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IN THE SPOTLIGHT

Leaving it Better than it Was

Magie Lacambra, Med, ATC

Jamie Reed is one of the most respected athletic trainers in Major League Baseball. The Maryland native began his career in the Baltimore Orioles organization where he spent 7 years working his way through the club's minor league system. An offer in 1989 to become an assistant AT with the Orioles Big League team from then Orioles Head Athletic Trainer, Richie Bancells, sparked a long and successful career in MLB for Reed. After 8 years with the Orioles, Reed became the first Head AT with the expansion Tampa Bay Rays, a role he held from 1997-2002. Reed's next and final stop in MLB was with the Texas Rangers as Head Athletic Trainer from 2003 – 2013 and then Senior Director Medical Operations from 2014 – 2025.

With such a long career, Reed saw many changes within baseball and athletic training. Advances in technology, modalities, rehab programs, and larger staffs. "You are obligated, and you owe it to your team and your players to be caught up on the science of making people better. Don't be stubborn or dug in on 'this is how we're going to do it'. Be flexible and fluid in your studies and your reading, "shares Reed.

Jamie is a leader without an ego. In his first Head Athletic Trainer position with the Rays, he hired Ron Porterfield and Ken Crenshaw. The two had previous roles in athletic training and strength and conditioning. "We spent a year putting the program together for Tampa Bay and I learned the true value of a weight room and SCC, since the last 30%-50% of a rehab is in the weight room, so I was open to communication and all of us collectively working as a team for the best of the player and what's best for the player is best for the team," shares Reed.

With his open-minded approach to athlete care, Reed's staff with the Rangers included athletic trainers, physical therapists, massage therapists, a Pilates instructor, and a dietitian. "I got better when I set my ego aside and allowed the specialist to come in and do whatever they could to help the players be better," admits Reed. "It's not about me or my staff; it is about the player and the team. Having open dialogues with each other where you can say what you think, that has really been part of my success, and I hope the Rangers' medical team's success."

In addition to his work directly with each ball club, Reed also devoted much of his career to PBATS (Professional Baseball Athletic Trainers Society). It began with Jeff Cooper appointing Reed to run the PBATS Spring Training Seminar in Florida early in his career. "I do not think I was experienced enough to do what Coop asked me to do, but I wasn't going to say no," admits Reed. For the next 19 years, Reed was synonymous with PBATS, serving on the Executive Board as American League Assistant Athletic Trainer Representative for one year; 3 terms as President; and 3 terms as Past President, a testament to the respect and trust the membership had in Reed. "I have been proud to be associated with that group and to see now how much MLB respects and leans on PBATS for education is incredibly rewarding," shares Reed.

IN THIS ISSUE

During the busy days of a long season, Reed found a way to give back to the community. “I have a passion for youth baseball injuries and the negatives of sport specialization. I would like to see MLB tap into PBATS and have a truly educational forum of preventing youth injuries. If I had a legacy, it is my passion to protect kids. To protect the great sport of baseball by giving these kids a chance to pitch in high school, college, and maybe in the pros,” shares Reed. Jamie has spoken to many groups of parents and coaches on this topic. Now, with 4 grandsons playing baseball and 2 granddaughters playing softball, the pressure placed on kids to play and pitch day after day, is even more evident to Reed. “As Richie used to say, ‘education is the difference maker,’ and we have the power of MLB behind us to protect your child,” shares Reed.

In addition to trying to improve the setting for kids playing baseball, Reed also hopes there is change for athletic trainers in MLB. The season consists of 162 games played in 180 days, plus post-season if fortunate to qualify. This grind of the season is a concern for Reed. “It is such a demanding job. Long hours and consecutive days. No offseason anymore. It is the playing season and the non-playing season. The physical and mental health of AT’s and the respect they deserve is always a concern of mine,” admits Reed. With more educated leaders in baseball, Reed hopes someone will step up and make the necessary changes for the betterment of players, coaches, athletic trainers, and all support staff in the game.

In 2020, Reed started talking about stepping away from the game with his wife Jean. He shared this with John Daniels, Rangers GM at the time. Together, Reed and Daniels devised a plan for his transition. The Rangers then won the World Series in 2023, which would have been an easy time to leave, but new GM Chris Young asked Reed to stay as involved as he wanted in any capacity that he and Jean were comfortable with. That transition slowly worked its way to the end of the 2025 season. “I have probably spent more time at the ballpark over the last 44 years than I have at home. I was ready for the transition and so was Jean,” admits Reed. “The time was right. I am not taking World Series trophies or rings away from my career, I am taking my friendships from my career and that is the best part.”

Reed’s influence on the game and leaving the setting in a better place than when he started is important to him. He is very proud of the assistants that he has had on his staffs, how he may have impacted them, as well as the impact they all have made on those that followed. “I was the first branch in Richie’s tree, so I think it would make me feel good to know that I left a footprint as I go out. I have had so many blessings in my career, but I can’t think of any bigger than Richie Bancells,” shares Reed. “I learned so much from Richie that if you are going to use blessed in a word, that would be one of them. To be his assistant for 8 years was a blessing. And then when I went to Tampa Bay and was able to work with Ken Crenshaw and Ron Porterfield, two of the biggest shakers and movers in PBATS and the generation after me. It is truly amazing,” continues Reed.

Jamie, you can step away from baseball and go spend more time with Jean. Go spend more time with your kids and grandkids and enjoy their little league baseball and softball games. Put your captains license to use and sail wherever you and Jean desire without having to worry about a calendar. Do all that knowing that you have left a positive imprint on the game of baseball and PBATS.

NEWS AND NOTES

2025 PBATS Major League Staff of the Year

Toronto Blue Jays
Drew MacDonald, Jose Ministral, Voon Chong

2025 PBATS Minor League Athletic Trainer of the Year

Manny Lopez
Cincinnati Reds

2025 PBATS Minor League Athletic Training Staff of the Year

Cleveland Guardians

2025 PBATS Minor League Athletic Trainers of the Year Individual League Awards

Medical Coordinator	Bryan Housand	Minnesota Twins
Latin America Coordinator	Manny Lopez	Cincinnati Reds
International League	Jacob Legan	Cleveland Guardians (Columbus Clippers)
Pacific Coast League	Hoshito Mizutani	Colorado Rockies (Albuquerque Isotopes)
Eastern League	Timothy Vigue	San Francisco Giants (Richmond Flying Squirrels)
Southern League	Dylan Culwell	Los Angeles Angels (Rocket City Trash Pandas)
Texas League	Brad Groleau	Kansas City Royals (Northwest Arkansas Naturals)
Florida State League	Marissa VanHassel	Philadelphia Phillies (Clearwater Threshers)
California League	Masa Koyanagi	Los Angeles Angels (Inland Empire 66ers)
Carolina League	Lauren Gottschall	Milwaukee Brewers (Carolina Mudcats)
Midwest League	Micah Gerhart	San Diego Padres (Fort Wayne TinCaps)
South Atlantic League	Ruben Santiago	Tampa Bay Rays (Bowling Green Hot Rods)
Northwest League	Katie Reyes	Toronto Blue Jays (Vancouver Canadians)
Arizona Complex League	Luis Estala	Cleveland Guardians (ACL Guardians)
Florida Complex League	Toni Lee	Atlanta Braves (FCL Braves)
Dominican Summer League	Marlon Carvajal	Colorado Rockies (DSL Rockies)

2025 PBATS Athletic Trainer 20 Year Service Award

Josh Fallin	Chicago White Sox
Steve Gober	Cincinnati Reds
Chris Gorosics	San Francisco Giants
Masa Koyanagi	Los Angeles Angels
Alan Rail	Baltimore Orioles
Brian Reinker	San Francisco Giants
Jason Roberts	Seattle Mariners
James Stone	Kansas City Royals
Robert Tarpey	Los Angeles Angels

2026 All Star Game Athletic Trainers

NATIONAL LEAGUE	Paul Buchheit	Philadelphia Phillies
	Yosuke Nakajima	Los Angeles Dodgers
AMERICAN LEAGUE	Jeff Collins	Athletics
	Eric Munson	Los Angeles Angels

2026 Future Game Athletic Trainers

Manny Lopez	Cincinnati Reds
Justin Ahrens	Philadelphia Phillies
David Archer	Philadelphia Phillies

2025 PBATS Team Physician 20 Year Service Award

Dr. Brian Busconi	Boston Red Sox	Dr. Jeff Fortes	Cincinnati Reds
Dr. S. David Jarrett	Houston Astros	Dr. John Lach	Cincinnati Reds
Dr. Brooks Lide	Atlanta Braves	Dr. Gary Lourie	Atlanta Braves
Dr. Brian Mahaffey	St Louis Cardinals	Dr. James M. Neff	Houston Astros
Dr. Scott Palmer	Chicago White Sox	Dr. Brian Patterson	Houston Astros
Dr. David Reichel	Baltimore Orioles	Dr. Jason Robertson	Cincinnati Reds
Dr. Jan Sanders	Cincinnati Reds	Dr. Jeffrey Schlimmer	Houston Astros
Dr. Brian Schofield	Baltimore Orioles	Dr. Nilesh Shah	Cleveland Guardians
Dr. William Silver	Tampa Bay Rays	Dr. Mark Tetz	Arizona Diamondbacks
Dr. Nikhil Verma	Chicago White Sox		

Use of Technology in Rehab and Throwing Programs for Professional Baseball Players

Jon Kotredes, Washington Nationals, ATC,
Nick Flynn, Atlanta Braves ATC

Over the past several years, as the number of throwing injuries, particularly UCL injuries, continues to rise, there continues to be debate in the industry about what constitutes a safe and effective return to throw progression. Are we going too slow? Too fast? How many throws? What distance? How hard should I throw? These are all questions asked by players, ATC's and MD's alike.

Increasingly more people are turning to the use of technology to help them guide some of these decisions they are making by providing objective data. In this article we will discuss the use of the Pulse (Motus) sleeve, Trackman and the radar gun as 3 pieces of technology that are commonly used in return to throw programs.

The Pulse, which was formerly known as motus, is another tool frequently used when throwing and designing throwing programs. It is a small sensor which is worn in a sleeve or strap placed below the elbow while throwing.

It measures and collects different pieces of data when throwing, including number of throws, arm angle, arm speed and elbow torque. It also measures high effort throws which is based off of the elbow torque data. This can be used to measure total workload, calculate acute to chronic workload ratios and monitor different metrics. This data can be used to adjust, design and monitor throwing programs.

One of the major advantages of using this is to attempt to monitor and measure throwing intensity. Arm angle varies from player to player, but you can use that number to see what is normal for an individual. This can let you know if throwing mechanics are changing. Asking a player to subjectively throw at a certain intensity is unreliable and it can be difficult to understand the total workload from throwing without knowing intensity. The metrics provided can offer objective data.[1] You can use the number of high intensity throws, based off elbow torque and arm speed, to gain a better understanding of how difficult the throws have been.

Research shows that injury risk increases when the acute to chronic workload ratio exceeds a certain level.[2] By having the pulse data, you can view and graph a more accurate workload. This can be used to adjust a throwing program to prevent intensity from increasing too quickly.

Radar guns have long been used to measure the velocity of pitches and throws alike. They can be used as part of a return to throw program as a objective way of monitoring intensity. If you are able to continually objectively monitor intensity then you should be able to gradually increase the stress across the injured area and potentially provide a more gradual and appropriate ramp up in throwing. Studies have shown that as ball velocity increases, so does the amount of varus torque across the elbow joint. The higher the torque, the higher the stress on the ulnar collateral ligament.[4] However at set speed (ex 80 MPH) in one pitcher does not place the same amount of varus torque as another pitcher. Using velocity to measure the increase in intensity works great to perform a gradual build up over time for the same athlete. However, where the starting point should be may differ greatly between athletes.

Another tool used to track multiple metrics is Trackman. Trackman can be used to provide objective data on multiple things such as ball speed, arm angle and release point as well as others. Previous to having this objective data most throwing programs and mound progressions relied on rate of perceived exertion (RPE) to measure intensity level. Studies have shown that even decreased RPE's potentially do not lower torque and other forces across the elbow joint.[5] This puts healing tissue at risk of facing higher loads than intended.

Arm angle and release point are also important data points to monitor as studies have shown that more lateral release points and lower arm angles tend to create higher forces across the elbow joint.[6]

These are just a few of the ways that technology can play a role in the rehab process and can help provide coaches and trainers with data to help guide the return to play progression for players. As the technology evolves and improves, it will be important to stay up to date with new tech and evaluate its potential usefulness in guiding these return to play progressions.

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SPORTS MEDICINE

Red Light Therapy – *What is it? What does it do? How do we use it?*

Jacob Newburn, Major League Assistant Athletic Trainer, Texas Rangers
Sean Fields, Major League Assistant Athletic Trainer, Texas Rangers

Walking around the Vendor Showcase at the PBATS Baseball Winter Meetings in December of 2025, it was impossible to miss the influx of Red Light modalities. Ammortal and Aspen/TheraLight had large machines on display, but there were other companies spread around the room offering some form of red or infrared therapy amongst their product lineup. The spotlight, pun intended, has been shining brighter on Red Light therapy over the last few years. Therabody has added it to their compression boots. Beauty companies are selling wands, masks, wraps, and panels that purport to rejuvenate skin. Wellness centers and Spas are charging good money for just a 30min session of Red Light Therapy. So what is all the buzz about? What is all this light exposure actually doing? Does it really improve recovery for our athletes?

What is it?

True red light is part of the visible light spectrum between the wave lengths of 600 and 700nm, however most devices produce wavelengths between 660-1000nm which actually covers both the red light and near-infrared (NIR) spectrums. Research has shown that true Red Light at 600-700nm can cause mitochondrial stimulation via cytochrome c oxidase which increases enzyme activity, increase oxygen consumption, and ATP production. Studies also show that NIR wavelengths between 780-980nm have been shown to provide the same effect. Furthermore, at the higher end of the spectrum, NIR can be absorbed by intracellular water creating a heat effect. The NIR spectrum covers wavelengths from 780-1400nm. From 1400-50000nm is mid-infrared, and from 50000-100000nm is considered far-infrared (FIR). Any wavelength above 980nm has been shown to have minimal effect on cytochrome c oxidase and the most profound effect it seems to have on the body is via intracellular water and the creation of heat. Most infrared saunas operate on these higher wavelengths to create the heat effect from inside the body.

What does it actually do?

At the lower wavelengths the changes that occur at the cellular level are due to the stimulation of endogenous chromophores to stimulate biological processes. These processes aid in wound healing, pain relief, and stimulation of stem cell production. The higher wavelengths create heat that can also aid in relieving stiffness and muscle fatigue. Studies have shown beneficial effects in alleviating DOMS (delayed onset muscle soreness) at 48hrs in athletes following strenuous training sessions. Research on osteoarthritis of the knee showed beneficial effects on pain and reduction of inflammation with treatments between the 785-905nm wavelengths, with the 904-905nm wavelengths showing deeper penetration.

What products work?

When it was initially introduced, red light therapy was called Low-Level Laser Therapy (LLLT). The initial research was all performed with "cold" lasers but recent research has shown that LEDs are just as effective at stimulating cellular responses as lasers. This led to the use of the term photobiomodulation (PBM) to describe red light and NIR therapy. Recently there have been studies showing that clothing made with certain fibers and minerals can harvest body heat to transform heat

energy into radiation at wavelengths between 3000 and 20000nm. These wearable infrared clothes have been shown to increase blood circulation and cellular metabolism.

There has been an introduction of an abundance of products on the market, many of which do not undergo third party testing to ensure that the wavelengths that they advertise are what are irradiated. Additionally, manufacturers that do test their products, often test at the light source and not at the projected target for their devices. It is necessary to understand the target distance for the device you are using to ensure that you are getting the wavelengths and irradiance values that you are intending for the clinical outcomes desired.

Conclusion – How should we use it?

Red light therapy has exploded onto the wellness market over the last few years. As such the market is flooded with many options and biased studies purporting to cure low testosterone, male baldness, muscle soreness, and the list goes on and on. Anecdotal evidence has shown good results with regards to improved sleeping and recovery in athletes. However, peer-reviewed science has been studying the effects of Red Light and infrared radiation for years and has found that the benefits of Red Light Therapy happen between 660-680nm and the benefits of NIR happen between 810-980nm. Above 980nm the typical physiological response will be heat related. These studies show positive effects on inflammation, pain, and wound healing.

Most devices on the market focus on producing wavelengths in those ranges, though many are not third party tested and offer no guidance on target distance or dosage. Studies have noted a "biphasic dose response" that appears to show a diminishing return for over-exposure with some noting of negative or inhibitory effects at high quantities of exposure. Therefore, it is imperative to seek out responsible companies that test their products and provide guidance on treatment distance and dosing to ensure that the product is providing the desired effect on tissue. Red light and infrared therapies have been shown to be extremely beneficial in the rehab and recovery process, and players are beginning to ask for it and purchase their own devices. It is incumbent upon us as clinicians to understand the science behind it so that we can help guide them to the better products and ensure safe administration for their desired clinical outcomes.

SPORTS SCIENCE

Fueling Performance Starts with Sleep

Joanna Fong-Isariyawongse, MD and
Kim Schwabenbauer, DHSc, MS, RD, CSSD

Athletes at all levels, including recreational, collegiate and professional, are susceptible to sleep deprivation due to demanding training schedules, frequent travel, psychological stress and daily obligations. These pressures are well documented to reduce sleep quality and duration, with known consequences for performance and injury risk.[1,2,3]

Appetite Hormone Dysregulation

Sleep plays a critical role in maintaining hormonal balance, particularly in the regulation of appetite. Sleep restriction consistently leads to an increase in ghrelin, a hunger-stimulating hormone produced by the stomach, and a decrease in leptin, a satiety hormone released from adipose tissue.[4,5] This hormonal shift promotes increased appetite and reduces post-meal satisfaction.[6]

Studies have shown that even short-term sleep restriction, such as one or two nights of insufficient sleep, can significantly raise ghrelin levels and lower leptin concentrations. This hormonal imbalance increases hunger and drives a stronger preference for calorie-dense foods.[4,5,6] These endocrine changes often emerge after just one night of restricted sleep and tend to worsen with ongoing sleep debt.[5]

Recent findings further support the rapid onset of these effects, with changes in hormone levels occurring by the following morning after sleep deprivation.[7,8] The American Heart Association has identified this disruption in appetite-regulating hormones as a key mechanism linking short sleep duration to increased energy intake and obesity risk.[9]

Altered Neural Reward Processing

Beyond hormonal disruptions, sleep deprivation also alters brain function in ways that increase vulnerability to poor dietary decisions. Neuroimaging research shows that sleep loss significantly impacts brain regions involved in both reward processing and self-regulation. Specifically, it heightens activation in the amygdala and nucleus accumbens, centers that process hedonic and motivational responses to food, while dampening activity in the prefrontal cortex, which is responsible for impulse control and decision-making.[10,11,12,13,14]

Additional evidence confirms that these changes can occur after just one night of restricted sleep.[12] Partial sleep deprivation has been associated with increased activation in both the nucleus accumbens and prefrontal cortex in response to food stimuli, reinforcing the link between sleep loss and heightened food cue reactivity.[13] Over time, chronic sleep restriction appears to intensify these effects, boosting the motivational value of calorie-dense foods and weakening the brain's cognitive control systems.

Following sleep restriction, individuals exhibit greater responsiveness to high-calorie food cues and a reduced ability to resist them. In research studies, participants rated high-calorie foods as more desirable after sleep deprivation, regardless of hunger, due to amplified reward center activity and diminished prefrontal inhibition.[10,12] These neural shifts make energy-dense foods more tempting and harder to resist.

Collectively, these alterations in neural processing bias athletes toward immediate gratification. As a result, it becomes more difficult to follow structured nutrition plans or achieve optimal body composition.

Impaired Glucose Metabolism

Short sleep duration has a well-documented negative impact on glucose metabolism and insulin sensitivity. Even brief periods of sleep restriction, such as 4–5 hours per night, can impair the body's ability to regulate blood sugar. Studies have shown that insufficient sleep reduces whole-body glucose uptake and slows glucose clearance, leading to elevated blood glucose levels and increased fat storage.

In the athletic population, such impairments could have important performance consequences. Disrupted glucose metabolism may reduce carbohydrate availability for contracting muscles, delay post-exercise recovery and hinder training adaptations. As a result, ensuring adequate and high-quality sleep should be considered a foundational strategy for metabolic health and performance.

For athletes, carbohydrates remain the primary fuel source, particularly during moderate- to high-intensity training. The American College of Sports Medicine emphasizes that carbohydrate intake should be individualized and periodized according to training demands—even in the context of sleep loss.[15,16] There is no evidence supporting routine carbohydrate restriction in sleep-deprived athletes. Instead, practitioners should focus on optimizing sleep quality while maintaining carbohydrate timing, quality and quantity to support performance and recovery.

Elevated Cortisol and Fat Accumulation

Sleep deprivation is closely linked to elevated secretion of cortisol, and elevated cortisol has multiple metabolic consequences. It promotes fat storage, particularly in the abdominal region, and interferes with muscle protein synthesis and energy regulation[17]. Chronically elevated cortisol contributes to visceral fat accumulation and reduced insulin sensitivity. Supporting this, data have shown a causal relationship between higher cortisol levels and reduced muscle strength and lean body mass, reinforcing its role in catabolic processes and muscle protein breakdown.[18,19]

Among athletes, persistently high cortisol levels can hinder recovery, slow lean mass development and increase the risk of injury. The American College of Sports Medicine and the American Medical Society for Sports Medicine have reported that chronic cortisol elevation, particularly in the context of overtraining, is associated with lower testosterone-to-cortisol ratios, diminished anabolic signaling and impaired musculoskeletal repair.[2] Sleep debt may further exacerbate injury risk by increasing catabolic activity and weakening tissue integrity.[20] Long-term cortisol elevation has also been observed in endurance athletes and is linked to adverse outcomes such as muscle loss and impaired recovery.[21]

Summary

Sleep is a critical regulator of the hormonal, metabolic and cognitive systems that shape nutritional outcomes and athletic performance. When sleep is insufficient, athletes experience disruptions in appetite-regulating hormones, stronger cravings for high-calorie foods, impaired glucose metabolism and elevated cortisol levels. These changes can undermine nutritional strategies, limit training adaptations and increase the risk of injury. Therefore, optimizing sleep should be considered a foundational pillar, alongside nutrition and training, for achieving peak performance and long-term athletic success.

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