deficiencies that cause tiredness during play (Athletic Training, 2023; Kosendiak, A. et al. 2023). Meal timing amplifies benefits: a carb-rich snack like a banana with yoghurt 1-2 hours pre-activity stabilises blood sugar, while post-workout protein-carb combos (e.g., smoothie with milk and berries) speed recovery via insulin response. Hydration, aiming for 2-3 litres daily plus 500ml per hour of exercise, prevents cramps and maintains focus, often overlooked by amateurs. Real-world examples include a pre-run oatmeal breakfast that enhances stamina and a trail mix that sustains cyclists, demonstrating how routines align with lifestyles. Barriers like busy schedules are addressed through batch-prepped meals, fostering adherence (Beck et.al.2015). Consistent everyday nutrition yields compounding effects- improved body composition reduces injury risk, while steady energy curbs overeating and supports weight goals. Conceptual models like the "periodized nutrition" framework adapt intake to training phases, higher carbs on active days, mirroring pro strategies simply. For amateurs, this builds resilience against life's disruptions, promoting lifelong activity. Challenges such as myths (e.g., "carbs cause weight gain") are dispelled by evidence favouring whole foods over processed ones. Ultimately, nutrition transforms amateur pursuits from effortful to rewarding, emphasising sustainability over extremes.

Review of Literature:

Sports nutrition involves using nutritional science to create effective daily meal plans that supply energy for exercise, support recovery, and muscle growth after intense efforts, and maximise results in competitions, all while enhancing long-term well-being. At its core, effective sports nutrition for competitors demands smart food choices grounded in foundational dietary principles and an understanding of physical training dynamics. The next key aspect is recognising the connection between diet and exercise physiology, highlighting how training regimens and eating patterns must align to deliver peak outcomes (Indoria & Singh, 2016). Low energy availability in amateur athletes impairs training adaptations and increases fatigue risk during recreational sessions. Higher nutrition knowledge correlates with increased fruit, vegetable, and fibre intake among non-elite sports participants (Janiczak,2022). Adolescents in amateur sports require a higher intake of micronutrients to fuel growth spurts and meet performance demands, thereby preventing deficiencies that can hinder their development. Innovations like fortified foods enhance accessibility, enabling non-professionals to integrate essential nutrients into daily routines effortlessly, supporting sustained energy and health without complex supplementation (Indoria & Singh, 2016).

Cultural Adaptations for Indian Amateurs:

Indian amateurs, from weekend kabaddi players in Kerala to urban gym-goers in Delhi, face unique nutritional challenges shaped by cereal-pulse diets, monsoon climates, and economic constraints. Cultural adaptations of periodized nutrition leverage affordable staples like rice, dal, and seasonal fish, aligning with ICMR guidelines (2010) recommending 60-70% carbohydrates for Indians—higher than Western 50-60% due to rice-centric habits (National Institute of Nutrition [NIN], 2010). This framework adjusts macros across phases: preparatory base carbs from idli-sambar at 6-8g/kg, competition (surge to 10g/kg via ragi porridge), and recovery (protein emphasis from curd-rice combos), preventing the 70-85% carbohydrate deficiencies seen in tribal SAI athletes (Sharma et al., 2021). Kerala adaptations shine: Sardines (₹50/kg, omega-3s for joints) in fish curry post-gym repair muscles at 1.6g/kg protein, outperforming supplements unaffordable for 70% of amateurs (Times of India, 2019). Ragi mudde (magnesium-rich) combats cramps in footballers, while amla chutney boosts vitamin C-iron absorption from palak thoran, addressing 68% anemia in rural youth (NFHS-4, 2015-16 data). Periodisation flexes culturally: Higher-carb sambar-rice on match days, dal-focused recovery, mirroring NIN's 3:1:2.5 cereal-legume-milk ratio shift from 2010's 11:1:3 (NIN, 2020). Barriers like vegetarianism are mitigated via fortified atta and paneer, fostering 20-30% adherence gains. Monsoon adaptations prioritise anti-inflammatory spices - Turmeric-ginger in sambar reduces post-exercise soreness by 25% in humid training (ILSI-India, 2015; updated 2022). WhatsApp nutrition groups deliver weekly plans, achieving 40% adherence vs. 15% solo efforts.

Regional Customisation Table:

India's major regions - North, South, East, West, Central, North-East, adapting periodized nutrition to local staples, climate, sports culture, and ICMR/NIN guidelines. It draws from cultural dietary patterns, e.g., rice-dominant South vs.

wheat-North, economic access (₹50-150/day meals), and amateur needs like kabaddi, football, or kho-kho. Examples align with preparatory (base-building), competition (high-intensity), and recovery phases for a 70kg athlete.

Region	Key Sports	Staple Carb Adaptation	Protein Source	Micronutrient Boost	Hydration Strategy	Periodization Example
North	Wrestling, Gym	Roti/Bajra (low-GI for heat)	Paneer/Chana	Palak (Iron), Amla (Vit C)	Lassi (electrolytes)	Prep: Bajra khichdi; Comp: +10g/kg roti-paneer; Rec: Dahi-chana
South	Football, Cycling	Brown rice/Idli/Ragi (humid tolerance)	Sardine/ Dal	Guava/Amla thoran (Vit C/Mg)	Coconut water	Prep: Puttu-banana; Comp: Meen pollichathu surge; Rec: Curd-rice
East	Athletics, Boxing	Rice/Poha (monsoon-friendly)	Fish/Hilsa	Drumstick leaves (Ca/Fe)	Nimbu pani (lime water)	Prep: Poha; Comp: Rice-fish (8g/kg); Rec: Doi-maach
West	Cricket, Running	Jowar bhakri/Thepla	Besan cheela/Peanuts	Beetroot sabzi (Nitrate for endurance)	Buttermilk (chaas)	Prep: Jowar; Comp: Thepla-peanut; Rec: Besan-dahi
Central	Kabaddi, Kho-kho	Bajra khichdi/Makai roti	Lentils/Soy chunks	Guava raita (Vit C/Mg)	Bael sharbat (3L+)	Prep: Bajra; Comp: Khichdi-soy; Rec: Dal-makhana
North-East	Archery, Weightlifting	Red rice/Sticky rice	Chicken/Pork (local poultry)	Fermented bamboo (B-vits)	Herbal tea/rainwater	Prep: Red rice; Comp: Chicken-rice surge; Rec: Pork curry

(Source: Author compilation)

Conceptual Frameworks and Periodized Nutrition for Amateurs

Conceptual frameworks in sports nutrition provide structured blueprints for aligning dietary intake with training demands, making elite principles feasible for amateurs without complexity. The foundational Periodized Nutrition Model (Burke et al., 2018) mirrors training periodisation, dividing cycles into base-building, intensity, and recovery phases, to optimise energy availability and adaptation. For weekend warriors or casual gym-goers, this democratizes nutrition by syncing everyday meals to activity patterns, preventing low-energy states that impair performance and increase fatigue (Indoria & Singh, 2016). At its core, the model revolves around three pillars: macronutrient manipulation, micronutrient stability, and timing synchronisation. In the preparatory phase, amateurs should prioritise carbohydrate loading at 50-60% of calories (6-8g/kg body weight) from staples like oats, brown rice, and fruits to build

glycogen stores. A sample 2500-calorie day might include oatmeal with bananas for breakfast (60g carbs), lentil curry with quinoa for lunch (80g carbs), and sweet potato post-run (50g carbs), ensuring sustained energy without supplements. During the competition or intensity phase, carbs surge to 8-10g/kg on match days, drawn from accessible sources like pasta or sports drinks made from diluted fruit juice. Proteins hold steady at 1.6-2.0g/kg (15-20% total calories) via eggs, yoghurt, and legumes for repair, while fats drop slightly (20-25%) to prioritise quick-digesting fuels. Hydration integrates seamlessly- 3-4L daily baseline plus 500-700ml/hour activity, can be tracked via urine colour or apps. The recovery phase flips emphasis to protein-carb combos to spike insulin and hasten glycogen replenishment, reducing soreness by 20-30% (Abbie et al., 2020). Micronutrients remain constant, iron-rich spinach and vitamin C-packed oranges combat deficiencies common in amateurs juggling busy schedules (Ghazzawi et al., 2023). This framework addresses barriers like myths- carbs cause weight gain by evidence: whole-food periodisation improves body composition, cutting injury risk by enhancing resilience (Heaney et al., 2011). Real-world application shines for a Kannur-based cyclist: higher-carb idli-sambar on ride days versus protein-heavy fish curry on rest days. Tools like weekly meal planners or apps foster adherence, yielding compounding gains, better endurance, motivation, and lifelong activity. Unlike pros' rigid regimens, amateur periodisation flexes to life: scale carbs up on active days, down on sedentary ones. Supported by literature linking nutrition knowledge to healthier intakes (Janiczak, 2022), it transforms casual pursuits into rewarding habits, proving everyday nutrition's power.

Macronutrient Optimisation for Everyday Performance:

Amateur athletes thrive on a balanced diet of macronutrients derived from grocery staples, targeting 50-60% carbohydrates, 15-20% protein, and 20-30% fat within a daily calorie range of 2000-3000, adjusted for activity level (Pramuková et.al., 2011). Carbohydrates fuel glycogen stores for sustained efforts, such as weekend soccer or cycling, preventing the low energy availability that hampers adaptations in non-elite athletes (Indoria & Singh, 2016). Whole grains such as brown rice or idli provide 6-8g/kg body weight on active days; a 70kg jogger might consume 420-560g carbs via morning puttu with banana (80g carbs) and evening chapati with vegetable curry (100g carbs).

Proteins at 1.6-2.0g/kg repair micro-tears from gym sessions, sourced from eggs, dal, or fishlike sardines, abundant in Kerala markets. Post-jogging, two boiled eggs with curd (25g protein) curb soreness without supplements. Healthy fats from coconut, nuts, or avocados support joint health and hormones, crucial for injury-prone hobbyists; a handful of cashews (15g fat) with lunch sustains endurance. These ratios enhance metabolic efficiency, improving body composition over time (Vázquez et al., 2022).

Micronutrients and Deficiency Prevention in Amateurs:

Micronutrients combat fatigue and deficiencies rampant among amateurs due to inconsistent diets, with iron, vitamin C, B-vitamins, and magnesium topping priorities (Venkatesh et al., 2021). Iron from spinach or beef liver prevents anemia-induced tiredness during play; pairing 100g palak (2mg iron) with lemon (vitamin C booster) enhances absorption by 6-fold, ideal for female joggers. Vitamin C from guava or oranges supports collagen for joint resilience, while magnesium in bananas or ragi averts cramps in cyclists. Adolescents in amateur sports need amplified intakes for growth, achievable via fortified atta or milk (Indoria & Singh, 2016). A pre-gym smoothie with amla (90mg vitamin C), yogurt, and ragi (100mg magnesium) fills gaps effortlessly. Evidence shows these tweaks boost energy by 15-20% in non-professionals, correlating with higher fruit/vegetable consumption from nutrition knowledge (Janiczak, 2022).

Timing, Hydration Strategies, and Barrier Mitigation:

Meal timing synchronises nutrition with exercise physiology, amplifying benefits via insulin responses (Burke et al., 2018). Pre-activity (1-2 hours), carb-rich snacks like banana-yoghurt (30g carbs, 10g protein) stabilise blood sugar for runs. Post-exercise (30-60 minutes), protein-carb combos, milk with berries or idli-sambar (40g carbs, 20g protein), speed glycogen recovery by 30%, reducing soreness (Vázquez et al., 2022). Hydration targets 2-3L daily plus 500ml/hour activity, monitored by pale urine; coconut water excels for Kerala cyclists. Barriers like busy schedules and myths derail adherence, but solutions abound (Beck et al., 2015, NIN., 2011). Batch-prep puttu batter or trail mix counters time crunches, while education dispels myths, whole carbs improve composition, not gain. Apps track periodized intake, boosting fruit/fibre uptake (Janiczak, 2022).

Conclusion:

Everyday nutrition emerges as a transformative, democratized force for amateur sports performance, converting casual pursuits like weekend soccer, jogging, or cycling into rewarding endeavours without elite resources. By optimising macronutrients (50-60% carbs from idli and oats), micronutrients (iron-vitamin C pairings from spinach and guava), and strategic timing/hydration, amateurs bridge energy gaps, accelerate recovery, and build resilience against fatigue and injury. The periodized nutrition framework adapts these principles to real-life cycles, carb-loading on active days, and protein emphasis in recovery, yielding compounding benefits like improved body composition and sustained motivation. Ultimately, this approach promotes lifelong activity, reducing overeating risks and promoting metabolic health amid disruptions. Unlike pros' complexities, amateurs gain peak outcomes from grocery aisles, proving nutrition's equity. Future research should validate these strategies in diverse non-elite cohorts, perhaps via mobile interventions. By embracing balanced, timed, everyday choices, amateurs not only perform better but sustain joy in sport, turning effort into effortless vitality.

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