COACHES MANUAL

WHOOP®

UNLOCKYOURSELF

TABLE OF CONTENTS

WHOOP

TABLE OF CONTENTS

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SECTION A

WHY MONITOR RECOVERY

Daily insight into athlete stress (disruptions in homeostasis) and recovery (athlete's return to baseline) can help coaches capitalize on opportunities associated with well-being and mitigate risks associated with under-recovery or under-training.

WHAT WE KNOW:

- High intensity and volume without sufficient rest may lead to under-recovery (Kinucan & Kravitz, 2007).
- Under-recovery is characterized by a decrease in performance and in the worst case also other harmful effects on health (Ka, 2013).
- An under-recovered athlete may take from several weeks to months to regain full form, but it is also possible that an athlete never reaches the same level of performance as before under-recovery occurred (Budgett, 1998). See Figure 1.
- Individual athletes may respond differently to a particular training stimulus, therefore the training load required for adaptation may differ greatly from one athlete to another (Halson, 2014).
- Prevention of over-training is crucial, and is possible by a systematic tracking and assessment of the how the athlete is adapting to designed stress (Halson, 2014).

FIG. 1. UNDER RECOVERED

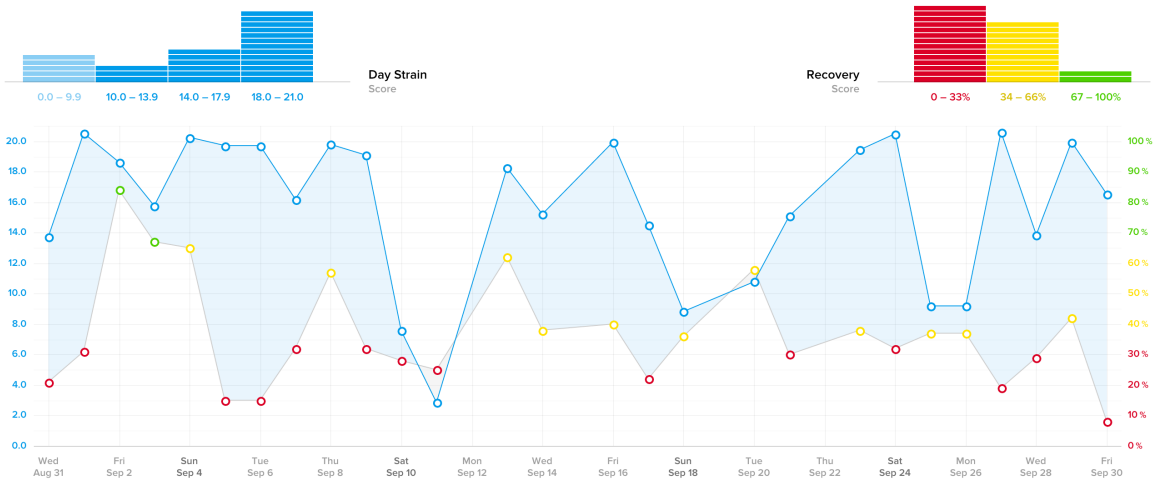

Fig. 1. Notice that this athlete (over a month) had consistently high day strain numbers, very few days off, and after the first couple days couldn't get Recoveries out of the gutter. (source: prod user 4786, month of September, 2016)

BENEFITS FOR THE COACH

- Evaluate how an athlete is responding to training and make determinations about athlete readiness.
- Ensure that the internal load experienced by the athlete corresponds with that intended by the coaching staff.
- Improve your certainty and confidence in the potential reasons for changes in performance.
- Reduce the risk of injury, illness, and overtraining syndrome.
- WHOOP never deletes your data, allowing you to explore short and long term trends to more fully understand recovery-performance relationships (i.e., travel and Recovery, impact of short- term increases in load and Recovery, Sleep performance and Recovery etc.).
- Create personalized data-driven training plans for each athlete to ensure they peak when it matters most.
- Improve communication and relationships with support staff, athletes, and coaches.
- Improve confidence and belief associated with your training program.

BENEFITS FOR THE ATHLETES

- Can help the athlete recognize the enormous power they possess to intentionally behave in a way that maximizes mental, physical, and emotional potential.
- Empower athletes to take ownership of their training.
- Increase sense of ownership and control.
- Facilitate productive performance-related conversations with support staff and coaches.
- Increase awareness of how their behaviors correlate with Recovery.
- WHOOP objectively quantifies the performance-cost of undesirable behaviors, thereby encouraging positive behavioral changes.

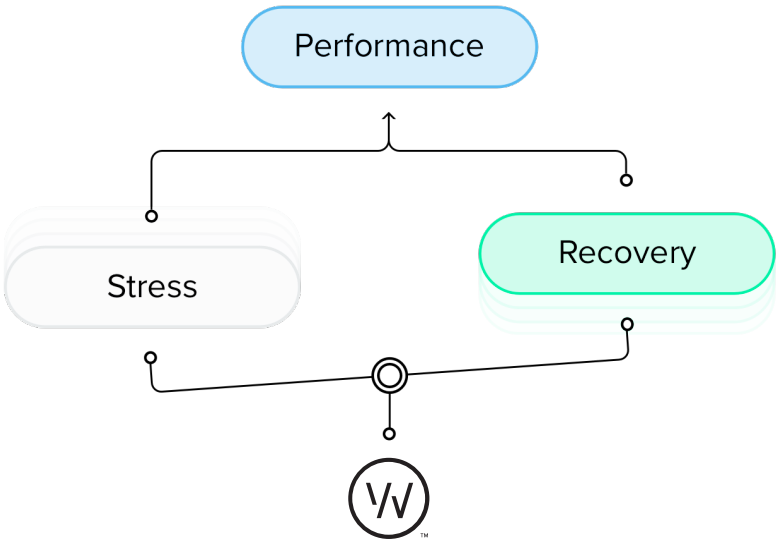

FIG. 2.

STRESS, RECOVERY AND PERFORMANCE

Researchers suggest that maintaining a balanced stress to Recovery ratio allows athletes to train more, and thus improve their overall aerobic capacities, strength, technique, and efficiency (Kellman, 2010).

COACHING WITH WHOOP

Athlete

"What if I don't want to wear my WHOOP all the time?"

Coach

"WHOOP is designed for **24/7** *use. When a significant period of Strain is missing (such as a competition or workout), WHOOP never attempts to guess or default the Strain; therefore, this missing data therefore introduces inaccuracies in two places for the day on which it takes place.*

The first is Day Strain - a user's calculated Day Strain will be lower than his or her true physiological Strain on the day, because they will get 0 credit for the period of time in which the strap was not worn. The second place is Sleep Coach, because of the low Day Strain, Sleep Coach will present a lower Sleep Need recommendation than what the user actually needs. Knowing this, an athlete can add to his or her time in bed proportionally to the competition's perceived strain. The good news is WHOOP Recovery does not take Strain or Workout data as an input - it is simply not necessary because to the extent that your body actually experienced the Strain (even though you didn't record it), we can detect the down-stream impact of the Strain and measure Recovery with the same accuracy and confidence level as if you had never taken the strap off! This means that even though Day Strain and Sleep Coach were off on the day of the missed Strain, by the time you wake up the next morning, you are back to a fully-functioning system which is no worse for the missed data."

"Why do I feel good but my Recovery is in the "Red"?"

"How you "feel" and "your potential for performance" are not necessarily correlated."

"How does Alcohol impact my Recovery?"

"Alcohol use can harm athletic performance in many ways, including short-term effects such as hangovers, which have been shown to reduce athletic performance by 11.4% (O'Brien, 1993). In a study performed by WHOOP, researchers were able to show that Recovery Scores are suppressed for as many as 5 days after consuming alcohol."

INTERESTING FACT

Recent evidence suggests that many athletes, coaches, and support staff are taking an increasingly scientific approach to load monitoring (Halson, 2014). Utilizing scientific principles for load monitoring can be an important means of reducing the risk of under-recovery, illness, and injury (Halson, 2014).

Analysis performed by WHOOP's Department of Physiology demonstrates that WHOOP Athlete Monitoring Technology may have a positive impact on athlete behavior by showing that as time using the platform increased, the athletes analyzed dedicated more time to sleep while also decreasing the frequency of three behaviors that negatively impact Sleep.
The study also demonstrated the direct value-add of these behavioral modifications, by demonstrating the presence of concurrent decreases in the prevalence of both injuries and illnesses, the increased heart rate variability, and the decreased resting heart rates.

KEY TAKE AWAY

Objective data generated from WHOOP data can help with correct action selection, planning, execution, and provide the ability to flexibly and appropriately adapt training programs before performance problems occur or opportunities arise.

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SECTION B

HOW WE MEASURE RECOVERY

By considering the measurements of Sleep (sufficiency and quality), RHR (Resting Heart Rate), and HRV (Heart Rate Variability), the athlete is able to understand to what level Recovery was achieved.

WHAT WE KNOW:

- Two independent studies by Mah et al., (2011) Milewski, et al., (2014) showed that sleep duration is correlated with rates of injuries, and numerous studies have shown that RHR and HRV are powerful predictors of athletic performance (Vasterinen et al., 2011, Kiviniemi et al., 2007 and 2009, Plews et al., 2013, Uusitalo et al., 1998).
- In a white paper released by the WHOOP Department of Physiology and Analytics earlier this year, we additionally showed that WHOOP Sleep is correlated with athlete self-reported performance (Breslow, 2016).
- The insight provided by examining sleep in addition to HR and HRV in the morning will enable the athlete to make the most effective behavioral correction(s) and therefore get the most out of his or her training.

WHOOP RECOVERY

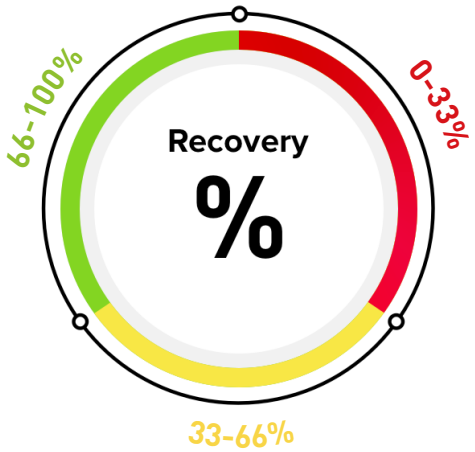


FIG. 1.

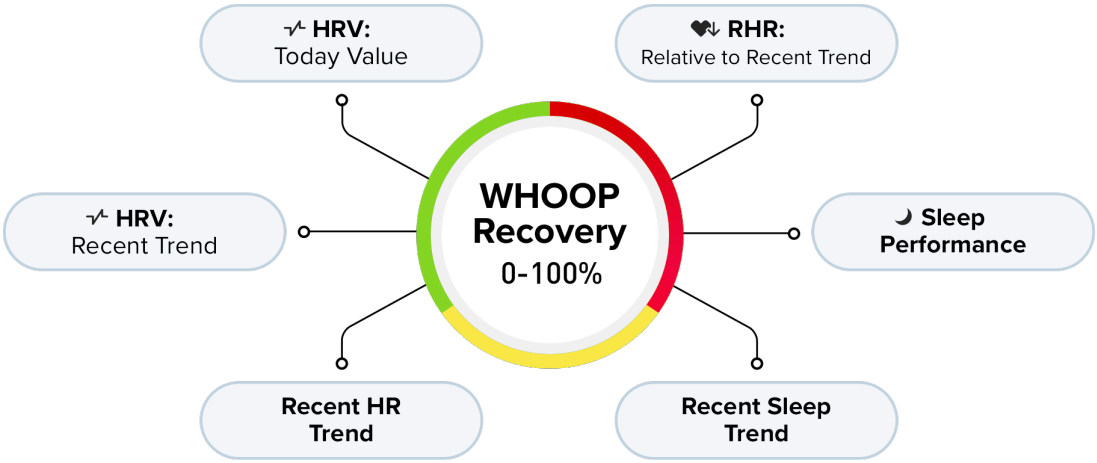
RECOVERY SCALE

Recovery is measured on a 0-100% scale and broken into three levels:

- Sufficient Recovery (green)
- Adequate Recovery (yellow)
- Under-Recovered (red)

FIG. 2. RECOVERY ANALYSIS

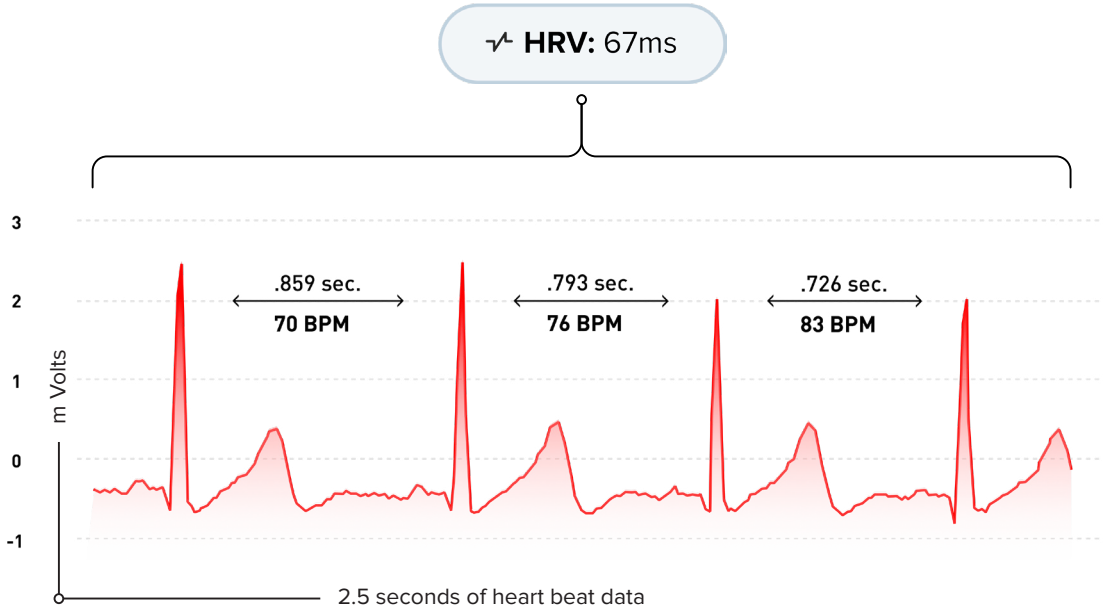
We measure today's HRV, RHR, Sleep Performance as well as recent trends in all those areas.



Key "Players" When Quantifying Recovery

FIG. 3. HEART RATE VARIABILITY (HRV) + RESTING HEART RATE (RHR)

HRV is one of the most useful tools for tracking the time course of training adaptation/ maladaptation of athletes and in setting the optimal training loads leading to improved performances (Dong, 2016).



WHAT WE KNOW:

- HRV is a non-invasive method used to obtain valuable data concerning physiological changes that occur in response to physical activity. (Dong, 2016)
- Changes in the patterns of the athlete's ANS (Autonomic Nervous System) reflected by altered HRV may serve as useful parameters for managing their physical fatigue and establishing their exercise intensity (Plews, 2013).
- Analyzing Recovery after training may provide useful data for the personalization of training, training loads, Recovery times, tracking gains, and avoiding under-recovery (Dong, 2016).
- WHOOP's use of HRV and RHR is unique in that rather than recording these values first thing upon waking up (the method for most HRV monitoring tools), we record them during the last 5 minutes of a user's Slow Wave Sleep.
- For the purpose of WHOOP Recovery, RHR is considered relative to its recent trend. A falling resting heart rate generally means increasing fitness, while a rising resting heart rate can indicate a dangerous progression towards overtraining. (Dong, 2016)
- High or upward trending HRV is a sign the athlete's body is adaptively responding to demands. Increasing baseline HRV numbers (not to be confused with daily fluctuations) can indicate a higher level of aerobic fitness. (Plews, 2013)

SLEEP

The Sleep Performance Algorithm helps to answer the question:
"How much of the sleep I needed tonight did I actually attain?"

WHAT WE KNOW:

- The strength of the relationship between sleep performance and sleep time suggests that while the quality of sleep is important, it cannot make up for insufficient sleep duration.
- Sleep latency is negatively correlated with sleep deprivation.
- Nightly sleep stage monitoring in the athlete population, when applied appropriately, can be used to make training both safer and more effective (Milewski et al., 2014).
- Athletes might need to spend more time in bed than non-athletes to achieve their total sleep need.
- Research has shown that individuals overestimate the amount and quality of sleep they get (Mah et al., 2011).

SLEEP STAGING

- Sleep is the body's mechanism for physical and cognitive restoration. This process occurs in stages throughout a night of sleep.
- Within sleep, each stage serves a distinct purpose (Fig. 4).
- REM sleep is when the brain is restored. It is at this time that ideas and skills acquired during the day are cemented as memories (Buchegger et al., 1991).
- Slow Wave Sleep (SWS) is the time when your muscles repair and grow. 95% of daily production of growth hormones occurs during SWS (Gunning, 2001).
- Wake is included as a sleep stage because it is natural to be awake for brief periods many times in the night. These periods are known as arousals (WHOOP calls them "disturbances"), and on average, a healthy sleeper will experience approximately 20 per night.

FIG. 4. SLEEP STAGES

The restoration process occurs in stages throughout a night of sleep.
The four sleep stages are defined as: Slow Wave Sleep, REM, Light, and Wake.

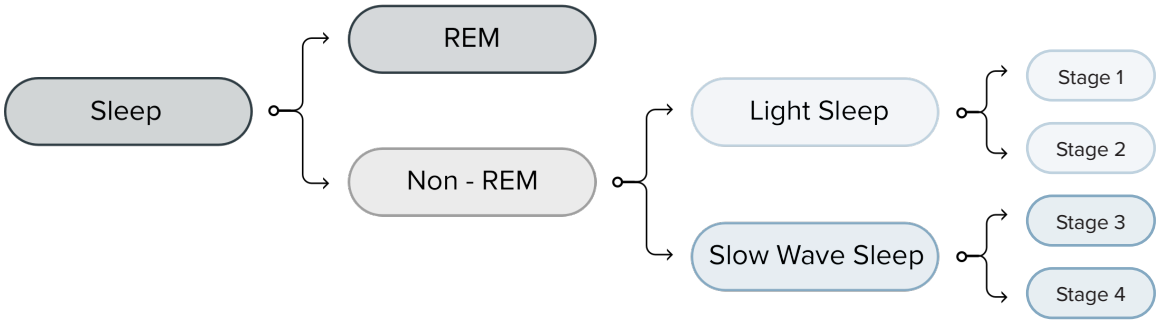


FIG. 5. APPROXIMATE TIME IN EACH STAGE

Sleep is entered through light sleep, transitions to SWS within about 10 minutes, then to REM sleep somewhere around the 90-minute mark. It is normal to have periods of wakefulness. A healthy adult's normal sleep typically contains 3-5 complete cycles.

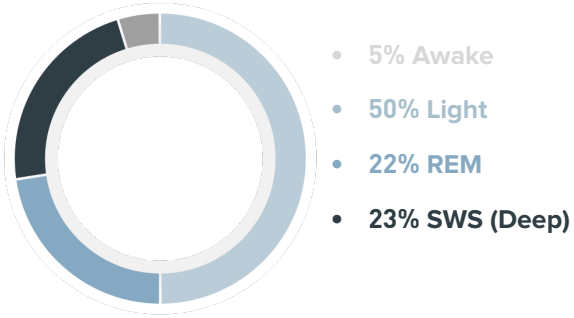


FIG. 6. TOTAL SLEEP NEED

WHOOP calculates your Sleep Need based on 4 factors: your personal baseline sleep, your recent strain, any accumulated sleep debt, and whether or not you've taken any naps in the day. Naps can be a convenient means of dedicating more time to sleep if you can't meet your full Sleep Need in the night.

TIME IN BED

The total amount dedicated to sleep. Includes the time you were asleep and the time spent attempting to sleep.

DISRUPTIONS

Brief disruptions of sleep (3-7 per hour) is normal. They are typically too short to remember the next morning. Frequent disturbances is associated with lower quality sleep.

LATENCY

The amount of time that it takes to fall asleep. Short latency (<10 minutes) could suggest sleep debt.

WHAT WE KNOW:

- On the WHOOP system, Sleep Debt is defined as the amount you were shy of reaching 100% of your sleep need from the previous night.
- Sleep debt increases your sleep need for the coming night, as that deprivation negatively impacts Recovery.
- Sleep Debt will accumulate and build on itself over time if Sleep Need continues to not be met satisfactorily. In this way, the Sleep Coach tool is particularly powerful—with daily insight into your exact physiological needs you can make precise decisions about sleep to get the most out of that time in bed.
- The amount of sleep you need is influenced by how hard the athlete has trained that day. Though the WHOOP calculation is more complex, in general, the higher your Strain that day the more sleep you will need to fully Recover from that training.

COACHING WITH WHOOP

Athlete

"I haven't been wearing my WHOOP strap on rest days, how will this effect WHOOP Recovery?"

"Scores will be too high."

Coach

"It says I got 37 disturbances last night but I don't remember moving around. What's going on?"

"Throughout the night, sleep fluctuates among more and less restful stages, and is often punctuated by upwards of 20 brief disturbances. Individually these disturbance are negligible events but they can add up to lost sleep time. An abnormal amount of disturbances (+30) is usually indicative of poor sleep environment (i.e., room is too bright, noise etc...)."

"It says my HR spike to 120 during sleep. Is this realistic?"

"In the first three stages of sleep cycle, the heart trate and mean arterial pressure normally fall slightly. In the forth stage, the heart rate may speed up in response to dreaming, or nightmares. It is perfectly normal for your HR to spike for brief periods of time during sleep."

"I don't need as much sleep as other people, is it going to adjust for that?"

"Most people are habituated to get an insufficient amount of sleep. Sleep Need is not trying to select what you are habituated to, it is selecting what you "need" in order to get back to baseline."

INTERESTING FACT

Research has shown that there are problems associated with making Performance related or Recovery related assumptions based on single day HRV values (Plews, 2012). The proposed methodology suggests both the trend of absolute levels of HRV, the relationship between Ln rMSSD and R–R interval, as well as that of the variation in the day-to-day HRV (Plews, 2012). You will be happy to know that WHOOP's Recovery Algorithm takes into consideration all of these factors when calculating WHOOP Recovery.

KEY TAKE AWAY

To understand the impact on Recovery, sports scientists need to embrace sleep stage tracking. Coaches and trainers supporting athletes can use objective data to educate and encourage this practice. It is WHOOP's belief, that the next frontier in athlete evolution will be fueled by better sleep.

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SECTION C

TRAINING AND APPLICATION OF WHOOP RECOVERY

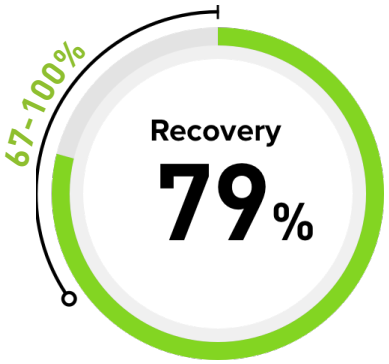
Within both micro (weekly), and meso (specified block) training cycles, it is necessary to balance hard training, light training, and rest.

As addressed in Section A., WHOOP defines Recovery as your body's ability to take on Strain. A majority of scientific literature will define recovery "as your body's ability to meet or exceed performance in a particular activity" (Gandevia, 1998; McLester et al., 2000; Sayers & Clarkson, 2001). This combined view of Recovery implies that every time you help the athlete "recover" (in the right way!), you have helped them to establish a new "ceiling" for performance capabilities. Therefore, how you apply Recovery in your environment will largely determine what the "ceiling" for each athlete will look like.

INTERPRETING WHOOP RECOVERY

At the most superficial level, Recovery is divided into 3 color-coded zones:

FIG. 1.

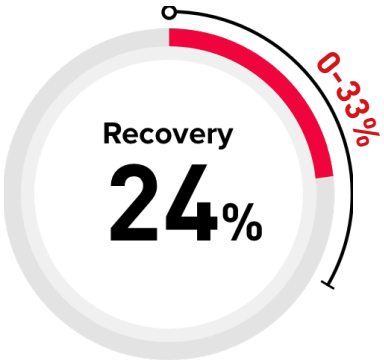


"GREEN ZONE"

- Score is between **67** and **100%**.
- The athlete's body is likely primed to adapt to a larger training load.

"YELLOW ZONE"

- Score is between **34** and **66%**.
- The athlete's ability to adapt to a higher training load might be compromised if Recovery is at the lower end of the yellow spectrum.



"RED ZONE"

- Score is between **0** and **33%**.
- If there was an acute spike in training load during the preceding days, it is normal for the athlete to experience a lower Recovery. If low Recovery persists, look at trends, talk to the athlete and consider possible limiting load until athlete returns to Baseline.

WHAT WE KNOW:

- When a hard training session or training period that causes a significant disturbance in body's homeostasis is followed by sufficient Recovery, performance improvements are likely to occur.
- Performance improvements occur during Recovery from training, not during workouts, this means that the more physiologically challenging a workout, the more important it is to prioritize Recovery in the aftermath.
- Periodization is important in training. Usually athletes have several very hard training periods each year, during which both the intensity and volume of training are very high. These kind of overreaching periods are exhaustive but necessary for elite athletes to further improve their performance. However, as noted above, performance can improve only if hard training is followed by adequate Recovery.

WHOOP RECOVERY SCORE TO HELP CONFIRM TRAINING LOAD

"How is the athlete responding to this designed stress?"
"Where do we go from here?"

As you endeavor to help your athletes improve their performance, modifications in training load are required, particularly increases in frequency, duration, and intensity. Training loads are adjusted at various times during the training cycle to either increase or decrease depending on which meso training cycle your team is in (pre-competition, competition, or active rest). To ensure adaptations to training are optimal, Recovery must be monitored and adjusted appropriately across each phase of training.

OPTIMAL TRAINING

Optimal training is when the amount of Strain undertaken is appropriate for the level of Recovery. When training optimally, an athlete is able to make a full Recovery in only a day or two, because the Recovery deficit is kept under tight control. This allows you to maximize gains in fitness while still allowing “green” Recovery days during a competition cycle.

FIG. 2.

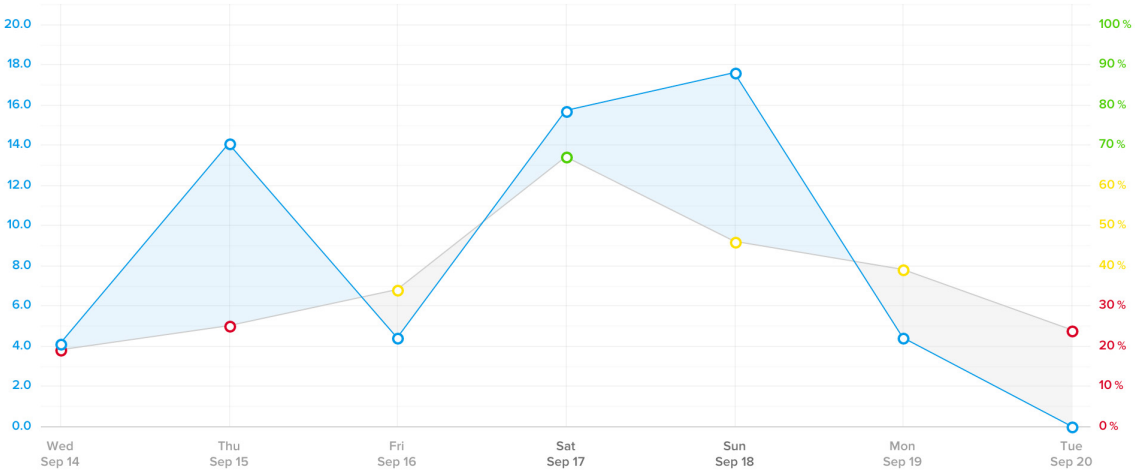


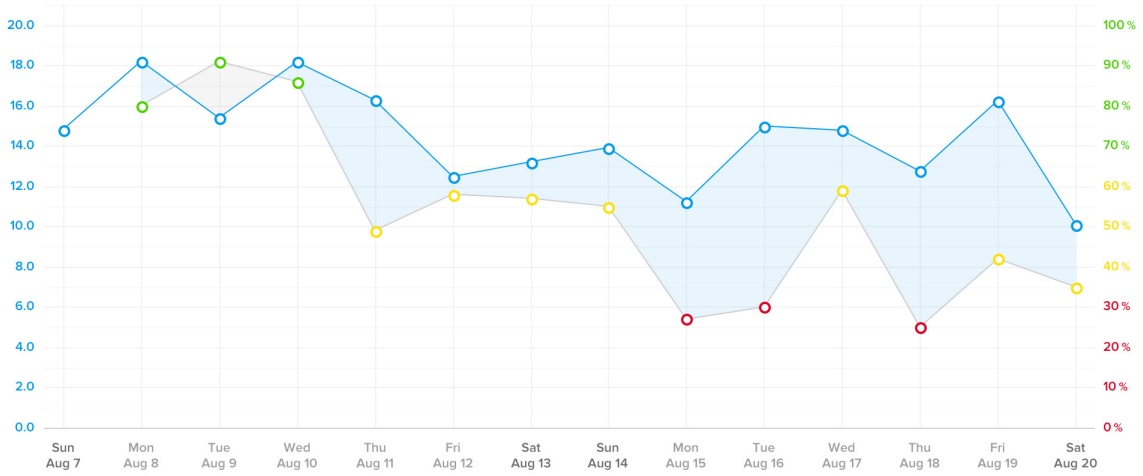
Fig. 2. Notice that when Recovery is low, strain is usually kept low, and when it isn‘t (9/15) this athlete compensates by keeping it low the next day and is therefore able to recover quickly. Also notice that when Recovery is high, she is taking advantage. (source: prod user 246)

OVERREACHING

Overreaching describes a short burst of Strain overload that can be mitigated within a few days with appropriate rest and Recovery. Overreaching periods are necessary for the elite athlete to further improve performance (Halson, 2014).

During an overreaching period, athletes should experience high training stress and should be tired after every training (Kellmann, 2010). HR will be significantly higher and HRV significantly lower. WHOOP Recovery will be in the lower range (40-66%). When these signs appear, continue training as planned.

FIG. 3.



TAPER

The taper is a progressive reduction of training load (Mujika & Padilla, 2003). Tapering athletes will look similar to under-training athletes in that they will have many days in which Strain is lower than Recovery would theoretically allow for, however taper differs from under-training in that taper is a strategic process designed to maximize Recovery on key events (ex: competition) whereas under-training is the failure to action an advantageous physiological state.

FIG. 4.

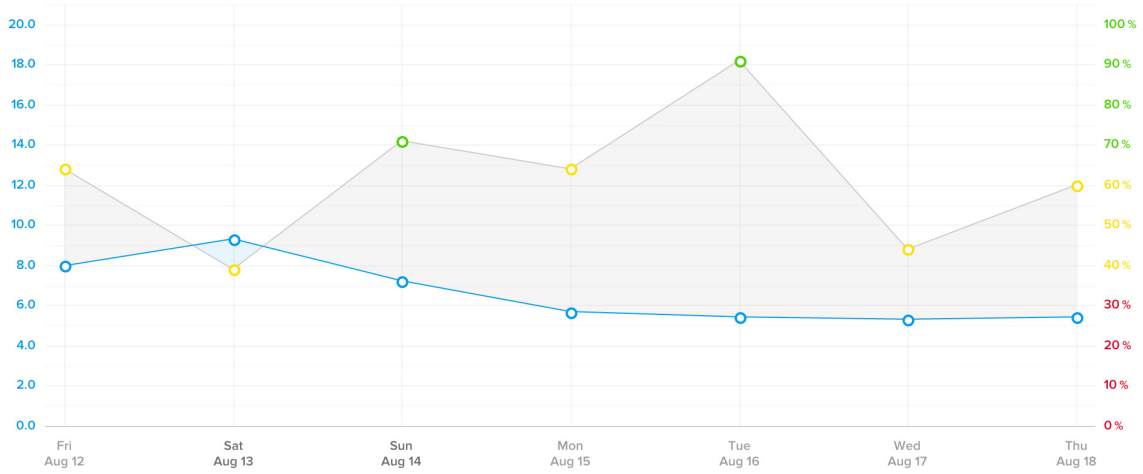


Fig. 4. This athlete clearly has room for more but is keeping Strain low.

UNDER-RECOVERED

Under-recovery is an accumulation of training and/or non-training stress resulting in a long-term decline in performance capacity with Recovery time anywhere from several weeks to several months. This is what athletes refer to when they complain of “burn out.” It is the result of consistently taking on more strain than one’s body is physiologically prepared to handle, such that the Recovery deficit grows more rapidly than it can be repaid.

COACHING WITH WHOOP

SCENARIO 1:

Coach: “We are in an overreaching period but my athlete’s Recovery is top end of yellow/green (65+).”

SOLUTION 1:

Consider adjusting training plan if Recovery does not decrease at all or decreases only slightly. In this case, it is likely that the training load has been too easy and could be a bit harder than the initial plan.

SCENARIO 2:

Coach: “Recovery is in the “red” range for consecutive days and or Recovery drops unexpectedly to a low or poor level.

SOLUTION 2:

Determine if the training has been too hard and control or remove other stressors (e.g. travel, other life stress, illness), if possible. Check in with the athlete on sleep and or other life factors that could be impinging on Recovery (i.e., relationship stress, competency, control etc). A day off or an active rest day could be what this athlete needs.

SCENARIO 3:

Coach: "We are in an overreaching period but my athlete's Recovery is top end of yellow/green (65+)."

SOLUTION 3:

Working out, like anything else needs be done in moderation. Many athletes have the mentality that more = better (not true). Recovery requires significant biological effort. It is likely that the athlete is hampering the necessary repair adaptations by training too much. Advise the athlete to focus on optimizing lifestyle choices around Sleep, nutrition, hydration, rest cycles and, promote active "rest" by encouraging the athlete to engage in Recovery away from the facility (i.e., massage, non-weight bearing light aerobic effect, yoga, meditation, foam rolling and, contrast therapy). Once the athlete is able to stabilize Recovery (consecutive "green Recovery days"), resume training with a daily commitment of working toward a more balanced stress to Recovery ratio.

SCENARIO 4:

Coach: "My athlete is not exercising excessively but is consistently in the red. What is going on?"

SOLUTION 4:

Low Recovery can be generated not just from over-training but also from other nervous system stressors such as sleep, stimulants, alcohol or lifestyle stress (Amann, 2011). Think of the nervous system as the battery that ignites the muscles. If your nervous system is under-recovered, then the strength and function of the muscles is negatively affected (Amann, 2011). This is why you can still be under-recovered even if you are not exercising excessively. The culprit is probably too much lifestyle stress (i.e., partying too much, working too much, or not sleeping enough), and/or simply not enough rest. Recommend that the athlete dial in on lifestyle with a focus on achieving sufficient sleep. Check in on potential triggers and or behaviors that might disrupt optimal routines (i.e., calling a friend right at bedtime, waking up too late to eat breakfast, taking naps late in day etc).

SCENARIO 5:

Coach: “What are a couple scientifically driven, over-arching nutritional principles I can recommend to my athletes during over-reaching periods to help them further optimize the Recovery process?”

SOLUTION 5:

When athletes are training strenuously, Nutrition Scientists will suggest 16 calories of carbohydrate per pound of body weight each day and three-quarters of a gram per pound of body weight daily (Baty et al., 2007, Tipton et al., 2001). Nutrition Scientists will further recommend that the athlete bias intake so that a bulk of the protein is ingested two hours after a workout (Baty et al., 2007, Tipton et al., 2001). Remember, in terms of training, follow the 36- hour rule (see interesting fact below) between some of your quality sessions. See Section D for more information on “Recovery Management.”

INTERESTING FACT

If hormones are optimized, the muscle repair process appears to peak about 24hrs after a workout, at which point the muscle protein synthetic created is up by 109 per cent (Amann, 2013). By 36 hours post workout, the whole process is basically complete, and muscles are back to normal status (Amann, 2013).

Bottom line, every time the athlete breaks down muscle fibers, especially post weight session, the athlete will require approximately a 36 hour Recovery time before they can get in another high quality session.

KEY TAKE AWAY

An under-recovered athlete will have difficulty positively adapting to your training. When Recovery is optimized the athlete will have the potential to reach a new “ceiling” for performance capabilities.

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WHOOP

SECTION D

PERFORMANCE LIFESTYLE AND RECOVERY

"Potential" can only be achieved through a comprehensive understanding of the elements that promote or limit one's ability to perform.

There are three factors, when considered together, unveil the mystery behind any given level of performance (Fig. 1.); 1) Biological potential (innate talent), 2) Skills/expertise (information, know-how), and 3) Performance Lifestyle (your management of anything that is up for choice on a given day- nutrition, sleep, rest, relationship choices, how you treat others, how you treat yourself, mindset, etc).

The factors that include biological potential, and skills/expertise (factors 1 & 2), are generally well understood and/or accounted for by individuals who perform at a high level in any field. That is, high performing individuals are likely to possess exceptional physical and mental capabilities (talent) that are nurtured with high-end information through coaching and experience (skills, knowledge).

But as any athlete or coach is aware, it is at the margins where opportunity exists and outcomes are realized. When talent and skill are similar among competitors it is often the “lifestyle influences” that will determine outcomes in demanding circumstances.

WHOOP’s Platform helps the athlete mitigate some of the uncertainty associated with “Performance” by providing objective feedback around key “lifestyle” influences such as Sleep, Strain, and Recovery.

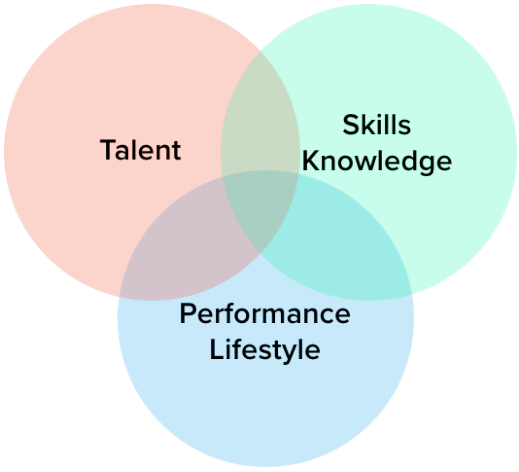


FIG. 1.

FACTORS OF
HUMAN PERFORMANCE

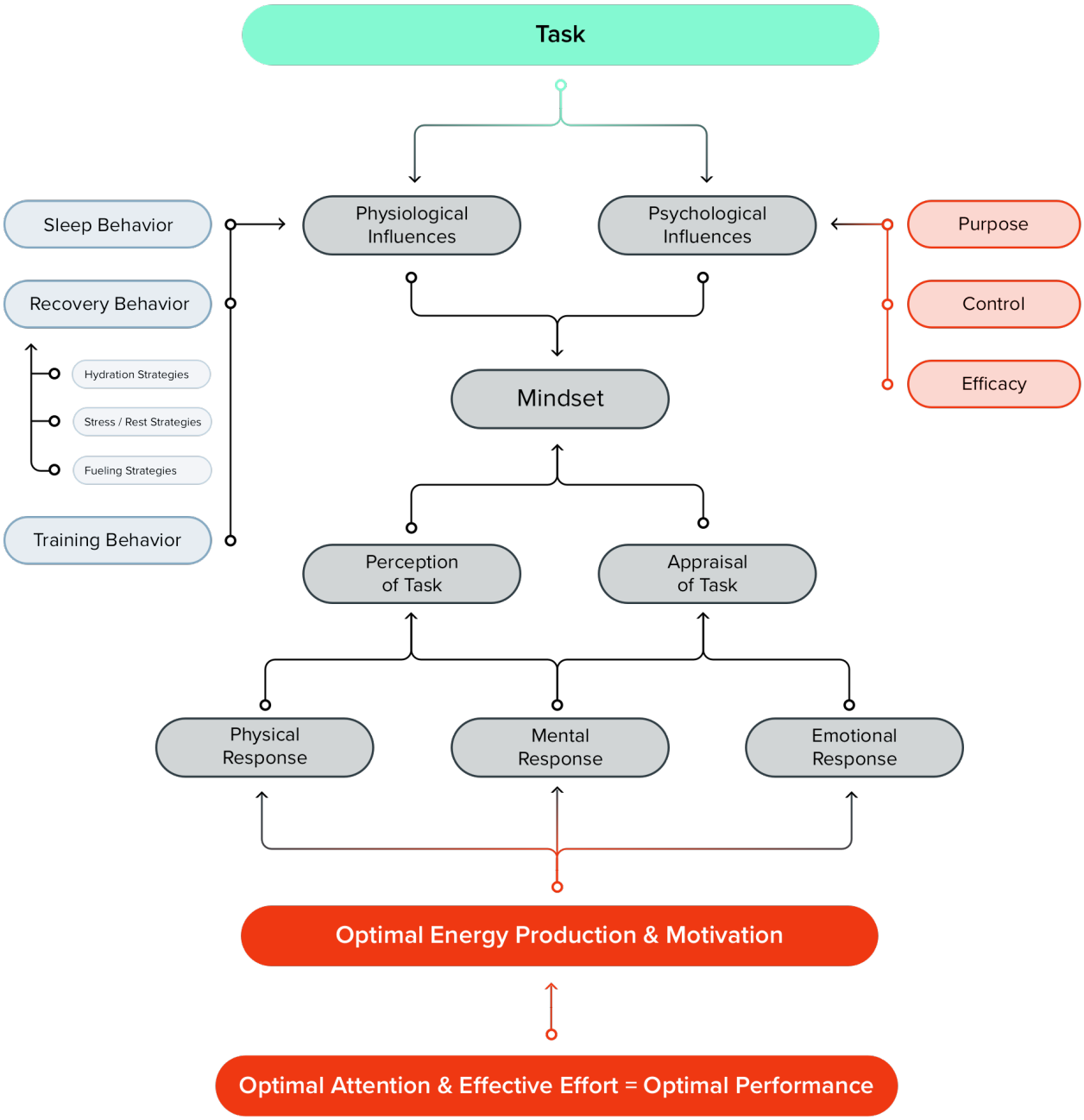
Talent, technical/tactical robustness are critical to performance however these factors can only be actualized if lifestyle/performance skills are appropriately applied.

PERFORMANCE MODEL

The model (Fig.2., Pg. 31.) provides a framework to help the athlete understand the physiological and psychological elements that need to be managed daily in order to “perform” consistently. Awareness of these influences helps bring clarity to what is important, and grounds upon which to base accurate, future Performance appraisals. The strategy to maximize potential, therefore, requires drilling into these influences, understanding their impact and creating an infrastructure/ routine that allows an individual to account for them in a conscious progression.

FIG. 2. PERFORMANCE MODEL

The model provides a framework to help you visualize how Influences (sleep, training, fueling, hydration, Recovery, purpose, control, and efficacy) affect the athlete mindset, their perception of task difficulty, appraisal of importance, and ultimately determine their capacity to apply mental, physical, and emotional effort.



WHAT WE KNOW:

- There are no “neutral” actions. One’s decisions either accumulate to help Performance and Recovery, or they add up to hurt Performance and Recovery.
- Activating an optimal mindset (positive in the present and a belief that improvement in the future is possible) for Performance is difficult when physiological and/or psychological factors (such as sleep and Recovery) are neglected and or mismanaged.
- When an athlete is unable to perform it is generally an issue of “can’t”, not an issue of “want.” The barrier in question will generally fall somewhere in the model illustrated in Fig. 2.
- Coaches and athletes frequently underestimate the impact unmanaged physiological “influences” have on performance effectiveness (Kellman, 2010).
- Understanding the characteristics and origins of stress can help the athlete identify a performance barrier or opportunity more quickly, and thus provide a platform for conscious action.
- The athlete’s level of fitness, general health, and how effectively they apply lifestyle/ Performance Skills (nutrition, fueling, Recovery, cognitive framing, etc.) will determine how quickly the athlete will Recover.

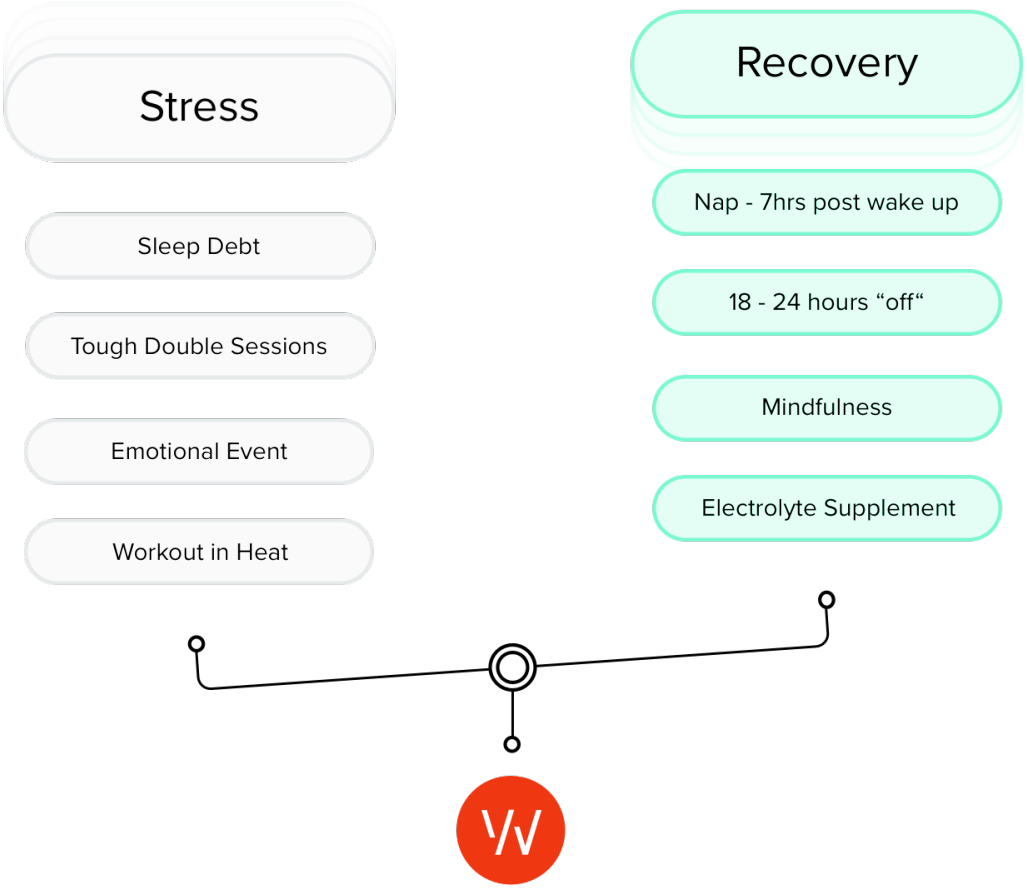
BALANCING “STRESS” AND RECOVERY

How well is the athlete responding to training, mental stress or other sources of stress? Who is ready to train and who needs rest? Why are the athletes responding to load function differently (same workout, same day)? How does environmental conditions influence Recovery?

These questions and issues demonstrate the multi-factorial nature of Recovery and the inherent intricacy of monitoring and measuring Recovery in an athlete. The data generated from the WHOOP system will help the athlete draw correlations between behaviors that promote good “stress” and behaviors that promote bad “stress”. Athletes, over time, learn to become effective managers of stress as they begin to understand how decisions and life events effect their physiology.

FIG. 3. STRESS AND RECOVERY

High performers measure the effect stress has on their life and consciously take steps to mitigate the negative impact.



RECOVERY AS A SKILL

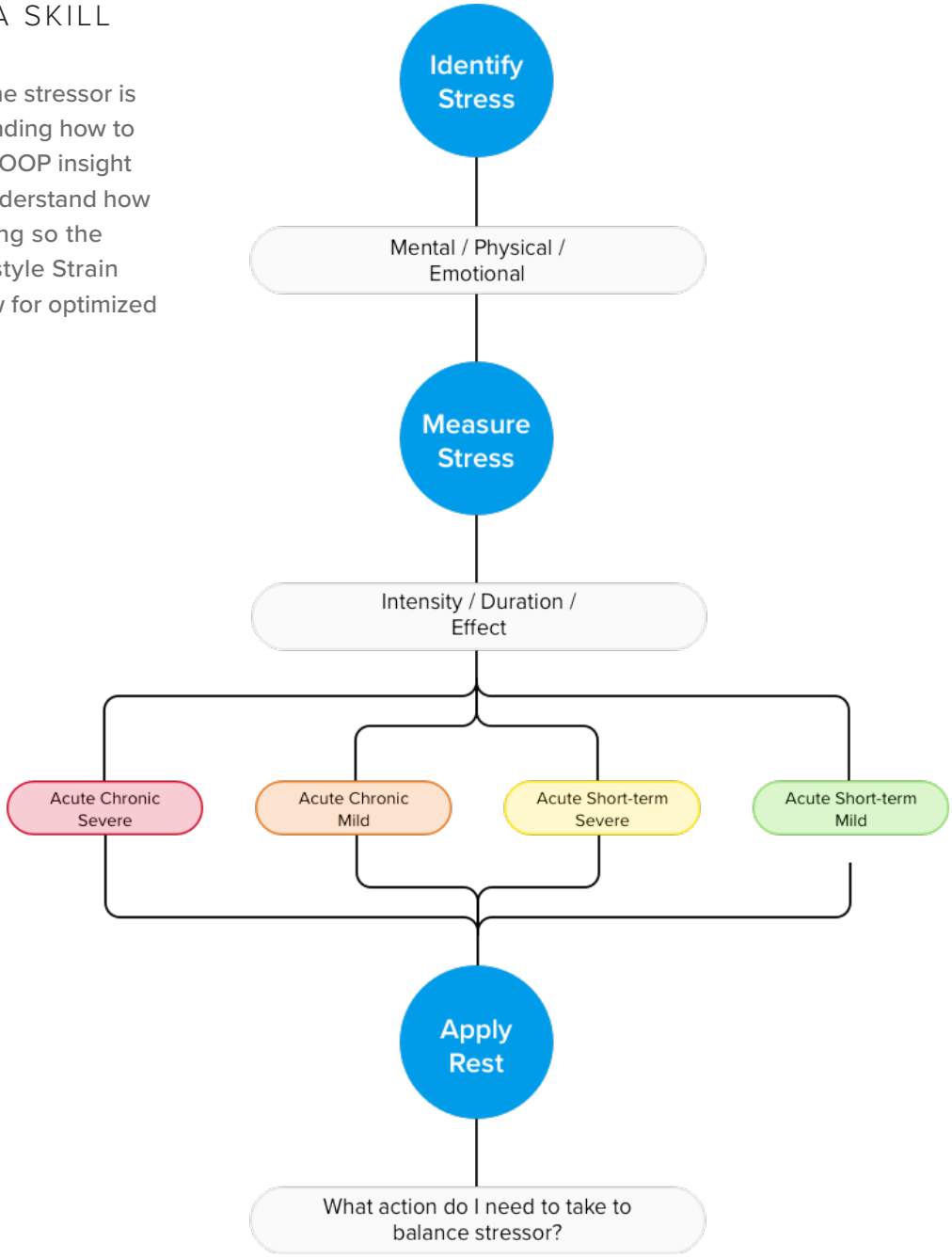
WHOOP evaluates the strains associated with non-workout activities, such as classroom presentations, errands, or even a difficult conversation with a roommate. This is the basis behind the WHOOP Day Strain, where every heartbeat counts towards an aggregated measure of the strain placed on your body throughout the day. It is one thing to be able to quantify the load from workouts; WHOOP takes this a step further and quantifies the impact of the events in your life outside of practice to provide 24/7 monitoring and feedback.

“Recovery” implies action. Encourage and empower the athletes to use the data generated from the Strain Score to better evaluate how lifestyle choices impact the intensity, duration, and effect of Strain. Then of course, the next step is to consciously apply Recovery to appropriately off-set Strain (Fig. 4.)

FIG. 4.

RECOVERY AS A SKILL

The ability to identify the stressor is a key step to understanding how to mitigate the effect. WHOOP insight can help the athlete understand how their body is responding so the athlete can make Lifestyle Strain decisions that will allow for optimized performance.



COACHING WITH WHOOP

Athlete

"It's a hard workout day and I got a red Recovery this morning. How is this going to effect training?"

"Low Recovery it is a strong indicator that the athlete's body is not primed to take on high Strain that day. As such, consider lightening the athlete's load and save the hard workout for a day your body is ready to capitalize on it."

Coach

"My Recovery isn't great (low yellow) even though the Strain yesterday was pretty low. This makes sense, though—my family has been really stressing me out lately. I know the workout is supposed to be hard today and my coach will probably think I'm good to go. But am I?"

"Let your athletes know that it is okay to let you know what's going on outside of practice. The WHOOP system is highly sensitive and picks up on factors you will not be able to see. Use WHOOP to help your athlete train smarter."

"I wake up feeling normal, but every day this week my Recovery has been getting worse (yellow to now red). I'm getting okay sleep so what's going on?"

"A major factor in the calculation WHOOP Recovery is HRV. If the athlete's HRV is stagnant or trending downward it is a warning sign that the athlete might be overtraining or getting sick. This is a good time to have a discussion with a team doctor or trainer to look into the athlete's health a bit further."

INTERESTING FACT

The body's immune system can be affected by unmanaged stress (i.e., inadequate stress to rest ratios), leading to illnesses such as cold, coughs, and flu (Block et al., 2009). Research has also linked inadequate rest to ailments including depression, weight gain, and memory loss (American Psychological Association, 2012).

KEY TAKE AWAY

With a deliberate approach to behavior achieved through accounting and managing the variables (internal or external) that influence performance, one can effectively determine the quality of one's effort and the ability to sustain long term, consistent outcomes.

An athlete can effectively manage performance on a day to day basis with a comprehensive understanding of the influences that determine a given level of performance (i.e. skills/ expertise, biological disposition & performance management).

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WHOOP

SECTION E

ATHLETE MONITORING BEST PRACTICES

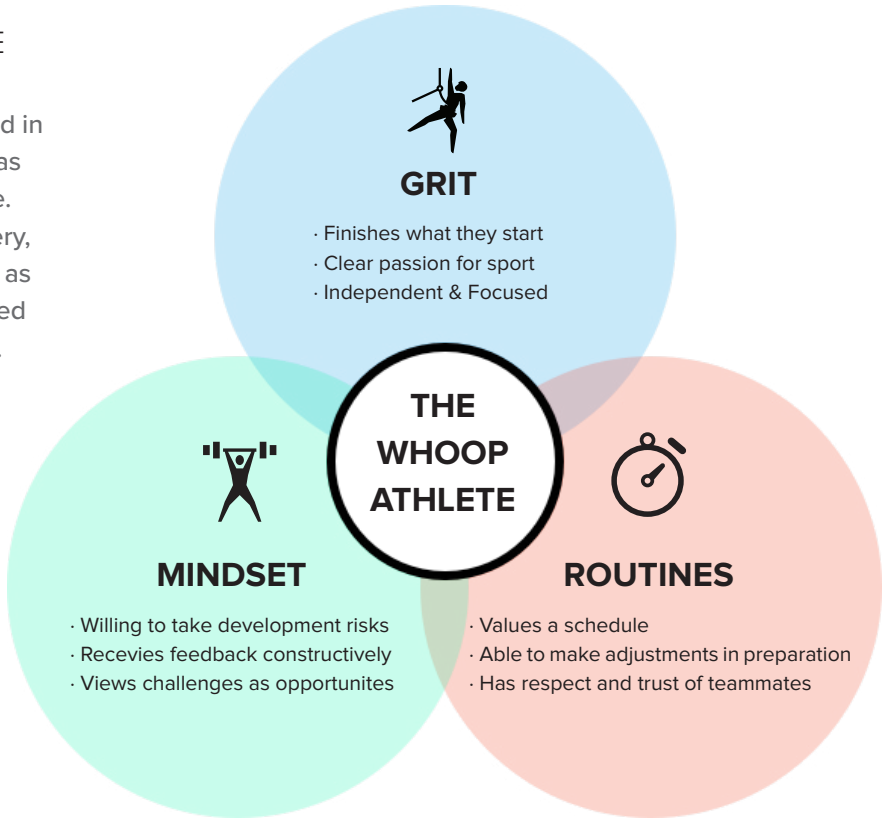
Successful “monitoring” requires collaboration between coach and athlete and a strong foundation of trust. At WHOOP, we view technology as a way to foster Performance, general health, and well-being.

- Be patient. WHOOP is a machine learning system, as such, it will take a bit of time to get to know their body.
- Look for trends and avoid assigning absolutes based on one data point.
- Give athlete time to develop effective routines around the use of the data.
- You must be sensitive to the individual psychology of the athlete. Some athletes will need time to get used to seeing a number as a measurement of readiness.

FIG. 1.

THE WHOOP ATHLETE

The WHOOP Athlete is interested in optimizing all areas of life and has a long-term view of performance. The athlete treats Sleep, Recovery, nutrition, hydration, and training as "skills" to be honed and leveraged within the sporting environment.



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THANK
YOU