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PROFESSIONAL BASEBALL ATHLETIC TRAINERS SOCIETY

IN THE SPOTLIGHT: **FRANK NEVILLE**

Making a Difference

By: Magie Lacambra, M.Ed., ATC

When the love for a game and a network of great mentors leads to a successful career, one doesn't have to look further than Frank Neville.

Neville grew up in Kentucky playing high school baseball while also juggling time as a student athletic trainer. Neville went on to Western Kentucky University, under the guidance of athletic trainer Bill Edwards, where he majored in Health Education with a Minor in Athletic Training, and then the University of Kentucky, with graduate studies in Health Education. Having stayed close to home for college proved to be a fruitful choice for Neville as he was surrounded by many outstanding athletic trainers, including NATA Hall of Famers Al Green and Sue Stanley.

First there was Russ Miller, former Head AT at WKU and then with the Detroit Tigers. Also, Bobby Barton, legendary head athletic trainer at Eastern Kentucky University who hung out a lot at the UK training room. Richie Bancells was a GA for Barton at EKU and went on to be Head AT with the Baltimore Orioles with Brian Ebel as the Orioles' Minor League Medical Coordinator. Ebel hired Neville as the athletic trainer for the Orioles' Rookie Ball team in Bluefield, WV. This took place while Neville was still a graduate student at Kentucky, then as the assistant athletic trainer at WKU, requiring that he spend 9 months at school and the summer months in Bluefield for three consecutive years.

Neville's next move came in 1995 when the Orioles' assistant GM, Doug Melvin, took a job with the Texas Rangers and took Frank with him. Neville was given a clean slate with the Rangers as they did not have a minor league medical coordinator at the time, so he created the position as he thought it should be. In 2005 Melvin joined the Milwaukee Brewers as GM and once again took Neville with him. This year will be Neville's 20th season with the Brewers.

Since getting into professional baseball, Neville has worked tirelessly to give minor league medical coordinators a voice to help improve the lives of minor league athletic trainers and give them the necessary tools to provide appropriate medical care to the athletes they work with. "It is important for the MLB physicians to know and understand that we cannot have an ambulance on standby at the stadium during a game in Helena, MT. Having onsite physicians at games in Latin America is another challenge we face," expressed Neville. Together with Ron Porterfield (then of the Tampa Rays) this focus resulted in a minor league medical coordinators meeting taking place at the annual MLB Winter Meetings, where league medical personnel can hear directly from Minor League ATs regarding their needs. Initially only 8 teams sent a Minor League representative, growing to members from all 30 MLB teams attending now.

Another example of Neville's commitment to Minor League ATs is the Minor League Athletic Trainer of the Year Award. While this award dates back to 1990, it was when Neville became Committee Chair for this award under Richie Bancells's PBATS Presidency in the mid-2000s that the award achieved 100% voter participation and the committee was headed solely by minor league athletic trainers. Voted on by Minor League ATs for all 16 Minor League divisions, the final award is approved by the PBATS Executive Board. "Minor Leagues is where some of us want to be and where we feel we can make a difference," said Neville, "while some aspire to get to the Major Leagues. Your hard work and commitment recognized by your peers is what makes this award so special." Interestingly, several winners of the Minor League AT Award have gone on to join Big League medical staffs.

In addition to the award, Minor League Athletic Trainers also receive the 20-Year Service Award and 25-Year Service Ring from PBATS in recognition of long distinguished careers.

IN THIS ISSUE

As I talked with Frank, he couldn't help but recall the many people who helped shape him as an athletic trainer. He spoke of Roger Caplinger, VP, Medical Operations, Health and Safety for the Brewers, and how Caplinger empowers him and lets him know how valuable his contributions are to the Brewers organization. How Jamie Reed, Senior Director of Medical Services for the Texas Rangers, helped him evaluate a hamate fracture as a young athletic trainer. How often Mark Letendre, former Head AT with the San Francisco Giants and MLB Umpires AT, has taken his calls and served as a valuable sounding board. "This level of willingness to help is a direct result of the bond that PBATS members have, and how important it is for the history of PBATS to be shared with younger athletic trainers so they are aware of what it took to get where we are," said Neville.

Just as all of these mentors helped Neville shape how he identifies good skillsets when hiring athletic trainers, how he teaches young athletic trainers, and how he continues to advocate for the Minor League AT in particular, Frank wants to be remembered as a mentor himself. "I genuinely want to help and always be part of the solution. I took a big stand on helping develop the Minor Leagues and making conditions better for everyone," said Neville.

While Neville has no plans to leave the game anytime soon, he can rest assured that he has made a major impact on the profession for years to come.

NEWS AND NOTES

PBATS Hall of Fame Inductee

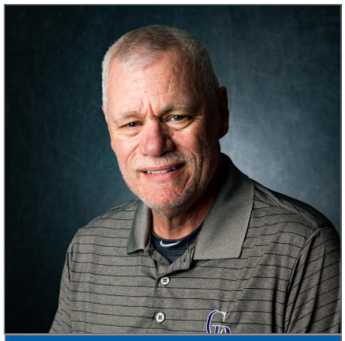
Richie Bancells

NATA Hall of Fame Inductee

Mark Letendre

2021 PBATS President's Distinguished Service Award

Jon Coyles



2021 PBATS Minor League Athletic Trainer of the Year

Mickey Clarizio

2021 PBATS Major League Staff of the Year

Atlanta Braves - George Poulis

2021 PBATS Major League Staff of the Year

Atlanta Braves - Mike Frostad

2021 PBATS Major League Staff of the Year

Atlanta Braves - Jeff Stevenson

2021 PBATS Major League Staff of the Year

Atlanta Braves - Jeff Porter

2021 PBATS MINOR LEAGUE ATHLETIC TRAINERS OF THE YEAR – INDIVIDUAL LEAGUE AWARDS –		
COORDINATOR	Corey Tremble	Detroit Tigers
TRIPLE-A EAST	Caleb Daniel	Toronto Blue Jays (Buffalo Bisons)
TRIPLE-A WEST	Carlos Olivas	Texas Rangers (Round Rock Express)
DOUBLE-A CENTRAL	Chris Whitman	St Louis Cardinals (Springfield Cardinals)
DOUBLE-A NORTHEAST	Scott Gallon	Boston Red Sox (Portland Sea Dogs)
DOUBLE-A SOUTH	Daniel Leja	Atlanta Braves (Mississippi Braves)
HIGH-A EAST	Victor Silva III	Pittsburgh Pirates (Greensboro Grasshoppers)
HIGH-A CENTRAL	Danny Accola	Kansas City Royals (Quad Cities River Bandits)
HIGH-A WEST	Damon Reel	Arizona Diamondbacks (Hillsboro Hops)
LOW-A EAST	Kirby Craft	Washington Nationals (Fredericksburg Nationals)
LOW-A SOUTHEAST	Wade Hebrink	Cincinnati Reds (Daytona Tortugas)
LOW-A WEST	Nick Faciana	Los Angeles Angels (Inland Empire 66ers)
ARIZONA COMPLEX	Mickey Clarizio	Colorado Rockies (ACL Rockies)
FLORIDA COMPLEX	Asja Morello	Minnesota Twins (FCL Twins)
DOMINICAN SUMMER	Derrick J Navarro	Cleveland Guardians (DSL Guardians)

2022 ALL STAR GAME ATHLETIC TRAINERS		
NATIONAL LEAGUE	Thomas Albert	Los Angeles Dodgers
	PJ Mainville	Chicago Cubs
AMERICAN LEAGUE	Brad Pearson	Boston Red Sox
	Mike Sandoval	Tampa Bay Rays

2022 FUTURE GAME ATHLETIC TRAINERS	
Mickey Clarizio	Colorado Rockies
Jimmy Southard	Los Angeles Dodgers

TRICK OF THE TRADE:

Implementation of Interval Throwing Programs for Professional Baseball Players: In-season, Off-season, and Return to Throwing

By: James Stone, Kansas City Royals, ATC, CSCS; Chris Delucia, Kansas City Royals, ATC; Brad Groleau, Kansas City Royals, ATC; Logan Gudde, Kansas City Royals, PT

America's pastime is made up of complex biomechanical movements. Whether it's swinging a bat, fielding, or throwing a ball, all require the body to have strength and endurance to complete the grind of a full season at the major and minor league levels. In this article we will focus on the need to prepare the body for a full season of throwing.

Every organization has some version of an interval throwing program (ITP) for their players to follow. What is an ITP you ask? It is a progressive, sport-specific regimen that gradually exposes an athlete to the demands they will experience upon a return to the sport.[1] The specifics of ITPs vary in many ways. Some are based on timed intervals, whereas others are based on a specific number of throws at a given distance. A new, popular type is velocity driven (Jager, Driveline), with others relying on the athletes to throw the distances required until they feel "warm." Whichever ITP you choose to follow, these metrics should be considered for it to be successful: position specificity (pitcher, infielders, outfielders, catcher), distance, volume, frequency, and intensity. Other important factors to be considered when constructing a good ITP is the time of year when the program will be used (off-season, pre-season, in-season). This matters because the intent changes. For example, an off-season program generally is lighter effort, distance, and frequency and is primarily utilized to keep the arm moving. A pre-season program is a progressive buildup to one's report date that incorporates position-specific practice and drills. An in-season program is generally daily catch, bullpen warm-up, pre-game prep, position-specific practice/drills, and game play. The last thing to consider are the disciplines that should be involved in the program design. Ideally, you have the luxury of a major league staff collaborating, which could include the team physician, ATCs, PTs, strength and conditioning coaches, and position-specific coaches.

A high amount of focus is placed on the pre-season throwing programs for pitchers due to the high incidence of upper extremity injuries. The intent is that the ITP is used to minimize athletes' injury risk by gradually and progressively preparing their bodies for the stresses associated with throwing. Such stresses are unique and can be replicated only by throwing a ball.[1] Accompanied by a dynamic warm-up prior to each throwing session, ITPs increase cardiac output and blood flow to working muscles, allowing for increased flexibility and decreased injury risk.[2] An ITP is constructed of a few parts. First, with catch play generally starting at 60 feet and extending out to 150 feet. Long toss (loosely any distance beyond 180 feet) is used to increase throwing endurance, velocity, shoulder strength and range of motion.[3] A crow hop, which is broken down into a hop, skip and throw, is used with these extreme distances regardless of the player's position. The goal is to use the lower body to create momentum, which in turn reduces stress on the shoulder and elbow joints when throwing.[2] Finally, most pitchers conclude their throwing sessions with flat ground. Flat ground is a shorter distance throw that incorporates pitching mechanics and specific pitch types. All of this buildup is in preparation for a pitcher to throw off the mound, which also has a buildup all its own. A sample pre-season buildup is seen in figure 1.[1]

Pitchers have a 34% higher incidence of injury compared with position players in Major League Baseball.[3] An ITP can reduce injury risk but likely cannot prevent it. A comprehensive shoulder strength and endurance program is needed year-round. With injury, there are typically three phases required to return to throwing. Phase 1: decrease pain and inflammation, normalize ROM, begin muscle reactivation, light strengthening, core and hip strengthening. Phase 2: continue to progress movement patterns, increase general strength exercises and manual resistance training, and initiate weight training. Phase 3: initiate plyometrics, progress strength training, full weight room participation, and most important, pass all return to sport/throwing testing (see figure 2). If a player is uninjured, a shoulder maintenance program modeled after phases 2 and 3 should be completed in conjunction with the ITP. One must remember that throwing is also an exercise that must be accounted for in the total workload volume.

When designing and using an ITP in conjunction with a structured rehabilitation program, the athlete should return to full competition status while minimizing any chance of reinjury. The program and its progression should be modified to meet the specific needs of each individual athlete. A comprehensive program consisting of a maintenance strength and flexibility program, appropriate warm-up and cool-down exercises, proper pitching mechanics, and progressive throwing will assist the baseball player in returning safely to competition.[1]

45-FT PHASE	60-FT PHASE	90-FT PHASE	120-FT PHASE	150-FT PHASE
STEP 1: A. Warm-up throwing B. 45 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 45 ft, 25 throws	**STEP 3:** A. Warm-up throwing B. 60 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 60 ft, 25 throws	**STEP 5:** A. Warm-up throwing B. 90 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 90 ft, 25 throws	**STEP 7:** A. Warm-up throwing B. 120 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 120 ft, 25 throws	**STEP 9:** A. Warm-up throwing B. 150 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 150 ft, 25 throws
STEP 2: A. Warm-up throwing B. 45 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 45 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 45 ft, 25 throws	**STEP 4:** A. Warm-up throwing B. 60 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 60 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 60 ft, 25 throws	**STEP 6:** A. Warm-up throwing B. 90 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 90 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 90 ft, 25 throws	**STEP 8:** A. Warm-up throwing B. 120 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 120 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 120 ft, 25 throws	**STEP 10:** A. Warm-up throwing B. 150 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 150 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 150 ft, 25 throws

180-FT PHASE	
STEP 11: A. Warm-up throwing B. 180 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 180 ft, 25 throws	**STEP 13:** A. Warm-up throwing B. 180 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 180 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 180 ft, 20 throws I. Rest 5-10 min J. Warm-up throwing K. 15 throws, progressing from 120 to 90 ft
STEP 12: A. Warm-up throwing B. 180 ft, 25 throws C. Rest 5-10 min D. Warm-up throwing E. 180 ft, 25 throws F. Rest 5-10 min G. Warm-up throwing H. 180 ft, 25 throws	**STEP 14:** Return to respective position or progress to **Step 14** in the Flat-ground table to the right.

FLAT-GROUND THROWING FOR BASEBALL PITCHERS	
STEP 14: A. Warm-up throwing B. 60 ft, 10-15 throws C. 90 ft, 10 throws D. 120 ft, 10 throws E. 60 ft (flat-ground) using pitching mechanics, 20-30 throws	**STEP 15:** A. Warm-up throwing B. 60 ft, 10-15 throws C. 90 ft, 10 throws D. 120 ft, 10 throws E. 60 ft (flat-ground) using pitching mechanics, 20-30 throws F. 60-90 ft, 10-15 throws G. 60 ft (flat-ground) using pitching mechanics, 20 throws

Note: All throws should be on an arc with a crow hop. Warm-up throws consist of 10 to 20 throws at approximately 30 ft. Throwing program should be performed every other day, 3 times per week unless otherwise specified by a physician or rehabilitation specialist. **Perform each step ____ times before progressing to next step.**

PROGRESS TO PHASE 2: THROWING OFF THE MOUND

45 ft = 13.7m; 60 ft = 18.3m; 90 ft = 27.4m; 120 ft = 36.6m; 150 ft = 45.7m; 180 ft = 54.8m

Figure 1

RETURN TO THROWING CRITERIA

	TESTS	GOAL
MOVEMENT QUALITY	Functional Movement Screen	> 1 all movements no asymmetries
RANGE OF MOTION	*Shoulder ROM* Shoulder ER Shoulder IR Shoulder Total Arc Shoulder Flexion Shoulder Horizontal Abduction *Elbow ROM* Elbow Flexion Elbow Extension Elbow Total Arc	 < 5 deg asymmetry < 10 deg asymmetry < 10 deg asymmetry < 5 deg asymmetry
STRENGTH (MICROFET HHD)	Scaption Shoulder ER Shoulder IR Shoulder ER/IR Ratio	 > 70%
ENDURANCE	Prone Endurance Test	30 reps @ 2% BW
CLOSED CHAIN STABILITY	Y Balance Test	< 4 cm asymmetry

Figure 2

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Strategies and Discussion Around Workload Management in Baseball

By: Eric McMahon, MEd, CSCS*D, RSCC*D; Coaching and Sport Science Program Manager;
National Strength and Conditioning Association (NSCA)

Introduction

With recent advances and growth in performance technology, attention has shifted toward the workload management of athletes. In 2022, the ACSM worldwide survey of fitness trends ranked wearable technology as the number one fitness trend of the year.[1] In professional baseball, player workload has traditionally been measured by pitch counts, inning limits, or games appearances. Advancements in athlete monitoring, digital video, marker-less motion capture, and embedded stadium technology have begun to change the way baseball movements are viewed and understood within training. This article provides insight into workload management strategies to promote best practices among practitioners.

Developing a Fatigue Management System

Monitoring practices are beneficial to evaluating player progress within training programs and competition. Effective workload management can detect fatigue, monitor performance capacity, inform injury risk, and be applied to daily recovery interventions.[2,3,4] As a result, increasingly scientific approaches are being used to develop training programs and help prevent injury.

Despite the growing number of internal and external load measures available, few methods of quantifying athlete workload have strong scientific support.[3,4] Experimental approaches are being developed to address the added complexity of interrelated performance measures for sports like baseball. For example, in-depth analysis is required to evaluate the workload of pitching or hitting in relation to anthropometric measurements, mechanical efficiency, arm angle, elbow-shoulder torque, hip-shoulder separation, and heart rate measures. Indeed, the ultimate goal for a health and performance staff should be progressing through the exploratory stages of workload tracking in favor of sustained organizational systems that continually inform training.

Applying Workload Management Strategies

From a scientific perspective, managing workload relies on the interaction between external load (work performed) and internal load (physiological and psychological responses). For example, internal load responses (e.g., heart rate, rate of perceived exertion, psychometric profile, blood lactate, and other biochemical, hormonal, and immunological assessments) may be tracked with external load variables (e.g., force and power outputs, speed, acceleration, and time-motion analysis) to establish effective ranges for health and performance.[3] The use of MLB in-stadium motion capture data is an example of noninvasive data collection, including distances covered, running speed, and positioning.[5] Game data such as bat to ball contact and throwing velocities may also be accounted for as performance metrics.

As presented by Windt and Gabbett,[6] athlete monitoring begins by measuring external workload. The most common approach to workload tracking has been the acute to chronic workload ratio (ACWR). Other factors that influence load tolerance may also be considered, including age, injury history, strength, and fitness. Next, internal and external load measurements should be compared to inform future training prescriptions. Lastly, perceptual and well-being factors like stress, anxiety, and sleeplessness should be noted to determine player readiness.[6]

Comprehensive Approaches to Player Readiness

Readiness is key to sustained athletic performance. As defined, readiness is “a condition where an athlete has no impairment of physical performance, no mental fatigue, or excessive psychological distress.”[4] It is important for practitioners to recognize that fatigue extends beyond the physical aspects. Fatigue research highlights the interaction between physiological and psychological factors, which are related to both conscious thought (e.g., effort, drive, perception) and the subconscious avoidance of catastrophic injury.[7,8,9] From a workload perspective, psychological factors have been suggested to impact in-game heart rates among professional pitchers.[10] For practitioners seeking information about player readiness, daily psychometric surveys are a valuable addition to a comprehensive workload management approach.

Conclusion

In baseball, workload extends beyond the game itself, including practice, the weight room, and frequent travel. As a result, to fully quantify external workload likely requires a combination of technologies and approaches. A goal of workload management is to identify and prevent high-risk conditions that may result in injury. This lends support to comprehensive testing and evaluation within performance programs, including the assessment of strength levels, biomechanics, and on-field movement strategies. By understanding fatigue and workload management, practitioners will be better equipped for conversations with players and other members of the performance team.

About the Author

Eric McMahon is the Coaching and Sport Science Program Manager for the National Strength and Conditioning Association (NSCA) in Colorado Springs. He joined the NSCA staff in 2020 with over 15 years of coaching experience, including roles with the Texas Rangers, Milwaukee Brewers, and the MLB Europe programs. McMahon holds a master's degree in Exercise Science from Springfield College (MA), and a bachelor's degree in Biology from St. Lawrence University (NY). He also completed a Certificate Course in Data Analytics from Cornell University. Eric is a 20-year member of the NSCA and credentialed as a Certified Strength and Conditioning Specialist with Distinction (CSCS*D) and Registered Strength and Conditioning Coach with Distinction (RSCC*D).

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Managing Sleep: Travel and Baseball

By: Steven Basham, MS; R&D Scientist, Gatorade Sports Science Institute; Frisco, TX
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The Importance of Sleep for Athletes

In humans, all metabolic and physiological functions are governed by a 24-hour clock, also known as the circadian rhythm.[1] An important part of this rhythm is sleep, and for the purpose of this article, will be the focus. Evidence is scarce examining the impact of inadequate sleep on specific performance outcomes in baseball; however, learnings across multiple sports may be applied. Across sports and exercise, sleep is identified as an integral part of an athlete's performance and recovery, as well as overall health.[2,3,4] In fact, the need for adequate quantity and quality of sleep may be magnified for elite athletes due to their intense training and competition schedules.[3] Furthermore, sleep behaviors in team-sport athletes may be differentially impacted compared with individual-sport athletes,[5] furthering the need to prioritize sleep for team-sports, such as baseball. A review examining the effects of sleep loss in athletes reported alterations in the autonomic nervous system and reductions in skill-based and cognitive performance. Specifically, sleep loss increased reaction time, which may be detrimental for sports such as baseball, where reaction times are crucial for success.[2]

Travel Challenges in Baseball and Impact on Performance

Regardless of the negative impacts of disrupted sleep on overall performance, recovery and health of athletes, sleep disruption is inevitable among baseball players. One, if not the main challenge for baseball players, is the enormous number of games and grueling travel schedule.[6] According to a recent consensus statement, the onset of travel fatigue and jet lag result from crossing multiple (three or more) time zones and can negatively impact physical and cognitive performance as well as disrupt sleep.[7] Jet lag is directly impacted by travel direction (westward or eastward) and distance. The recovery from jet lag typically depends on the number of time zones crossed (generally, it takes one day to recover for each time zone) as well as the direction traveled (faster recovery is seen when traveling westward)[8,9] due to a resynchronization of circadian rhythms. This issue is highlighted within baseball given the frequent travel as well as limited days off for recovery. For example, travel across the continental United States (3 time zones) can result in decreased power, agility, and speed within the first 24 hours after arrival.[8] Specifically, one group analyzed 20 years of data from the MLB (1992-2011), which included 46,535 games and the effect of jet lag on performance.[9] Eastward travel correlated with a reduction in stolen base successes and an increase in number of double plays hit into for the returning home team. However, both home and away defensive metrics demonstrated an increase in slugging percentage allowed (primarily driven by increased home runs allowed), and an increase in fielding-independent pitching and runs allowed. Westward travel only seemed to correlate with defensive metrics via an increase in on-base percentage (primarily through walks allowed), as well as an increase in the number of triples allowed.[9] From this we can conclude that teams traveling east, either returning home or visiting, may experience a decrease in their performance unless the effects of jet lag can be mitigated.

Jet Lag Management

Scientific evidence on impactful solutions is mainly expert opinions and experiences. However, as highlighted in both recent reviews and consensus statements, appropriate light exposure, exercise and melatonin supplementation may all help aid in realigning the circadian system as a result of travel.[7,10] However, focus should be on the preservation of sleep and allowing athletes to attain adequate sleep when considering the constraints of training and competition times. For more in-depth solutions and protocols for the management of jet lag (before, during and after travel), the reader is referred to the recent review for managing travel fatigue and jet lag in athletes.[7]

Sleep Hygiene and Sleep Strategies

As mentioned previously, sleep, during travel and otherwise, should be prioritized through advocating proper sleep hygiene and sleep strategies. According to a recent review, educating athletes is the first step for strategically managing and optimizing sleep in athletes.[11] Simply educating athletes on the importance of sleep and proper sleep hygiene has demonstrated improvements in certain sleep parameters such as sleep duration and sleep efficiency.[4] Aspects of good sleep hygiene practices include: cool, dark room, consistent bedtime routines, consistent sleep/wake times, and removal of electronics close to bedtime.[3] In fact, a review of 85 studies demonstrated exposure to artificial light at night significantly reduced melatonin, increased sleep onset latency (time to fall asleep), and increased alertness.[12] If removing electronics or artificial lighting is not feasible, blue light blocking (BLB) glasses may serve as an aid in blocking blue light emission and has been shown to improve melatonin production signaling your body to initiate sleep.[13,14] Although the effectiveness of BLB glasses is debatable,[15,16] a personalized approach should be used if and when implementing BLB glasses. Additionally, other strategies to improve sleep may include sleep extension and daytime napping when appropriate.[3,4] Lastly, limited studies have shown that specific nutrients such as carbohydrates and protein may improve certain sleep outcomes, but caution should be used as the meal size and timing may negatively impact sleep.[17,18]

The views expressed are those of the authors and do not necessarily reflect the position or policy of PepsiCo, Inc.

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