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Analyzing the Impact of Athletic Readiness on Athletic Performance Testing for NCAA Division III Collegiate Athletes

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Analyzing the Impact of Readiness Indicators on Athletic Performance Testing for NCAA Division III Collegiate Athletes

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Abstract

BACKGROUND: Athletic testing and athlete readiness monitoring are essential tools of advanced and professional levels of sports that can be used for player recruitment/development and program evaluation. Vast research highlights the importance of athletic performance testing and how athlete readiness influences performance. However, a preliminary search shows little research integrating athlete readiness in athletic performance testing. The aim of this study is to analyze the effect of athlete readiness on athletic testing performance. **METHODS:** Five tests were chosen for the protocol from existing athlete testing methods, and they assessed key performance components: speed, agility, power, and strength. Athletes also completed a readiness questionnaire which assessed sleep, hydration, stage of menstrual cycle and pre- and post- RPE (Rate of Perceived Exertion). The Athlete Sleep Screening Questionnaire was used to create a Sleep Difficulty Score (SDS), where a higher score represents poorer sleep. Data was collected on thirty-nine members of NCAA Division III sports teams who volunteered to participate in the study. **RESULTS:** No statistically significant relationships were confirmed between any of the readiness indicators and the athletic performance metrics. **CONCLUSIONS:** The lack of any statistically significant findings is the opposite of the expected result based on the background literature on this topic. Given the limited sample size of the data, further research and analysis is required to confirm whether readiness has a significant effect on athletic testing performance.

Analyzing the Impact of Sleep and Menstrual Cycle on Athletic Performance Testing for NCAA Division III Collegiate Athletes

Athletic testing and athlete monitoring are essential parts of advanced and professional levels of sports. They provide useful information on athlete health, ability, level of improvement, and susceptibility to injury. Athletic performance testing is widely used within advanced and professional sport environments to support talent identification, athlete development, and program evaluation (Haff & Triplett, 2016). These authors also establish that standardized testing commonly includes assessing speed, agility, strength, and power to track performance changes and inform training prescription. Overall, athletic testing is a tool that has long been used in high-performance settings because it provides valuable information for athlete development and management. Therefore, the primary purpose of this study was to investigate the significance of athlete readiness on a standardized athletic testing protocol for athletic programs at NCAA Division III institution North Carolina Wesleyan University.

In comparison, athlete readiness is an emerging factor in the field of exercise science that is beginning to be recognized as a factor influencing performance. Athlete readiness refers to an athlete's physical, physiological, and psychological preparedness to train or compete. There is a growing body of independent literature demonstrating that readiness indicators such as sleep quality, hydration status, and hormonal fluctuations (in women) can influence neuromuscular performance, recovery, and fatigue (Abbott et al., 2024; Bender et al., 2018; Brini et al., 2021; Fullagar et al., 2015; Ganio et al., 2011; Judelson et al., 2007; Julian et al., 2017). Despite the research backed understanding

supporting the independent importance of athletic testing and readiness monitoring (Abbott et al., 2024; Andersen et al., 2018; Bender et al., 2018; Borg, 1998; Brini et al., 2021; Comfort et al., 2018; Fullagar et al., 2015; Ganio et al., 2011; Haff & Triplett, 2016; Johnson et al., 2025; Judelson et al., 2007; Julian et al., 2017; Martín-Moya et al., 2023; McGrath et al., 2025; McKeown et al., 2014; Morishita et al., 2018; Nimphius et al., 2010; Samuels et al., 2016; Wilson et al., 2025), limited research has integrated readiness measures into athletic performance testing protocols and proved its necessity.

Therefore, the primary purpose of this study was to investigate the significance of athlete readiness by designing and implementing a standardized athletic testing protocol for athletic programs at NCAA Division III institution North Carolina Wesleyan University. This would allow the examination of the relationships among athlete readiness variables such as sleep, hydration, and menstrual cycle stage and performance outcomes in athletic testing. The proposed hypotheses are (1) there will be a significant inverse relationship between sleep quality (as measured by total SDS score) and strength, power, agility, and speed; (2) a significant inverse relationship between hydration status and strength, power, agility, and speed, (3) significantly better strength, power, agility, and speed performance for those on the follicular and ovulations phases of their menstrual cycle when compared to those on the luteal and menstrual phases. More specifically, that athletes with lower sleep quality and quantity will experience worse athletic performance. Further, it is anticipated that females in the follicular and ovulation phases will perform better to their counterparts who are in the luteal and menstrual phases. By integrating readiness monitoring into performance testing, this study seeks to contribute preliminary data that

may inform holistic athlete assessment practices in high-performance sport settings, specifically in collegiate athletics.

Background/Literature Review

Introduction to Athletic Testing

Athletic testing is a crucial component of strength and conditioning practice as it provides a systematic method to quantify physical qualities relevant to sport performance, athlete development, health and injury risk, and return-to-play protocols. Within collegiate athletics, testing is commonly used to guide training program design and monitor progression and adaptation in athletes (Abbott et al., 2024; Bender et al., 2018; Brini et al., 2021; Judelson et al., 2007; McGrath et al., 2025). Effective testing protocols allow exercise scientists to benchmark performance, identify strengths and deficiencies, and assess readiness for training and competition. Previous literature and research regarding athletic testing emphasizes its role in assessing health and performance as well as its cruciality as an aspect of high-performance sport (Martín-Moya et al., 2023; McKeown et al., 2014). It is important to note that the implementation and scope of standardized athletic performance testing vary substantially across the different competitive levels and sport-specific needs. Collegiate Division III programs often face unique logistical and resource-related challenges making athletic testing uncommon or a lower priority feat. This research will focus on implementing a readiness-integrated athletic performance testing battery to be used in the National Collegiate Athletics Association (NCAA) Division III collegiate setting for most sports.

Purposes of Athletic Testing: Benchmarking, Profiling, Programming, and Motivation

Athletic testing serves many interconnected purposes within the performance cycle including benchmarking, profiling, programming, and motivation. Benchmarking enables

coaches to compare athletes' performance against normative data, consistent team standards, and/or their own performance over time. Profiling athletes across multiple physical domains allows practitioners to identify strengths, weaknesses, and potential risk factors, providing individualized insight into an athlete's physical qualities. This can then inform individualized or team-based programming enabling coaches to assess the effectiveness of training interventions and make objective, evidence-based adjustments. The ability to adapt program design based on athlete performance and needs allows training to be tailored towards identified weaknesses and sport-specific demands. Additionally, repeated testing across the programming cycle supports longitudinal monitoring, athlete motivation, and evaluation of training effectiveness. Further, testing has the potential to serve as a motivational tool, enhancing athlete engagement and accountability when results are communicated clearly and tied to performance goals.

Testing Batteries and Key Athletic Performance Markers

Comprehensive testing batteries typically assess multiple athletic markers that underpin sport performance including speed, agility, strength, power, and mobility. According to Nimphius and colleagues (2010), strength, power, speed, and agility are the emphasis of most strength and conditioning programs, which in turn makes them common key target markers for performance testing batteries. Speed testing often uses short-distance sprints ranging from 10 to 40 meters to evaluate acceleration and maximal velocity capabilities. Agility and change-of-direction assessments, such as the 505-agility test and the pro-agility test, capture an athlete's ability to decelerate, reaccelerate, and change direction efficiently. The 505-agility test involves athletes sprinting 15 meters

through a timing gate placed at the 10-meter mark, then changing direction 180 degrees to sprint 5 meters back through the same timing gate.) (Haff & Triplett, 2016). The pro-agility test, also called the 5-10-5 shuttle, instructs athletes to start at a central line in a 3-point position with feet shoulder-width apart, placed equally on either side of the line. The hand in contact with the floor during the 3-point stance determines which direction the athlete should travel at the start of the test. The athlete then sprints 5 yards to the turn-around line, 10 yards across the start line to the far turn-around line, , and finally, 5 yards back through the starting line (Haff & Triplett, 2016). Strength, particularly lower-body absolute and relative strength, is frequently assessed through compound lifts and isometric measures. Directional power markers, including the countermovement jump (CMJ) or horizontal single leg jump, reflect the capacity to rapidly express directional force. Finally, mobility assessments provide insight into movement quality and joint function, which may influence both performance and injury risk (Martin, 2023). Numerous studies use combinations of these markers to assess athlete performance in different research applications.

Research consistently demonstrates meaningful relationships between relative strength and athletic performance outcomes such as sprint speed, agility, and power. Several studies are summarized and cited by Nimphius et. al (2010) supporting this fact, and further establishing a significant relationship between speed, change of direction and relative strength in their own longitudinal study. Further, Anderson et al. (2018) have also shown significant correlations between lower-body strength and sprint performance, change-of-direction speed, and countermovement jump height in female Division II

collegiate soccer players. Evidently, both absolute and relative lower-body strength are significantly correlated with speed, agility, and power performance scores in athletes (Nimphius et al., 2010). This highlights the central role of strength as a foundational athletic quality within testing protocols and strength and conditioning programs as it influences performance in numerous athletic markers.

In addition to traditional performance metrics such as speed and strength, movement quality is increasingly being recognized as an essential component of athletic assessment. The Functional Movement Screen (FMS) is a seven-test battery developed to provide a measure of an individual's movement quality (Martin-Moya et al., 2023, p.1). Kramer et al. (2019) observed a relationship between the FMS and athletic performance tests of the standing long jump, countermovement jump, and agility, suggesting its importance in predicting athletic performance. McKeown et al. (2014) introduced the Athletic Ability Assessment (AAA) as a movement-based testing protocol designed specifically for athletic populations, addressing limitations of more generalized screening tools such as the FMS. The AAA demonstrated reliability and was proposed as a practical method for athlete profiling and monitoring changes in movement competency over time. Researchers assert that the AAA is considered a better assessment of functional movement for athletes and the foundational movement skills underpinning sports performance (McKeown et al., 2014). This approach highlights the importance of integrating movement assessments alongside traditional physical performance testing.

Value of Athletic Testing in Injury Prevention and Return to Play

Beyond performance enhancement, athletic testing plays an important role in injury prevention and the return-to-play protocol. Monitoring changes in strength, power, movement quality, and asymmetries can help identify deficits that may increase injury risk and allow practitioners to intervene before injuries occur. Regarding the return-to-play process, objective testing data can provide benchmarks to determine whether an athlete has regained sufficient physical capacity to safely resume partial or full participation in training or competition. Pre-injury testing data can inform the return-to-play protocol by allowing comparison to pre-injury data at various stages of the protocol, such as the strengthening, functional movement, and full return to practice/competition phases.

Movement ability assessments like the FMS can be an effective tool in injury prevention. Martin-Moya et al. (2023) show the role FMS play in evaluating the asymmetries that lead to mobility and stability deficits potentially increasing the risk of injuries. Additionally, movement-based assessments, such as the AAA, offer valuable insight into foundational movement patterns that underpin sport performance and training tolerance. McKeown et al. (2014) propose its use as an assessment tool for athlete profiling that assesses changes in an athlete's functional movement ability over time. When used longitudinally, these movement ability assessments can help track rehabilitation progress and inform decisions regarding readiness to return to training or competition. While testing alone cannot prevent injury, it contributes valuable information when combined with clinical assessment and workload monitoring.

Readiness Indicators and Their Value

Readiness monitoring has emerged as a complementary approach to physical testing by offering insight into an athlete's capacity to perform on a given day. Readiness indicators aim to capture an athlete's current physiological and psychological state, providing context for performance fluctuations and injury risk. They can assess an athlete's sleep status, hormonal changes, hydration level, level of fatigue/exertion, and more. Effective readiness indicators should be practical, sensitive to change, and provide actionable information. Subjective measures, such as wellness questionnaires, are commonly used due to their low cost and ease of implementation.

There is substantial evidence that sleep and menstrual cycle may affect athletic performance from a physiological perspective. Sleep has been identified as an influential readiness factor due to its impact on human health as well as physiological and cognitive function. Scientific evidence points to sleep as a critical component of metabolic and cognitive function (Samuels et al., 2016). Specifically, the amount of sleep, quality of the sleep, and duration of the sleep period, are key factors that influence an athlete's ability to train, maximize adaptations from training, recover, and perform (Samuels et al, 2016, p.1). Research has demonstrated that inadequate sleep duration and poor sleep quality are associated with reductions in peak power output (Bigalke et al, 2025) and cognitive performance (poorer alertness, reaction time, memory, and decision making) (Fullagar et al., 2025). al, 2015). There is sufficient evidence to suggest sleep depravations have been linked to increased concussion and other injury risk, underscoring the importance of sleep monitoring within athlete management systems (Wilson et al., 2025). Therefore, sleep plays a critical role in overall athlete health and performance and should be assessed.

Further, it is important to note the specific challenges faced by collegiate athletes regarding sleep. Wilson et al. (2025) suggests heavy athletic and academic demands contribute to the unique sleep-related challenges faced by this population. The Athlete Sleep Screening Questionnaire (ASSQ) was developed as a practical, low-cost tool for identifying sleep disturbances in athletic populations. The ASSQ has demonstrated good reliability and improved clinical relevance compared to traditional tools, identifying athletes who may require further assessment or intervention for sleep-related issues (Samuels et al., 2016). Furthermore, the low cost and ease of implementation of the ASSQ make it particularly suitable for collegiate environments with limited resources. These findings emphasize the importance of incorporating sleep and readiness monitoring into collegiate athlete testing frameworks.

Similar to sleep, there is a physiological basis for how hormonal fluctuations and stage of menstrual cycle affect the body and thus affect performance. Estrogen and progesterone fluctuations across the menstrual cycle are important, yet often under-monitored, factors influencing performance, recovery, and injury risk in female athletes. Cyclical changes in estrogen and progesterone can affect neuromuscular function (McGrath et al., 2025), endurance, and perceived fatigue (Ross et al., 2017), contributing to day-to-day variability in performance. Research indicates that some athletes may experience temporary reductions in strength, power, and coordination, or increased perceived exertion during specific phases of the cycle, while others show minimal or highly individualized responses (Ross et al., 2017). These findings highlight the need for individualized monitoring rather than generalized assumptions. Hormonal fluctuations

have also been linked to altered injury risk profiles (McGrath et al., 2025), emphasizing their importance in evaluating readiness and making return-to-play decisions. Simple menstrual cycle tracking or symptom-based questionnaires can provide valuable information to interpret performance test results, adjust training loads, and enhance communication between athletes and coaches. These tools are low-cost, non-invasive, and feasible for collegiate and NCAA Division III programs, supporting holistic monitoring and promoting female athlete health and performance equity.

In addition to influencing endurance and perceived fatigue, cyclical hormonal fluctuations during the menstrual cycle significantly impact joint laxity contributing to a higher risk of musculoskeletal injuries in female athletes. Variations in reproductive hormones (notably estrogen, progesterone, and relaxin) over the course of the menstrual cycle can directly alter the mechanical stiffness and tensile properties of connective tissues across different phases of the cycle (McGrath et al., 2025). These hormonal shifts decrease overall connective tissue stiffness and increase anterior knee laxity, rendering joints less stable and more vulnerable to injury under high-impact athletic loads (McGrath et al., 2025). Consequently, recognizing these phase-specific variations in ligament laxity is an essential component of evaluating acute injury risk profiles and developing individualized athlete monitoring protocols.

Amongst sleep and hormonal fluctuations, hydration level is another critical readiness factor that has the potential to affect performance, physiological function, and injury risk. Even mild dehydration (1-2% loss of relative body water) has been associated with reductions in muscular strength, power, sprint performance (Judelson et al., 2012),

cognitive function, and increases in perceived fatigue (Ganio et al., 2011). Poor hydration can also impair thermoregulation and sprint performance (Driscoll et al., 2020), during intense or prolonged exercise, especially in warm or humid conditions. This is likely because of the role hydration plays in maintaining blood volume critical for aerobic exercise, maintaining sweat levels for regulating body temperature, regulating electrolytes contributing the nerve signaling and muscle contraction, and supporting metabolic processes that produce energy. Hydration status can vary daily due to training load, environmental conditions, travel, and individual behaviors, making it an important variable when interpreting performance test results. Simple monitoring strategies, such as urine color charts, body mass changes, or brief self-reported hydration questionnaires are practical, low-cost options suitable for collegiate and Division III programs. Incorporating hydration assessment into readiness monitoring allows practitioners to make informed adjustments to training intensity, recovery, and testing interpretation, reinforcing holistic, athlete-centered performance management.

In summary, readiness indicators provide essential context for interpreting athletic performance testing outcomes. Factors such as sleep, hormonal status, and hydration, and have consistently shown to influence performance, cognitive function, and injury risk. These variables can impact test outcomes independently of an athlete's actual physical capacity, emphasizing the need to account for daily readiness in evaluating performance. Research also highlights the interrelated nature of these factors as disruption in one area—such as poor sleep—can negatively affect others compounding the effects on performance and recovery. Integrating readiness monitoring with traditional physical testing supports

informed training decisions, improves athlete communication, and promotes a holistic approach to health and development. Overall, readiness indicators are a valuable complement to performance testing frameworks, particularly in the collegiate setting.

Application of Athletic Testing and Readiness Indicators in the NCAA Division III Settings

In most collegiate settings, athletic testing protocols often include preseason, and postseason batteries focused on speed, strength, power, and conditioning as related to sport-specific demands. The testing protocols typically include a combination of physical performance tests (e.g., sprinting, jumping, maximal strength) and, less consistently, movement or readiness assessments. NCAA Division I and II programs frequently employ advanced technologies such as force plates, Global Positioning Systems (GPS), and motion analysis. However, NCAA Division III programs typically rely on more traditional field and weightroom based assessments due to budgetary and staffing constraints. These limitations can indicate testing practices at the NCAA Division III level can be inconsistent, informal, or incomplete, limiting their effectiveness for long-term athlete development. These limitations, the literature suggests that well-selected, low-cost tests can still provide meaningful and actionable data when implemented consistently.

Although the value of readiness monitoring is well-documented, implementing consistent sleep and readiness assessments in NCAA Division III collegiate settings presents notable challenges. Limited staffing, budget constraints, and variable athlete buy-in often inhibit the use of advanced monitoring technologies. However, these limitations create opportunities for the adoption of simple, low-cost tools such as brief sleep

questionnaires and basic subjective readiness ratings. Integrating these measures can enhance contextual understanding of test results and support more informed programming decisions without imposing significant logistical burdens. This can lead to the development of simple, yet effective athlete management systems such as CoachMePlus (Buffalo, NY) that provide holistic athlete development and monitoring strategies including performance testing, readiness evaluation, and risk of injury. Further, sleep monitoring is especially important for student athletes in division III institutions as there is a greater emphasis on academics and extra-curricular involvement, which contributes to a greater load and burden experienced by students (Giusti et al., 2022). Additionally, stage of menstrual cycle is a physiological consideration that is often overlooked in sport, despite the physiological explanation for its effect on human body and athletic performance. Developing monitoring strategies that specifically target sleep and stage of menstrual cycle in student athletes would promote greater athlete wellbeing, intervention strategies for poor sleep patterns, more informed strength and conditioning programs and overall, better coaching support for student athletes during training. When combined with periodic physical testing, readiness measures can provide valuable context for interpreting performance data and guiding daily training decisions when applying readiness integrative athletic testing to NCAA Division III athletics.

Research Gaps and Study Rationale

Despite extensive research on athletic testing and performance, it is clear several gaps exist within the current literature and applied practice of athletic testing. A lack of standardized testing protocols across collegiate programs–particularly at NCAA Division III

level–complicates comparisons and longitudinal tracking for coaches. Equity and accessibility issues persist, as many evidence-based technologies are cost-averse for smaller institutions. Furthermore, much of the existing research targets NCAA Division III, or professional athletes, limiting its direct applicability to NCAA Division III populations whose training age, schedules, and resources differ substantially. Finally, existing testing models often emphasize isolated physical performance metrics while neglecting holistic athlete development, particularly movement quality and readiness factors such as sleep. Other gaps in research surrounding athletic readiness include the limited investigation of how the menstrual cycle and hormonal fluctuations impact athlete performance, especially at the collegiate level.

Overall, the literature supports athletic testing as a multifaceted tool for performance enhancement, injury management, athlete monitoring, and evidence-based programming in collegiate athletics. Strength, speed, power, agility, and readiness indicators (particularly sleep and menstrual cycle) are consistently linked to athletic performance and athlete health. While there is understanding that supports the use of readiness indicators in athletic performance testing, current research fails to integrate readiness assessments in performance testing protocols. The integration of these concepts has the potential to not only add validity to performance research in exercise science by acknowledging confounding factors but also pave way for greater consideration of holistic athlete health. Further, current practices often fail to account for the unique constraints and needs of NCAA Division III programs. Collectively, these findings reveal a critical research and practical gap: the lack of a standardized, practical, and holistic

athletic testing protocol that integrates readiness measures and is specifically designed for NCAA Division III programs. Addressing this gap may improve the relevance, equity, and effectiveness of current strategies in athlete monitoring, performance quality, and athletic development in this underrepresented population.

Methods

Study Design

A standardized testing protocol consisting of five performance tests was developed based on commonly used and validated athletic performance assessments. The selected tests evaluated the key components of athletic performance of speed, agility, strength, and power. The tests selected for the protocol include a 20-yard dash for sprint speed, a pro-agility test for agility, countermovement jump and standing long jump assessments for power, and an isometric mid-thigh pull (IMTP) for strength (maximum force production). The readiness variables of sleep quality, hydration status, and stage of menstrual cycle, were compiled into a readiness questionnaire designed for this study titled Athlete Readiness for Athlete Performance Testing Questionnaire (ARAPTQ). Sleep quality was evaluated using the Athlete Sleep Screening Questionnaire (ASSQ) (see Appendix A) (Samuels et al., 2016) as part of this complete readiness questionnaire. Responses were used to calculate a Sleep Difficulty Score (SDS) following the original study's scoring key (see Appendix B), with higher scores indicating greater sleep disturbance. Each participant signed an informed consent form prior to participating in the study, filling out the questionnaire, and completing the testing session. The questionnaire, research proposed, and procedures were approved by the North Carolina Wesleyan University Institutional Review Board (IRB).

Procedures

All tests were administered in a single session after a warm-up under standardized conditions to minimize variability. Athlete readiness was assessed using the ARAPTQ which

was completed by participants prior to the testing session. Hydration status and menstrual cycle stage were assessed via self-report. Participants' height was measured using a SECA 216 wall-mounted stadiometer (SECA, Hamburg, Germany) and weight using an Ohaus CD-11 scale (Ohaus, Parsippany, NJ). Performance testing was conducted following the corresponding protocols outlined in the NSCA Essentials of Strength and Conditioning (Haff & Triplett, 2016).

Speed: 20-yard dash

Participants were asked to perform two timed trials, completing a 20-yard sprint as fast as possible. The test was set up with a marker and a timing gate (Brower Timing Systems, Draper, UT) indicating the starting point and a marker with another timing gate at 20 yards indicating the finish line. For the test, participants were asked to assume their starting position at the first marker. Upon auditory signal from the test instructor, participants sprinted the specified distance. Two minutes of rest were given between the trials. Trial times were recorded in seconds to the nearest 0.01, with the best score used for data analysis.

Agility: Pro-Agility Test

Participants were asked to perform two timed trials, completing the pro-agility test as fast as possible. The test was set up as shown in Figure 1 with three markers 5-yards (4.6m) apart and Blaze Pod (Tel Aviv, Israel) sensors placed at each marker. For the test, the participants were asked to start at the center marker in a 3-point position with feet shoulder-width apart, placed equally on either side of the marker. The hand in contact with the floor during the 3-point stance determines which direction the athlete should travel at

the start of the test. Upon signal from the test conductor, the athlete then sprints 5 yards to the turn-around line, 10 yards across the start line to the far turn-around line, and finally, 5 yards back through the starting line. Hand contact with the markers (indicated by the Blazepod sensors) must be made for the trial to be recorded. Two minutes of rest was given between the trials. The time of the two trials was recorded in seconds to the nearest 0.01, with the best score used for data analysis.

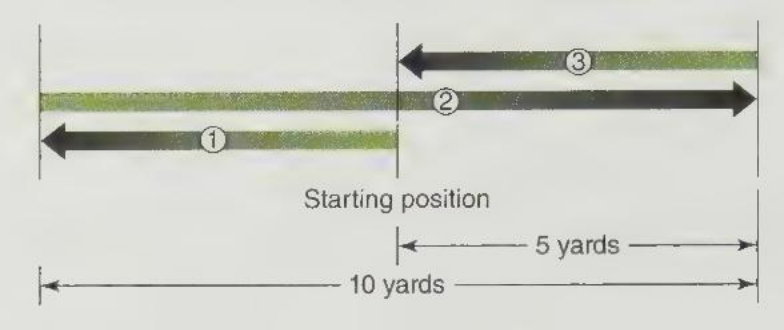


Figure 1: Pro-Agility test set up. (Haff & Triplett, 2016, p.282)

Vertical Power: Countermovement Jump

Participants were asked to perform two countermovement jump trials at maximal effort. For the test, the participants had a sensor strapped to their shoe (Output Sports, Dublin, Ireland) and were asked to complete the jump with their hands on their hips. Participants were asked to jump as high as possible from that position and land on their feet for the trial to be recorded. The result was indicated by the computer connected to the sensor utilizing an inertial measurement unit (IMU) combining an accelerometer and gyroscope to calculate flight time. Two minutes of rest was given between the trials. The jump height of both trials was recorded in meters to the nearest inch (in.) with the best score used for data analysis.

Horizontal Power: Standing Long Jump

Participants were asked to perform two standing long jump trials at maximal effort. For the test, the participants were asked to step to the starting line with the toes just behind the starting line and a tape measure on the floor starting at the starting line and extending 3 m forward. Participants were asked to jump as far as possible from that position and land on their feet for the trial to be recorded. Once the participant landed, a ruler was used to mark the back edge of their rearmost heel against the tape measure and record their score to the nearest inch (in.). Two minutes of rest was given between the trials. The two trials were recorded in meters with the best score used for data analysis.

Strength: Isometric Mid-Thigh Pull (IMTP)

Testing was conducted using the recommended standardized protocol (Comfort et al., 2018). Participants were asked to perform two IMTP trials at maximal effort. For the test, the participants were instructed to step onto the force plates (Hawkin Dynamics, Westbrook, Maine) and were adjusted to the correct body position with a goniometer (Superior Medical Equipment, Wilmington, NC). Participants' hip angles were measured at 140-150°, while knee angles were measured at 125-145°. Participants were asked to pull the bar in front of them with as much force as possible, maintaining that position. The result was indicated by the computer connected to the force plate system sampling vertical ground reaction forces (GRF) at 1200 Hz recording force-time data. Two minutes of rest was given between the trials. Both trials were recorded in Newtons to the nearest whole number with the best score used for data analysis.

Participants

39 collegiate athletes from National Collegiate Athletic Association (NCAA) Division III programs at North Carolina Wesleyan University (NCWU) volunteered to participate in the study, of which 30 were female and 9 were male. Participation was voluntary, signed informed consent was obtained, and all participants were informed of the procedures of the study and its approval by the NCWU IRB prior to data collection. The participants were all 18 years or older and all members of the baseball, softball, women's basketball, and men's and women's tennis programs. These programs were chosen as they were all during the pre-season phase of their training cycle, allowing performance data and training volumes to be comparable at the time of data collection.

Statistical Analysis

Descriptive statistics were calculated for all participant groups, readiness variables, and performance outcomes. Pearson correlation coefficients were used to examine relationships between sleep and hydration readiness measures and athletic testing performance variables. Independent samples T-tests were used to analyze the differences between athletic performance of participants on the luteal and follicular phases of the menstrual cycle. Spearman's rank correlation coefficients were used to examine the relationship between hydration and athletic testing performance variables. Statistical significance was set at $p < 0.05$. Correlation strength was interpreted using standard thresholds: 0.10-0.29 (weak), 0.30-0.49 (moderate), and ≥0.50 (strong).

Results

Descriptive statistics were calculated for all the participants based on their sports team. Spearman and Pearson correlations were used to determine the relationship between athletic readiness and performance testing outcomes.

Descriptive Statistics

		BMI	Pro-Agility (sec)	Best Peak Force (N)	VJ (in)	SL (in)	20-yard Dash (sec)
N	Valid	39	39	32	33	37	39
	Missing	3	3	10	9	5	3
Mean		24.47	166.07	1051.76	24.85	50.62	337.18
Median		23.77	5.73	1513.50	10.60	65.00	3.43
Std. Deviation		4.82	340.37	843.62	31.08	29.70	587.46
Range		28.71	1216.07	2310.30	90.5	79.97	1640.19
Minimum		10.77	4.93	5.70	7.5	3.03	2.81
Maximum		39.49	1221.00	2316.00	98.0	83.00	1643.00

Sleep Outcomes

The analysis of the Total Sleep Difficulty Score (SDS), derived from the ASSQ, revealed no statistically significant correlations with any of the primary athletic performance metrics within the dataset. Specifically, no significant relationship was identified between the Total SDS Score and the 20-yard Dash time ($r = 0.056$, $p = 0.734$), Pro-Agility ($r = 0.129$, $p = 0.433$), Best Peak Force ($r = -0.060$, $p = 0.720$), Vertical Jump ($r = 0.045$, $p = 0.803$), or Standing Long Jump ($r = -0.196$, $p = 0.260$).

Sleep Pearsons Correlations

		Pro-Agility (sec)	Best Peak Force (N)	VJ (in)	SL (in)	20-yard Dash (sec)	Total SDS Score
Pro-Agility (sec)	Pearson Correlation	1	-.810**	-.145	.088	.701**	.129
	Sig. (2-tailed)		<.001	.421	.621	<.001	.433
	N	39	38	33	34	39	39
Best Peak Force (N)	Pearson Correlation	-.810**	1	-.232	.226	-.698**	-.060
	Sig. (2-tailed)	<.001		.195	.199	<.001	.720
	N	38	38	33	34	38	38
VJ (in)	Pearson Correlation	-.145	-.232	1	-.817**	-.094	.045
	Sig. (2-tailed)	.421	.195		<.001	.603	.803
	N	33	33	33	33	33	33
SL (in)	Pearson Correlation	.088	.226	-.817**	1	-.122	-.196
	Sig. (2-tailed)	.621	.199	<.001		.492	.260
	N	34	34	33	35	34	35
20-yard Dash (sec)	Pearson Correlation	.701**	-.698**	-.094	-.122	1	.056
	Sig. (2-tailed)	<.001	<.001	.603	.492		.734

	N	39	38	33	34	39	39
Total SDS Score	Pearson Correlation	.129	-.060	.045	-.196	.056	1
	Sig. (2-tailed)	.433	.720	.803	.260	.734	
	N	39	38	33	35	39	42

**. Correlation is significant at the 0.01 level (2-tailed).

Menstrual Cycle Phase Outcomes

Independent samples T-tests were used to analyze the differences between athletic performance of participants on the luteal and follicular phases of the menstrual cycle. The data showed no statistically significant differences between performance in any of the athletic tests between the luteal and follicular phase groups. Specifically, no significant linear correlation was found for Pro-Agility ($t = -1.315$, $p = 0.205$), Best Peak Force ($t = 1.120$, $p = 0.323$), 20-yard Dash ($t = -1.072$, $p = 0.307$), Standing Long Jump ($t = 0.069$, $p = 0.946$), or the Vertical Jump ($t = -0.078$, $p = 0.939$).

Independent Samples Test

		t-test for Equality of Means							
				Significance				95% Confidence Interval of the Difference	
		t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Pro-Agility (sec)	Equal variances assumed	-1.128	18	.137	.274	-215.52209	191.14067	-617.09373	186.04955
	Equal variances not assumed	-1.315	17.727	.103	.205	-215.52209	163.94347	-560.33555	129.29138
Best Peak Force (N)	Equal variances assumed	.928	17	.183	.366	355.74262	383.26766	-452.88146	1164.36670
	Equal variances not assumed	1.020	16.221	.161	.323	355.74262	348.67667	-382.60133	1094.08657
20-yard Dash (sec)	Equal variances assumed	-1.120	18	.139	.277	-.18033	.16099	-.51856	.15790
	Equal variances not assumed	-1.072	10.971	.153	.307	-.18033	.16825	-.55077	.19011
SL (in)	Equal variances assumed	.061	16	.476	.952	.20779	3.39364	-6.98640	7.40198
	Equal variances not assumed	.069	15.977	.473	.946	.20779	3.03199	-6.22049	6.63607
VJ (in)	Equal variances assumed	-.077	16	.470	.940	-.0766	.9994	-2.1952	2.0419
	Equal variances not assumed	-.078	13.736	.469	.939	-.0766	.9803	-2.1829	2.0297

Hydration Outcomes

To investigate the relationship between athlete readiness and physical performance, Spearman correlation coefficients were calculated between self-reported hydration scores and the various athletic testing metrics. The analysis revealed that self-reported hydration scores (Q.18) did not yield any statistically significant correlations with the primary athletic performance tests. Specifically, no significant relationships were observed between hydration and Pro-Agility ($r = -0.049$, $p = 0.768$), Peak Force ($r = -0.090$, $p = 0.623$), Vertical Jump ($r = 0.036$, $p = 0.844$), Standing Long Jump ($r = -0.203$, $p = 0.227$), or the 20-yard Dash ($r = 0.270$, $p = 0.096$).

Spearman Correlations for Hydration

			Pro-Agility (sec)	Best Peak Force (N)	VJ (in)	SL (in)	20-yard Dash (sec)	Q18. Hydration score
Spearman's rho	Pro-Agility (sec)	Correlation Coefficient	1.000	-.399*	-.590**	-.327	.738**	-.049
		Sig. (2-tailed)	.	.013	<.001	.059	<.001	.768
		N	39	38	33	34	39	39
	Best Peak Force (N)	Correlation Coefficient	-.399*	1.000	-.009	-.007	-.538**	-.072
		Sig. (2-tailed)	.013	.	.958	.967	<.001	.666
		N	38	38	33	34	38	38
	VJ (in)	Correlation Coefficient	-.590**	-.009	1.000	.470**	-.536**	-.067
		Sig. (2-tailed)	<.001	.958	.	.006	.001	.711
		N	33	33	33	33	33	33
	SL (in)	Correlation Coefficient	-.327	-.007	.470**	1.000	-.315	.214
		Sig. (2-tailed)	.059	.967	.006	.	.070	.217
		N	34	34	33	35	34	35

	20-yard Dash (sec)	Correlation Coefficient	.738**	-.538**	-.536**	-.315	1.000	.035
		Sig. (2-tailed)	<.001	<.001	.001	.070	.	.832
		N	39	38	33	34	39	39
	Q18. Hydration score	Correlation Coefficient	-.049	-.072	-.067	.214	.035	1.000
		Sig. (2-tailed)	.768	.666	.711	.217	.832	.
		N	39	38	33	35	39	42

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

As previously stated, the primary purpose of this study was to investigate the integration of athlete readiness factors into a standardized athletic performance testing protocol for athletic programs at North Carolina Wesleyan University, an NCAA Division III institution.

Interpretation of Sleep Data

The Total SDS Score emerged as a complex variable. SDS score is a variable where a higher score indicates worse sleep and therefore, negative correlations between SDS and athletic testing data are expected. While the data indicated that SDS did not demonstrate any statistically significant relationships with the primary athletic performance metrics in this study, the literature heavily supports that inadequate sleep duration and poor sleep quality are associated with reductions in peak power output and cognitive performance. These findings suggest that, within this sample, variations in self-reported sleep difficulty did not meaningfully influence speed, agility, strength, or power performance during acute testing. This outcome contrasts with a substantial body of literature indicating that poor sleep quality and reduced sleep duration are associated with impairments in neuromuscular performance, cognitive function, and overall athletic output. Several factors such as relatively small sample size of the study and the single-session testing design may not reflect the cumulative or chronic effects of sleep disturbance may explain this discrepancy. Therefore, while sleep is widely recognized as a critical component of athlete readiness, the present findings suggest that its impact may not manifest as a clear

or immediate determinant of performance in isolated testing conditions, particularly when assessed through self-reported measures in a limited sample.

Interpretation of Hydration Data

The analysis of the self-reported hydration score (Q18) revealed no statistically significant relationships with any of the primary athletic performance metrics, indicating that hydration status, as measured in this study, did not meaningfully influence performance outcomes. These findings suggest that, within this sample, variations in perceived hydration levels were not associated with measurable changes in speed, agility, strength, or power performance. This outcome contrasts with existing literature, which consistently demonstrates that dehydration can impair neuromuscular function, reduce power output, and negatively affect sprint performance. A likely explanation for this discrepancy is the subjective nature of the hydration measure used, which may lack the sensitivity required to detect subtle physiological differences in hydration status. Additionally, the relatively small sample size and limited variability in hydration scores may have contributed to the absence of significant findings. Therefore, while hydration is well-established as an important readiness factor, the results of this study suggest that self-reported hydration alone may not be a sufficiently precise indicator for detecting its influence on acute athletic performance in this context.

Interpretation of Menstrual Cycle Data

The data revealed no significant correlation between the phase of the menstrual cycle and athletic performance outcomes. This contradicts the established literature on the topic as cyclical changes in estrogen and progesterone are known to influence

neuromuscular function and perceived fatigue, which can contribute to day-to-day variability in performance. However, research indicates that these responses are highly individualized; while some athletes experience temporary reductions in strength and power, others show minimal responses. The lack of broad, statistically significant performance drops in this dataset aligns with the need for individualized monitoring rather than making generalized team-wide assumptions based on cycle phase. Further, the small size of the data set can possibly explain the lack of significance found in these correlations.

Practical Application in Division III

Despite the mixed correlations, this study reinforces the value of implementing readiness assessments and provides evidence that this topic requires further study. NCAA Division III programs typically rely on traditional field assessments due to budgetary and staffing constraints. However, utilizing low-cost, validated tools like the ASSQ provides meaningful and actionable data without imposing significant logistical burdens on smaller athletic departments.

Limitations of this Study

There are several limitations within the study's design and execution that must be acknowledged when interpreting these results. Firstly, the survey design specifically in the wording of the menstrual cycle question (Q24) within the readiness questionnaire may have been problematic. The question relies on the knowledge and understanding of each participant accurately reporting the stage of the menstrual cycle they are in. Ensuring clarity is vital to accurately capture data on underrepresented populations and specific hormonal phases like the follicular versus luteal phase. A recommendation for future study

would be to record the question or funding/timing allows, have participants list the dates of their last three menstrual cycles or conduct hormonal testing of the participants to observe their hormonal levels and determine the current phase of their menstrual cycle from there. Further, there was a lack of linking between the subjective survey data and the objective performance data for several participants. This error reduced the usable sample size of the data. While 113 athletes initially volunteered for the study, the final linked dataset consisted of 39 valid participants. The dramatic reduction in the sample size likely affected the results of the study. The third significant limitation was the human error in subjective reporting. There was evidence of user error in the self-reporting of the Rate of Perceived Exertion (RPE). Because RPE is a subjective measure, it is susceptible to individual bias and misinterpretation of the 10-point scale. The data regarding perceived fatigue was not analyzed given the user error in self-reporting levels of fatigue in the questionnaire. Future studies should ensure participants have RPE explained to participants before they take the survey. Finally, there was a limitation in the study design as all tests were administered in a single session. This approach of this study limits the ability to observe how readiness indicators can change and impact an athlete differently on a different day or over the course of a full competitive season. The recommended approach for future research would assess athlete readiness in pre-season tests, mid-seasons tests, and post-season test to obtain better data that captures a more comprehensive picture of how readiness influence athletic testing and performance.

Conclusions

In summary, this study sought to evaluate the relationship between athlete readiness indicators and athletic performance testing. The premise of the research included a null hypothesis predicting no relationship between athlete readiness and performance, and an alternate hypothesis confirming a relationship between one or more readiness indicators and any performance test. Based on the statistical analysis, the null hypotheses are accepted, as no statistically significant relationships were confirmed between any of the readiness indicators and the athletic performance metrics. While the literature predicted that sleep, hydration, and the menstrual cycle would all heavily impact performance, the data revealed that these factors do not always manifest as linear performance detriments in an acute testing environment. The stage of the menstrual cycle did not present a universal impact on physical performance in this sample, highlighting the absolute necessity for individualized, rather than generalized, monitoring protocols and also reinforcing the need for further study with a larger sample size.

This study successfully establishes the first standardized testing protocol used at North Carolina Wesleyan University that incorporates readiness analysis. Despite the logistical and budgetary constraints inherent to NCAA Division III programs, the integration of low-cost tools like the ASSQ is both practical and beneficial for holistic athlete management. Additionally, this data can be used to inform better coaching decisions and improve performance and quality of life for student athletes. Future directions for research should include refining the language of self-reported surveys, scaling up to a larger

participant implementation, and utilizing longitudinal tracking to better understand the long-term compounding effects of readiness on athlete development.

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Appendices

Appendix A.

Athlete Sleep Screening Questionnaire (ASSQ)

INSTRUCTIONS

The following questions relate to your sleep habits. Please circle the best answer which you think represents your typical sleep habits over the recent past. For all questions, circle a letter from 'a' to 'e' unless otherwise specified.

1. During the recent past, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)
   a. 5 to 6 hours
   b. 6 to 7 hours
   c. 7 to 8 hours
   d. 8 to 9 hours
   e. more than 9 hours

2. How many naps per week do you take?
   a. none
   b. once or twice
   c. three or four times
   d. five to seven times

3. How satisfied/dissatisfied are you with the quality of your sleep?
   a. very satisfied
   b. somewhat satisfied
   c. neither satisfied nor dissatisfied
   d. somewhat dissatisfied
   e. very dissatisfied

4. During the recent past, how long has it usually taken you to fall asleep each night?
   a. 15 minutes or less
   b. 16 – 30 minutes
   c. 31 – 60 minutes
   d. longer than 60 minutes

5. How often do you have trouble staying asleep?
   a. none
   b. once or twice per week
   c. three or four times per week
   d. five to seven days per week

During the recent past, how often have you taken medicine to help you sleep (prescribed or over-the-counter)?

e. none
f. once or twice per week
g. three or four times per week
h. five to seven times per week

6. Considering only your own “feeling best” rhythm, at what time would you get up if you were entirely free to plan your day?
   a. 5:00 am – 6:30 am
   b. 6:30 am – 7:45 am
   c. 7:45 am – 9:45 am
   d. 9:45 am – 11:00 am
   e. 11:00 am – 12:00 pm (noon)

7. How alert do you feel during the first half-hour after having awakened?
   a. not at all alert
   b. slightly alert
   c. fairly alert
   d. very alert

8. Do you consider yourself to be a morning type person or an evening type person?
   a. definitely a morning type
   b. more a morning type than an evening type
   c. more an evening type than a morning type
   d. definitely an evening type

9. Considering your own “feeling best” rhythm, at what time would you go to bed if you were entirely free to plan your evening?
   a. 8:00 pm – 9:00 pm
   b. 9:00 pm – 10:15 pm
   c. 10:15 pm – 12:30 am
   d. 12:30 am – 1:45 am
   e. 1:45 am – 3:00 am

10. When you are travelling for your sport, do you experience sleep disturbance?
    a. Yes
    b. No

11. When you are travelling for your sport, do you experience daytime dysfunction (feeling generally unwell or having poor performance)?
    a. Yes
    b. No

Are you typically a loud snorer?
c. Yes
d. No

12. Have you been told that you choke, gasp, or stop breathing for periods of time during sleep?
a. Yes
b. No

13. On average, how many caffeinated products (caffeine pills, coffee, tea, soda, energy drinks) do you have per day? For coffee and tea, one drink = 6-8oz/177-237ml; for caffeinated soda, one drink = 1 can (12oz/355ml)?
a. Less than 1 per day
b. 1-2 per day
c. 3 per day
d. 4 per day
e. 5 or more per day

14. Over the recent past, how often do you use an electronic device (example: cell phone, computer, tablet, T.V. etc.) within 1 hour of going to bed?
a. Not at all
b. 1-3 times per week
c. 4-6 times per week
d. Every day

Appendix B.

ASSQ SLEEP DIFFICULTY SCORE (SDS) SCORING KEY

Add the scores from ASSQ items 1, 3, 4, 5, and 6 to get the SDS. The score corresponds to the following clinical sleep problem category:
None: 0-4; **Mild**: 5-7; **Moderate**: 8-10; **Severe**: 11-17

1. During the recent past, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)
   a. 5 to 6 hours (4)
   b. 6 to 7 hours (3)
   c. 7 to 8 hours (2)
   d. 8 to 9 hours (1)
   e. more than 9 hours (0)

3. How satisfied/dissatisfied are you with the quality of your sleep?
   a. very satisfied (0)
   b. somewhat satisfied (1)
   c. neither satisfied nor dissatisfied (2)
   d. somewhat dissatisfied (3)
   e. very dissatisfied (4)

4. During the recent past, how long has it usually taken you to fall asleep each night?
   a. 15 minutes or less (0)
   b. 16 – 30 minutes (1)
   c. 31 – 60 minutes (2)
   d. longer than 60 minutes (3)

5. How often do you have trouble staying asleep?
   a. none (0)
   b. once or twice per week (1)
   c. three or four times per week (2)
   d. five to seven days per week (3)

6. During the recent past, how often have you taken medicine to help you sleep (prescribed or over-the-counter)?
   a. none (0)
   b. once or twice per week (1)
   c. three or four times per week (2)
   d. five to seven times per week (3)

INTERVENTION RECOMMENDATIONS
The following can be used as a guide for intervention recommendations.
A = General sleep education information sheet specific to athletes + Tailored recommendations depending on the sleep insufficiencies or specific sleep issues
B = Monitoring and follow-up from support team
C = Follow-up and assessment from the sport physician
D = Assessment and recommendations from sleep medicine physician or qualified sleep professional
E = Diagnostic testing for sleep disorder and treatment

FOR CLINICAL SLEEP PROBLEM CATEGORIES
None (SDS of 0-4) – Recommendation: A
Mild (SDS of 5-7) – Recommendations: A + B
Moderate (SDS of 8-10) – Recommendations: A + B + C + D + E (if indicated)
Severe (SDS of 11-17) – Recommendations: A + B + C + D + E

MODIFIERS (Sleep Disordered Breathing, Travel, Chronotype)
The modifiers are not included in the SDS because they occur less frequently and are not always applicable to certain athlete groups (e.g. travel). The modifiers are important to provide specific education and intervention recommendations.

Sleep Disordered Breathing – If the athlete answers yes to item 13 (loud snoring) or item 14 (apneas) they should be further evaluated.
Recommendations: D + E (if indicated).

Sleep and Performance Issues During Travel – If the athlete answers yes to item 11 (sleep disturbance), education on travel management and jet lag may be necessary.
Recommendations: A (specific to travel).

If the athlete answers yes to item 12 (performance issues), the problem is more serious and could require additional interventions above and beyond education.
Recommendations: A + B + C (if indicated) + D (if indicated).

Chronotype (Eveningness) – Those who are evening types are more at-risk for sleep disturbances. Add the scores from items 7-10 to get the Chronotype Score for eveningness. Totals ≤ 4 indicate the athlete is an evening type.
Recommendations: D + E (if indicated).

7. Considering only your own “feeling best” rhythm, at what time would you get up if you were entirely free to plan your day?
    a. 5:00 am – 6:30 am (4)
    b. 6:30 am – 7:45 am (3)
    c. 7:45 am – 9:45 am (2)
    d. 9:45 am – 11:00 am (1)
    e. 11:00 am – 12:00 pm (noon) (0)

8. How alert do you feel during the first half-hour after having awakened?
   a. not at all alert (0)
   b. slightly alert (1)
   c. fairly alert (2)
   d. very alert (3)

9. Do you consider yourself to be a morning type person or an evening type person?
   a. definitely a morning type (3)
   b. more a morning type than an evening type (2)
   c. more an evening type than a morning type (1)
   d. definitely an evening type (0)

10. Considering your own “feeling best” rhythm, at what time would you go to bed if you were entirely free to plan your evening?
   a. 8:00 pm – 9:00 pm (4)
   b. 9:00 pm – 10:15 pm (3)
   c. 10:15 pm – 12:30 am (2)
   d. 12:30 am – 1:45 am (1)
   e. 1:45 am – 3:00 am (0)

OTHER ITEMS (Items 2, 15, 16)

These items are not included in the SDS or the modifiers but are important to inform sleep optimization strategies, such as strategies to increase napping frequency, reduce caffeine intake, and reduce electronic device use before bedtime.

Appendix C.

Athlete ID# _____

Athlete Readiness for Athlete Performance Testing Questionnaire

Note: Participation is voluntary, and participants can opt out at any time or not answer questions they do not feel comfortable with.

Athlete Demographics

Level: Freshman Sophomore Junior Senior

Sport Team: Men's Women's

Sport: _____

Athlete Sleep Screening Questionnaire (ASSQ)

INSTRUCTIONS

The following questions relate to your sleep habits. Please **circle** the best answer which you think represents your typical sleep habits over the recent past. For all questions, circle a letter from 'a' to 'e' unless otherwise specified.

1. During the recent past, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)

    a. 5 to 6 hours

    b. 6 to 7 hours

    c. 7 to 8 hours

    d. 8 to 9 hours

    e. more than 9 hours

2. How many naps per week do you take?

    a. none

    b. once or twice

    c. three or four times

    d. five to seven times

3. How satisfied/dissatisfied are you with the quality of your sleep?

    a. very satisfied

    b. somewhat satisfied

    c. neither satisfied nor dissatisfied

    d. somewhat dissatisfied

e. very dissatisfied

4. During the recent past, how long has it usually taken you to fall asleep each night?

a. 15 minutes or less

b. 16 – 30 minutes

c. 31 – 60 minutes

d. longer than 60 minutes

5. How often do you have trouble staying asleep?

a. none

b. once or twice per week

c. three or four times per week

d. five to seven days per week

6. During the recent past, how often have you taken medicine to help you sleep (prescribed or over the counter)?

a. none

b. once or twice per week

c. three or four times per week

d. five to seven times per week

7. Considering only your own “feeling best” rhythm, at what time would you get up if you were entirely free to plan your day?

a. 5:00 am – 6:30 am

b. 6:30 am – 7:45 am

c. 7:45 am – 9:45 am

d. 9:45 am – 11:00 am

e. 11:00 am – 12:00 pm (noon)

8. How alert do you feel during the first half-hour after having awakened?

a. not at all alert

b. slightly alert

c. fairly alert

d. very alert

9. Do you consider yourself to be a morning type person or an evening type person?

a. definitely a morning type

b. more a morning type than an evening type

c. more an evening type than a morning type

d. definitely an evening type

10. Considering your own “feeling best” rhythm, at what time would you go to bed if you were entirely free to plan your evening?

a. 8:00 pm – 9:00 pm

b. 9:00 pm – 10:15 pm

c. 10:15 pm – 12:30 am

d. 12:30 am – 1:45 am

e. 1:45 am – 3:00 am

11. When you are travelling for your sport, do you experience sleep disturbance?

a. Yes

b. No

12. When you are travelling for your sport, do you experience daytime dysfunction (feeling generally unwell or having poor performance)?

a. Yes

b. No

13. Are you typically a loud snorer?

a. Yes

b. No

14. Have you been told that you choke, gasp, or stop breathing for periods of time during sleep?

a. Yes

b. No

15. On average, how many caffeinated products (caffeine pills, coffee, tea, soda, energy drinks) do you have per day? For coffee and tea, one drink = 6-8oz/177-

237ml; for caffeinated soda, one drink = 1 can (12oz/355ml)?

a. Less than 1 per day

b. 1-2 per day

c. 3 per day

d. 4 per day

e. 5 or more per day

16. Over the recent past, how often do you use an electronic device (example: cell phone, computer, tablet, T.V. etc.) within 1 hour of going to bed?

a. Not at all

b. 1-3 times per week

c. 4-6 times per week

d. Every day

Athlete Readiness

Pre-RPE: Circle your rating of how you feel prior to testing, with 1 being fully rested and 10 being totally exhausted.

1 2 3 4 5 6 7 8 9 10

Hydration: Rate how you perceive your hydration level prior to testing, circling the number from 1 – 4 based on the indicators provided.

1 Severely Dehydrated

2 Slightly Dehydrated

3 Dehydrated

4 Hydrated

Menstrual Cycle (Female Athletes Only): Circle the letter of the phase you are currently in

A. Follicular Phase (Days 1-14)
B. Ovulation (Day 14)
C. Luteal Phase (Days 15-28)
D. Menstruation (Days 1-5)

Athlete ID# _____

Athlete Readiness for Athlete Performance Testing Questionnaire

Post-RPE: Circle your rating of how you feel after the testing, with 1 being fully rested and 10 being totally exhausted.

1 2 3 4 5 6 7 8 9 10