

# NATIONAL COACHING SYMPOSIUM 2018



NEXT GENERATION COACHING: HOW ATHLETE  
DATA WILL ENHANCE YOUR COACHING

MIKE KUSCHNER - HEAD COACH

FRED STRAMMER - ATHLETE COORDINATOR



# S|P|T

## Sailing Performance Training

*“Enhancing Sailing Performance Through Fitness”*

# USOC'S ASSESSMENT OF U.S. SPORT

**IN THE LAST 5 YEARS, FEWER KIDS ARE ACTIVE THROUGH SPORTS, DUE IN PART TO EARLY, SINGLE-SPORT SPECIALIZATION\***

**EARLY SPECIALIZATION\* DOES MORE HARM THAN GOOD**



INCREASES RISK OF OVERUSE INJURIES IN DEVELOPING BODIES



CAUSES KIDS TO BURN OUT AND QUIT SPORTS ALTOGETHER



DECREASES OVERALL ATHLETIC DEVELOPMENT

United States Tennis Association & USOC

Early Sport Specialization: Intense training in one sport while excluding others during an athlete's early years of development

# EARLY SPECIALIZATION INHIBITS LONG-TERM PERFORMANCE

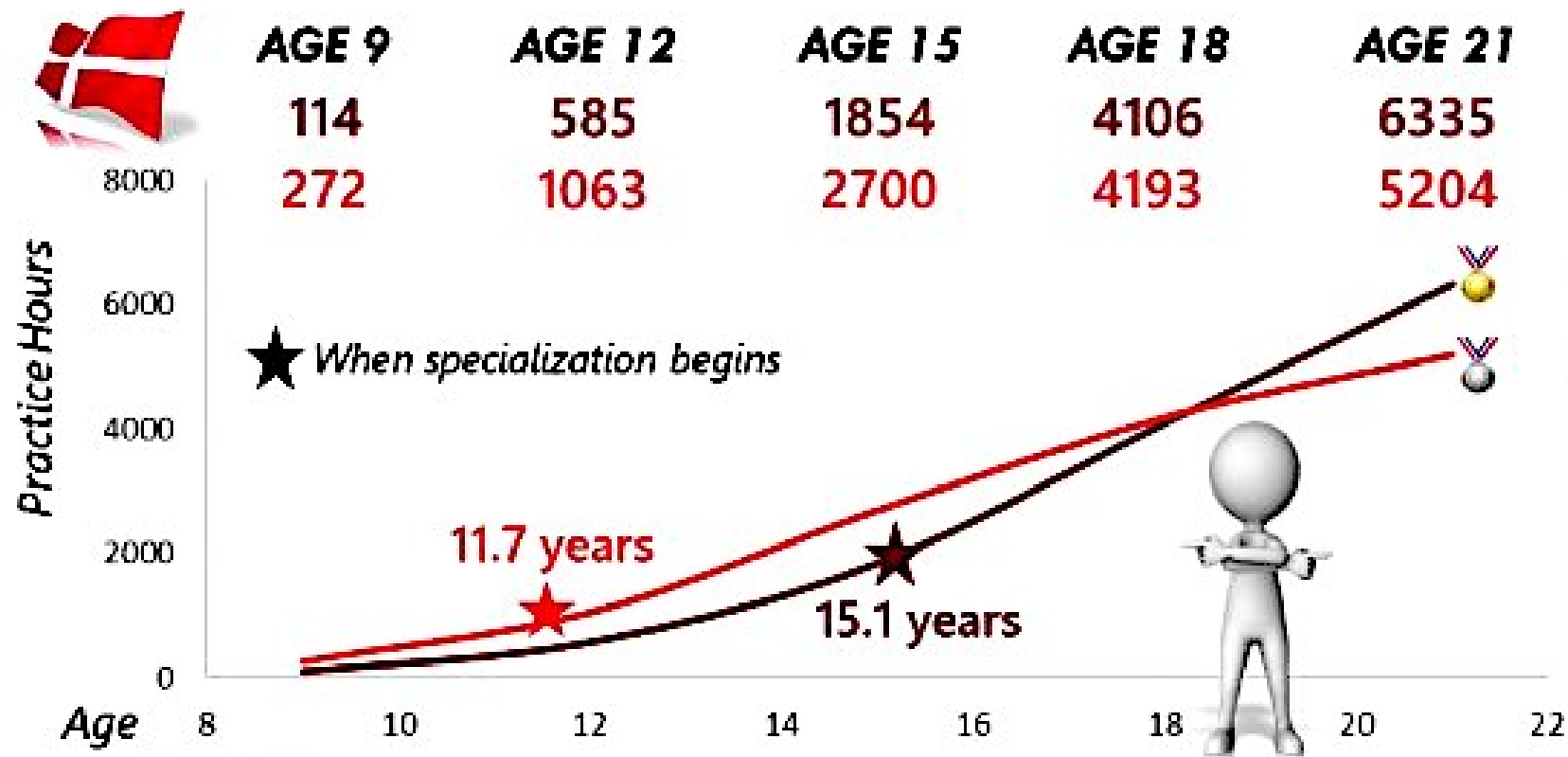
Moesch et al. (2011)

## WHEN ELITE ATHLETES SPECIALIZE IN SPORT

A look at 243 Danish high-caliber athletes



### ACCUMULATED SPORT-SPECIFIC PRACTICE HOURS



**ELITE**  
top 10 at a championship at the world level (e.g. World Cup, Olympics)

VS.

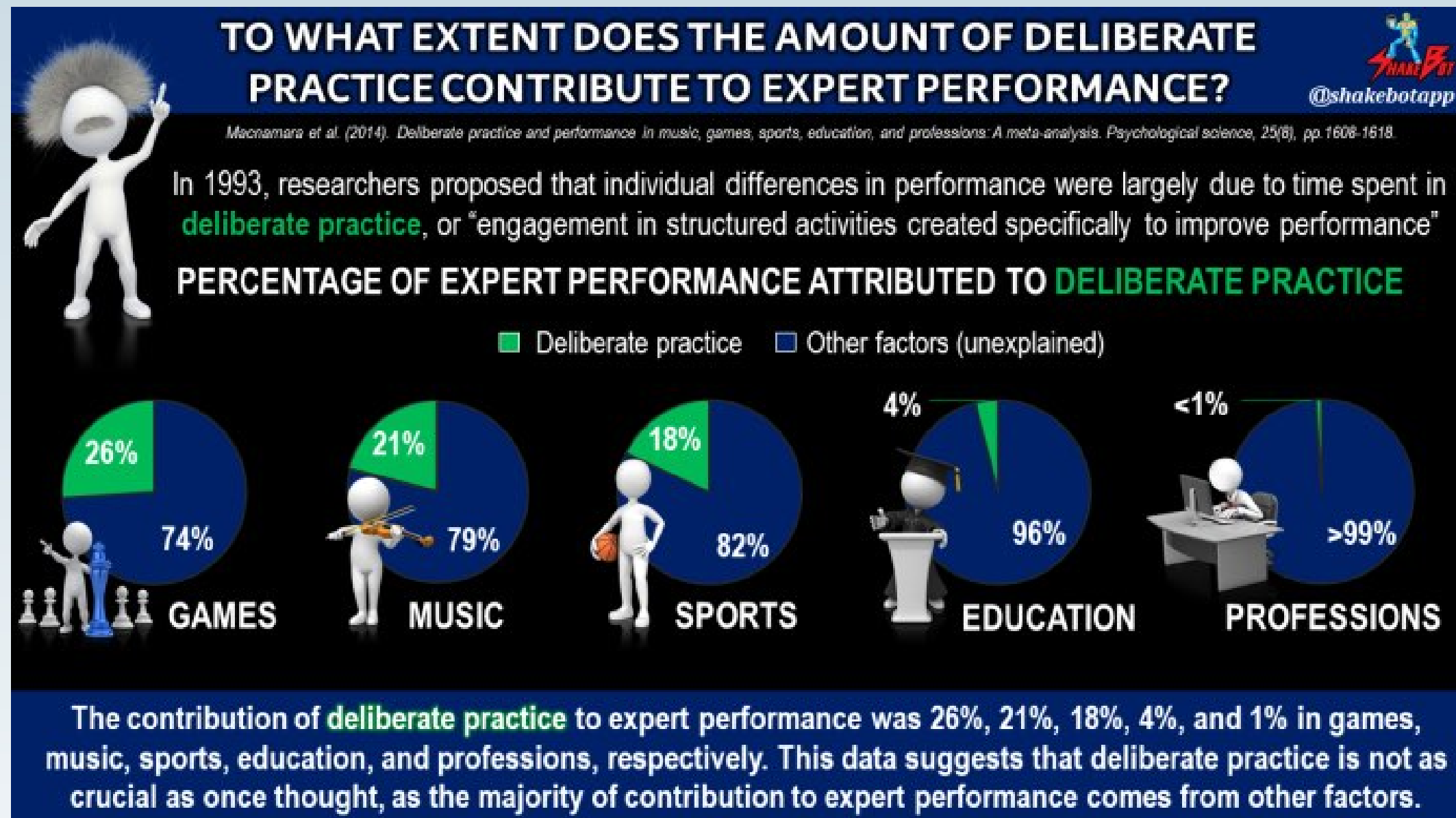
**NEAR-ELITE**  
winning a medal at a championship at the European level (e.g. European Championship) on a senior level

**Elite athletes** acquired significantly **less sport-specific practice hours before the age of 18** and **specialized later in adolescence**, compared with their **near-elite** counterparts

Moesch, Elbe, Hauge, Wikman, "Late Specialization: The Key To Success In Centimeters, Grams, Or Seconds (CGS) Sports," 2011



# TURNS OUT DIFFERENT TYPES OF PRACTICE MAKES PERFECT



Macnamara et al. (2014). "Deliberate Practice And Performance In Music, Games, Sports, Education, And Professions: A Meta-Analysis."

# PROBLEMS WITH EARLY SPECIALIZATION

EARLY SPECIALIZATION	MULTILATERAL PROGRAM
<ul style="list-style-type: none"><li>• Performance improvements were immediate</li></ul>	<ul style="list-style-type: none"><li>• Performance improvements were continuous</li></ul>
<ul style="list-style-type: none"><li>• Best performances between 15-16 because of early adaptation</li></ul>	<ul style="list-style-type: none"><li>• Best performances over 18 due to physical and mental maturation</li></ul>
<ul style="list-style-type: none"><li>• Performance inconsistencies within competitions</li></ul>	<ul style="list-style-type: none"><li>• Performance consistencies within competitions</li></ul>
<ul style="list-style-type: none"><li>• By 18, many athletes quit or “burnout”</li></ul>	<ul style="list-style-type: none"><li>• After 18, many athletes were starting to “come into their own”</li></ul>
<ul style="list-style-type: none"><li>• Forced adaptation accounted for a high rate of injuries</li></ul>	<ul style="list-style-type: none"><li>• Gradual adaptation accounted for a low rate of injuries</li></ul>

T.o. Bompa, “Total Training For Young Children,” 2000

# EARLY SPECIALIZATION IN SAILING

- ⊗ One-sided, sport-specific preparation
  - Athlete focused on one class and not developing skills to potentially sail any class
- ⊗ Lack of physical literacy, poor basic movements, and fundamental sport skills
  - Athletes reach college/Olympic level not mentally and physically trained for rigorous training schedule
- Overuse injuries
  - ⊗ ▸ Athletes develop injuries early, which persist throughout career
- Early burnout
  - ⊗ ▸ Misguidance on long term athlete development plan
- Early retirement from training and competition
  - ⊗ ▸ Impediments/injuries lead to frustration and dissatisfied experience



# WHAT DOES ALL THIS MEAN?

Early adolescence is an important developmental period

- Avoid early specialization by developing the *athlete* AND the *sailor*

The athlete's long-term success is influenced by experiences during early athletic development

- Your athletes may have been exposed to early specialization
- Recognize potential signs of early specialization and restructure that athlete's plan

Different types of practice makes perfect

- Evaluate the athlete's development in sport and non-sport specific skills

Knowing when the athlete should specialize is important



# SPT'S MISSION: TO BUILD AN ATHLETE DEVELOPMENT PATHWAY

## SPT's Mission Statement

*“To inspire, empower, and enable sailing athletes to reach their full potential”*

**Inspire** the athlete to love the sport and transfer that love to the next generation

**Empower** the athlete to create his/her own avenue to fulfill his/her athletic potential

**Enable** the athlete to create excellence and accountability in his/her career

# PROBLEMS WITH NO ATHLETE DEVELOPMENT PATHWAY

❌ Sailors are not prepared for the demands of an athletic career

- Decreases/limits professional opportunity and appeal
- Frustrating for athlete and coach

❌ Many athletes seek physical training from conventional pathways (i.e. group classes, CrossFit), leading to physical training that may *compete* and/or doesn't *complement* on-water training.

❌ Currently, athletes reach the elite level but:

- Are already too far behind in Athletic Development
- Have high risk of injury
- Are overwhelmed with lack of preparation
- Have poor experiences that lead to early burnout from the sport all together



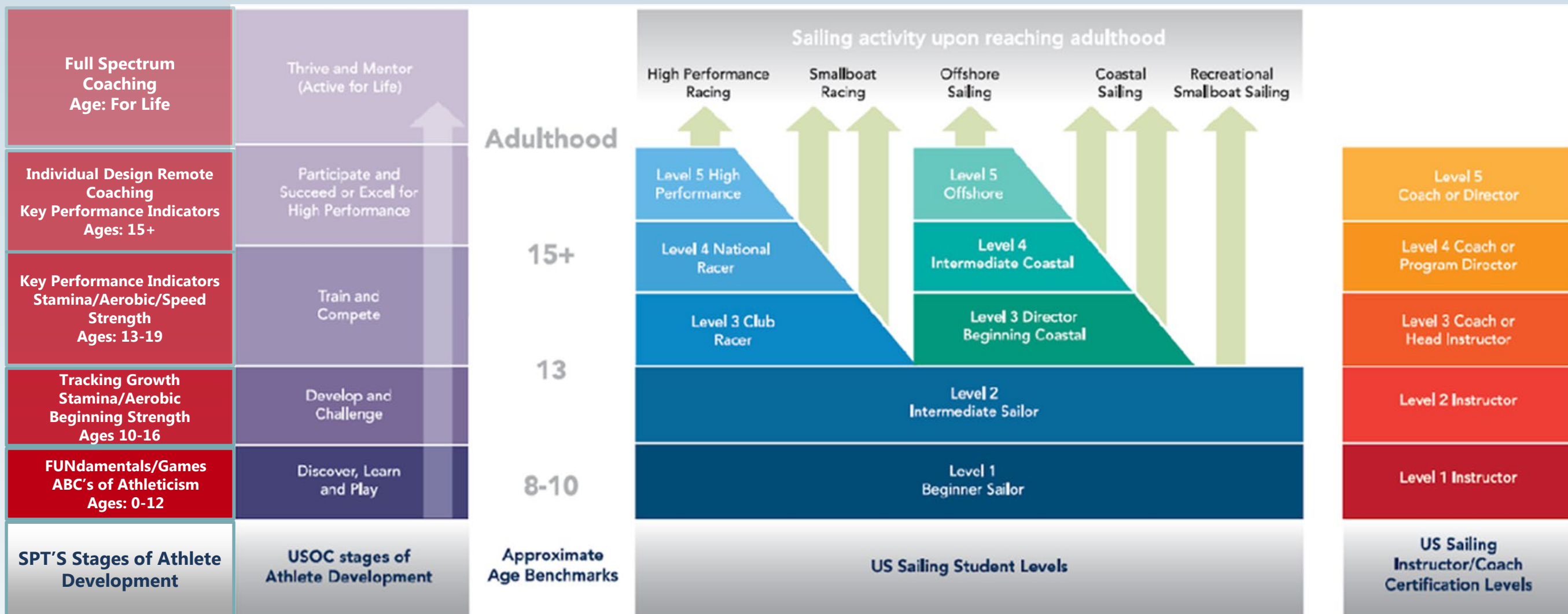
# USOC'S APPROACH

## 5 STAGES TO A BETTER SPORT EXPERIENCE

The American Development Model is meant to explain an athlete's advancement through a pathway supporting a healthy sport experience based on their physical, mental and emotional level and potential for growth.



# COMPLEMENTARY PATHWAYS





# BRIEF OVERVIEW SPT'S PATHWAY

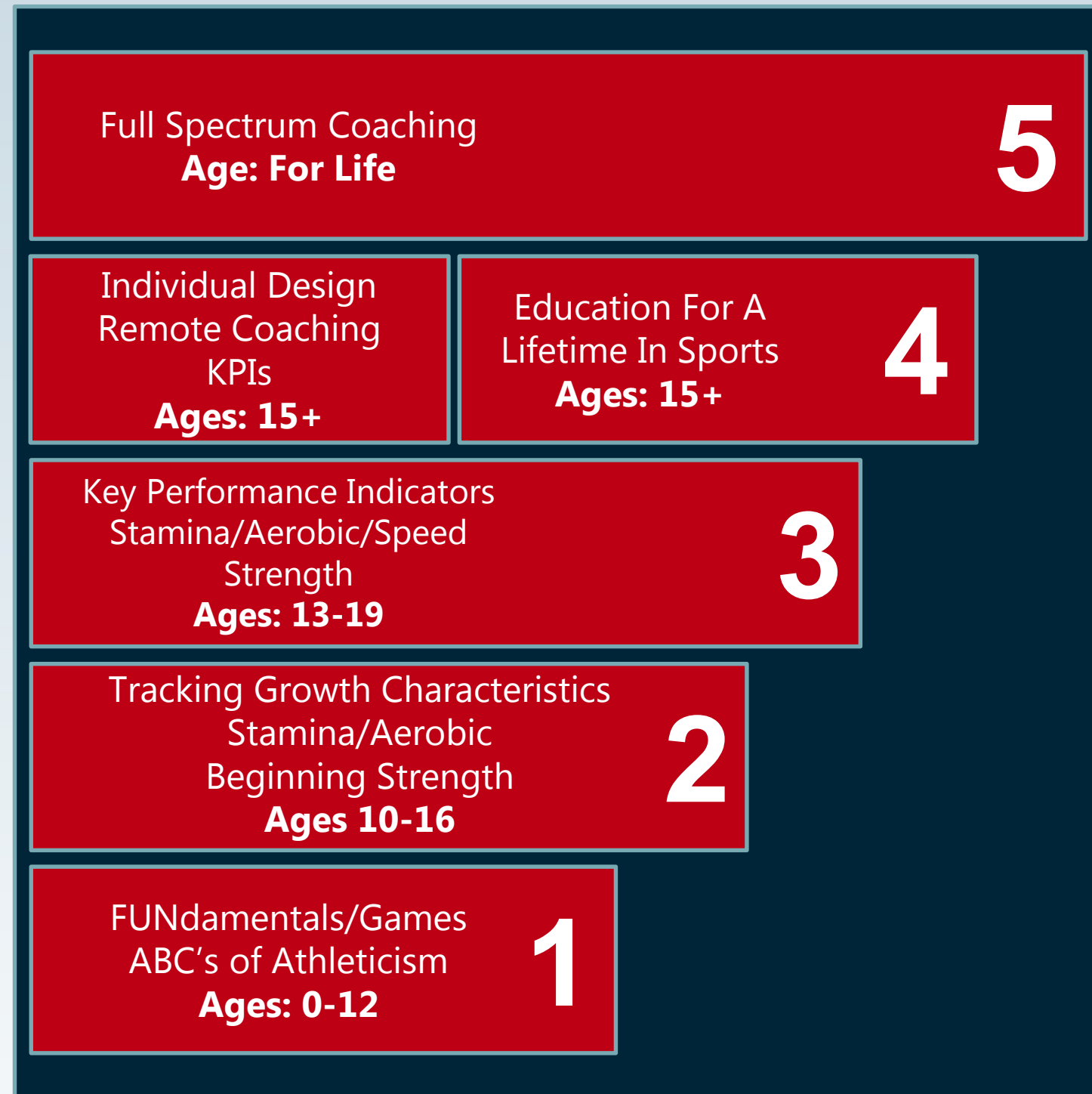
**Refinement** for continued growth

**Validation** of process

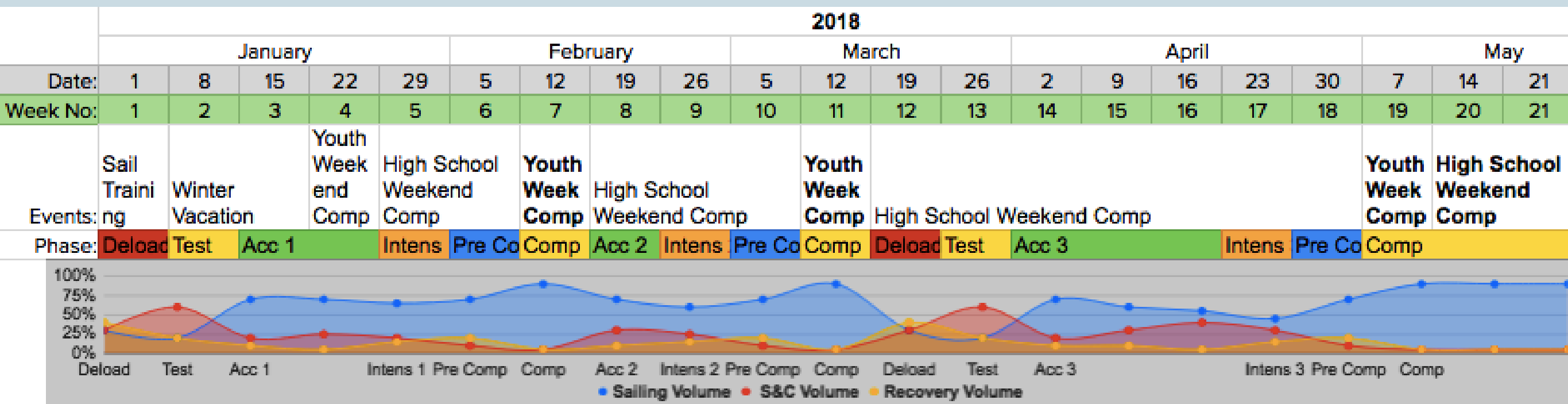
**Accountability** throughout development

**Define** the pathway

**Educate** and create awareness



# HIGH PERFORMANCE PLAN



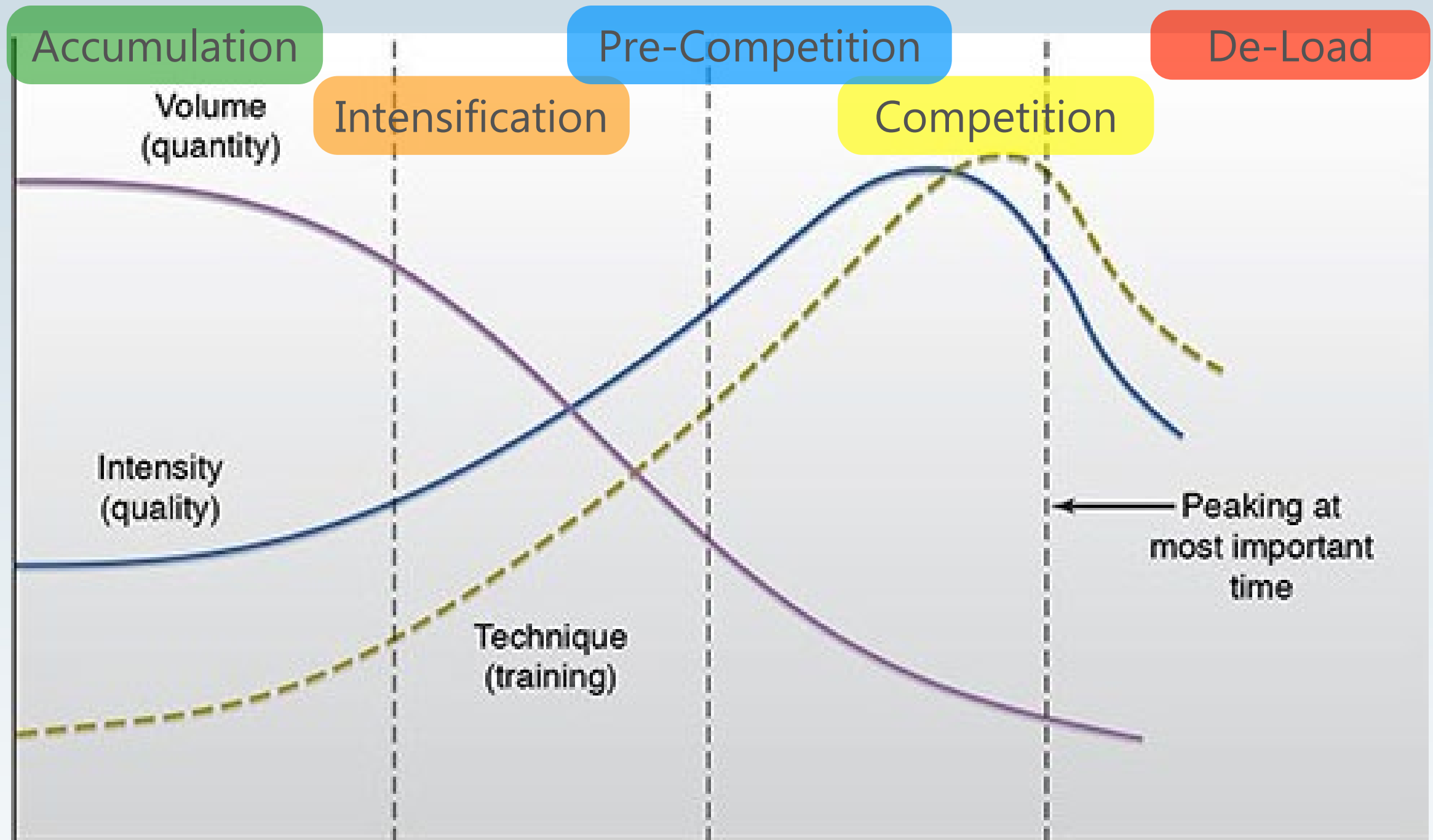
## Steps To Create A High Performance Plan

1. Develop Athlete Long-Term Goals (1-8 years)
2. Layout the Sailing Schedule, Sub Goal Competitions, Training Camps
3. Assess Athlete's Current Performance (sailing, physical, nutrition, psychological)
4. Periodize Phases of Training (Complementary Training Volume)
5. Validate & Refine



# PERIODIZATION BLOCKS

BUILDING PLANS WITH INTENTION



# ACCUMULATION PHASE

HIGH SUSTAINABLE TRAINING LOAD

## Accumulation

Volume  
(quantity)

### Strength and Conditioning Priorities

- Higher volume | Lower intensity training

### Sailing Priorities

- >3+ hour sailing sessions
- Boat handling & speed tuning focus
- Medium length & intensity races
- Longer resting time between drills and maneuvers

Intensity  
(quality)

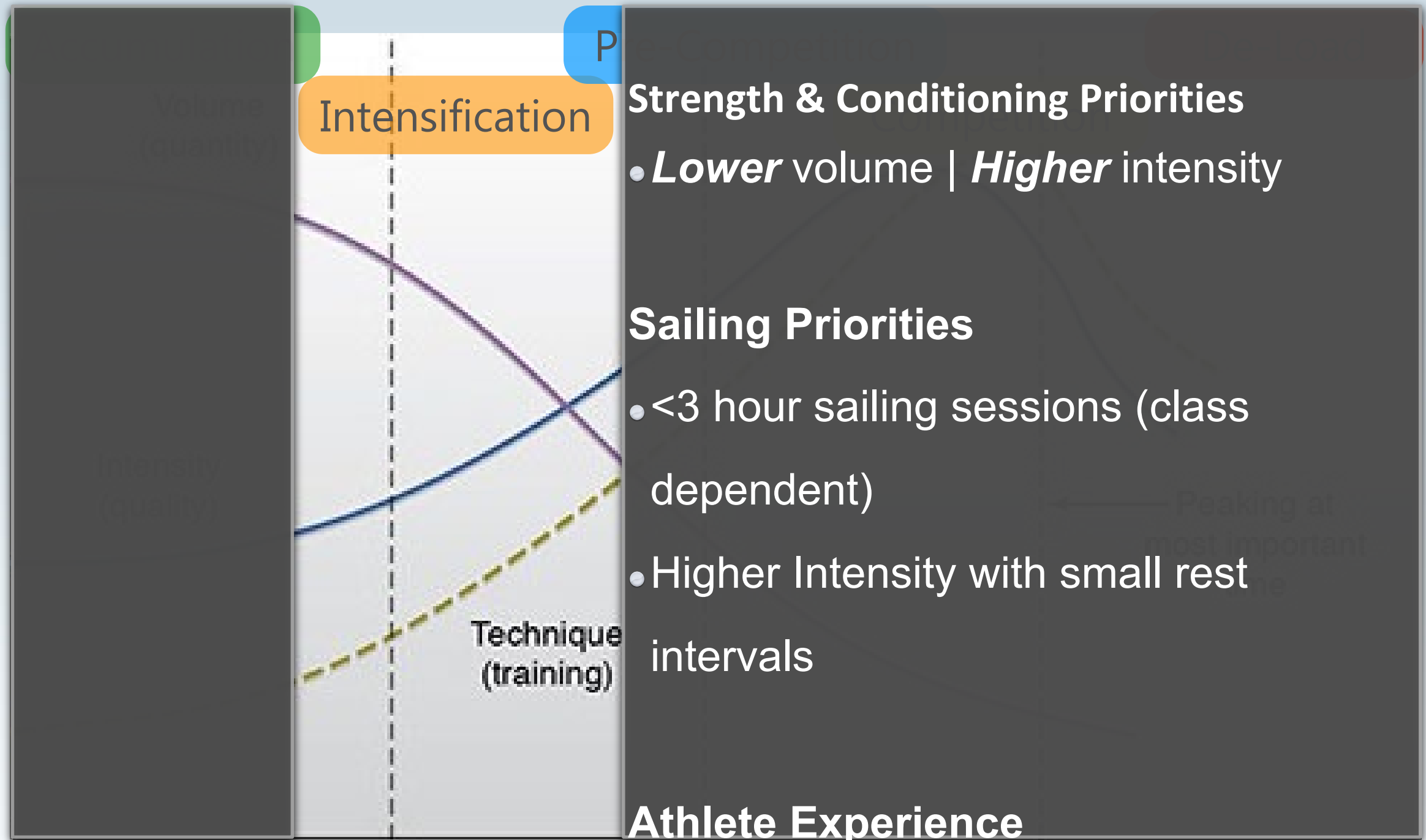
### Athlete Experience

- Want: “Difficult but sustainable”



# INTENSIFICATION PHASE

LOWER VOLUME AT SUB-MAX EFFORTS



- Want: “Feeling strong, recovering between sets”

# PRE-COMPETITION

## PRIMING COMPETITIVE SKILL

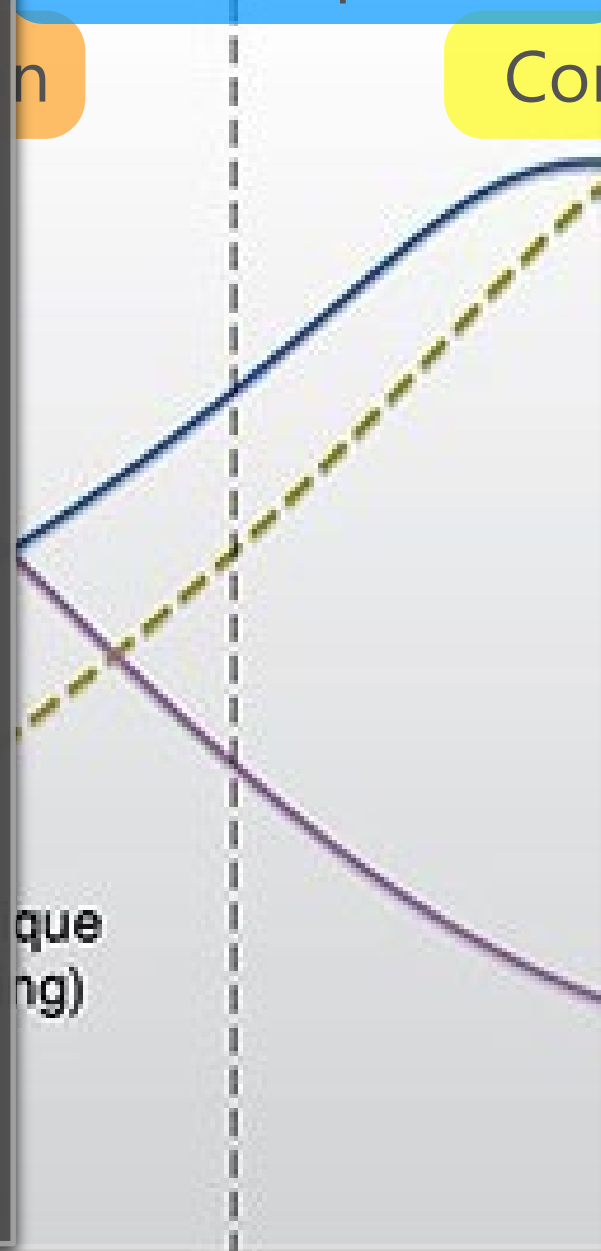
### Strength & Conditioning Priorities

- *Even Lower* Volume
- *Increasing* Intensity
- *Preparation*
- *Confidence*

### Sailing Priorities

- <3 hour sailing sessions
  - Moderate intensity
- decreasing significantly

### Pre-Competition



### Athlete Experience

- Want: “I’m feeling confident”
- Don’t Want: “I’m tired/sick/injured”

throughout camp

- Increased skill level --



# COMPETITION PHASE

## SKILL EXECUTION

### Strength & Conditioning Priorities

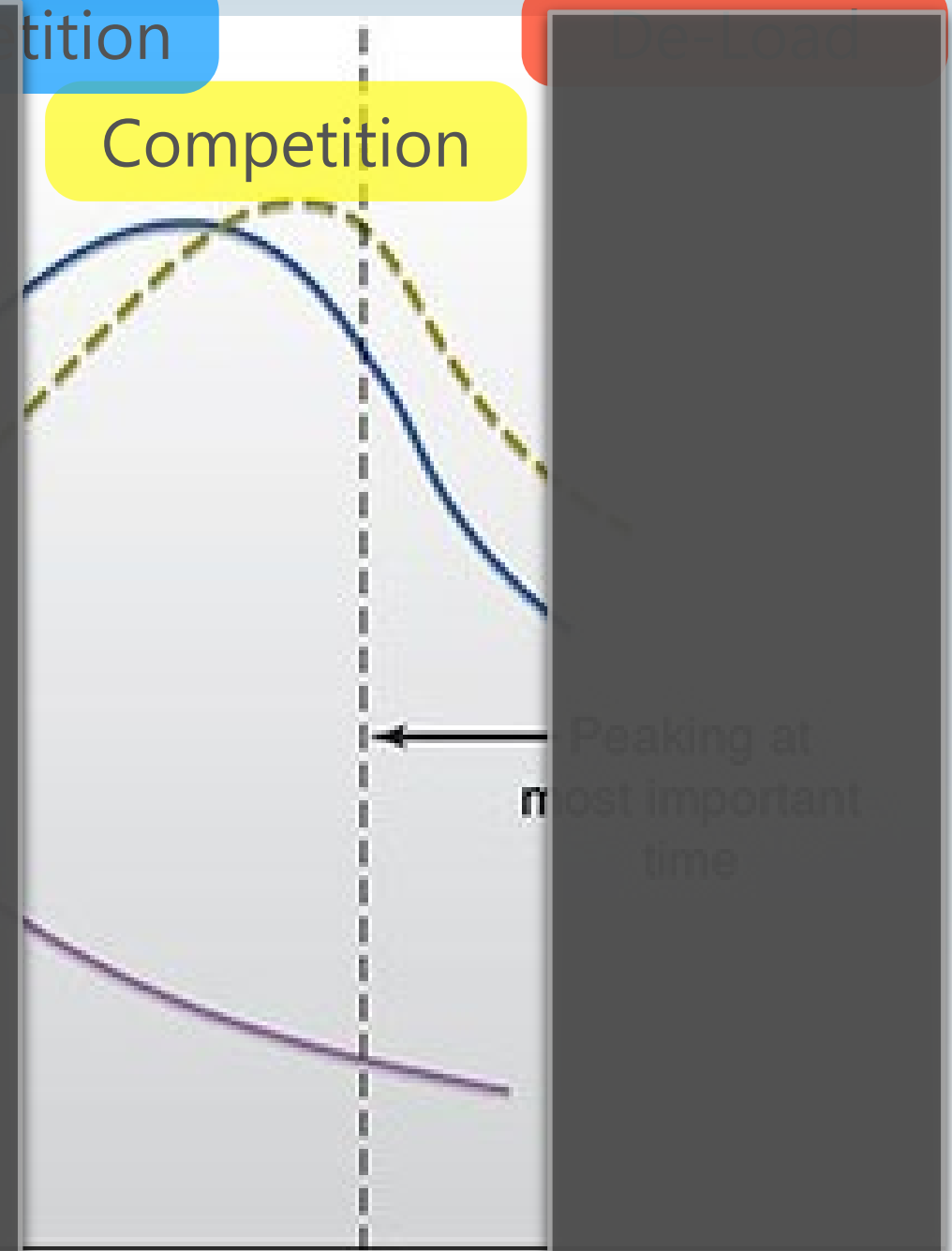
- *Physical Testing Vs. Sailing Comp*
  - *Priming*
  - *Recovery*

### Sailing Priorities

- Pre-Race routine
- Execution of learned sailing skills

### Athlete Experience

- Want: “I’m focused/ready”
- Don’t Want: “Just can’t get dialed



# DE-LOAD PHASE

## RECOVERY

### Strength & Conditioning Priorities

- *Rest | Recovery*
- *Easy Aerobic (30-90 min)*

### Sailing Priorities

- Complete days off
- Light sailing sessions
- Sail other types of boats
- Debrief last cycle, plan for next

De-Load

on

← Peaking at  
most important  
time

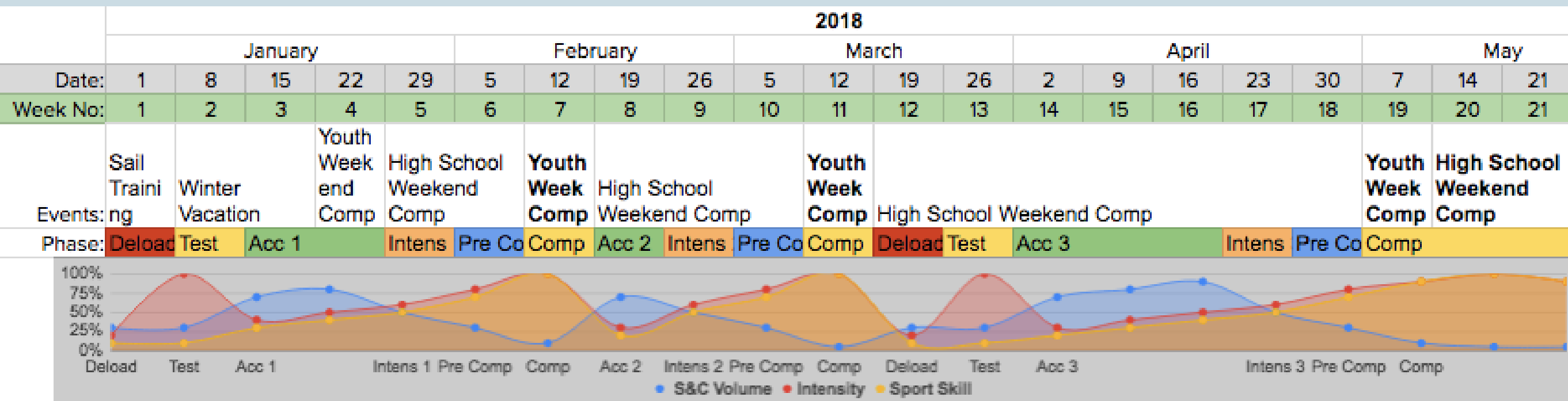
### Athlete Experience

- Want: “Feeling Recovered”



# HIGH PERFORMANCE PLAN

## ODP SAILOR

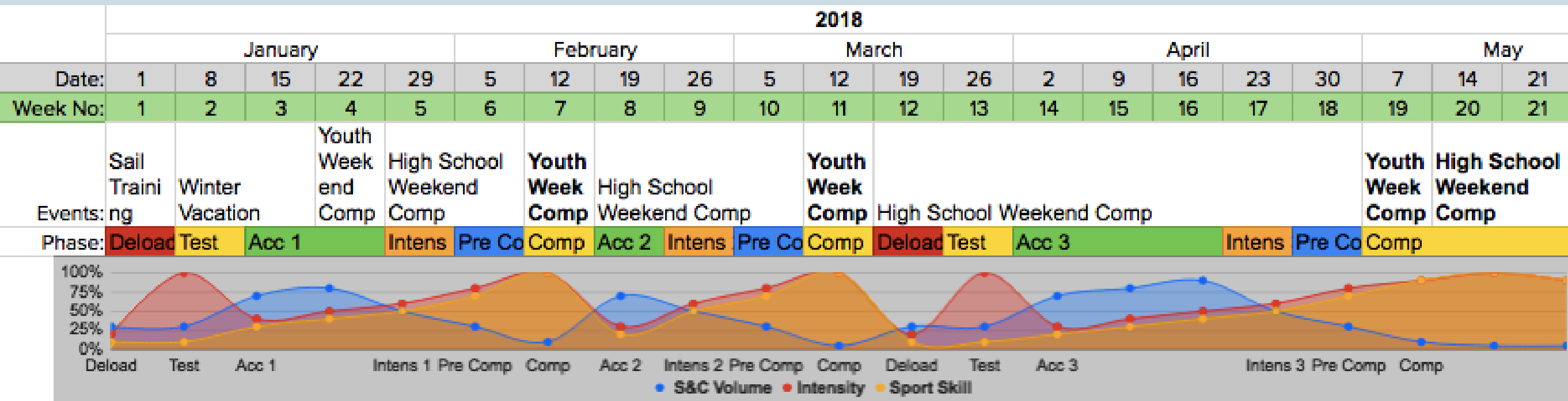


## Periodization of the Long-Term Plan

1. Identify the Competition or Testing Period (Day Length, Peak Event, Training Event?)
2. Identify Number of Pre Competition Days Needed
3. Identify Number of Intensification Days (Level of S&C vs Sailing Volume/Intensity/Sport Skill)
4. Identify Number of Accumulation Days (Level of S&C vs Sailing Volume/Intensity/Sport Skill)
5. Identify Number of De-Load Days (Based on Microcycle/Competition Workload)

# PERIODIZATION

## COMMON MISTAKES



### 1. Doing too much too soon

- Increasing demands too rapidly for optimal adaptation
- Maintain an overall training program that is too high

### 2. Inappropriate complexity for phase of training

### 3. Inappropriate competition goal setting based on athlete's current development

### 4. Attempting to return athletes to full training too quickly after injury or illness

### 5. Neglect to build-in specific, planned recovery activities to offset training demands

- Don't assume the athletes will recover!



# OVERTRAINING

## SYMPTOMS OF OVERTRAINING

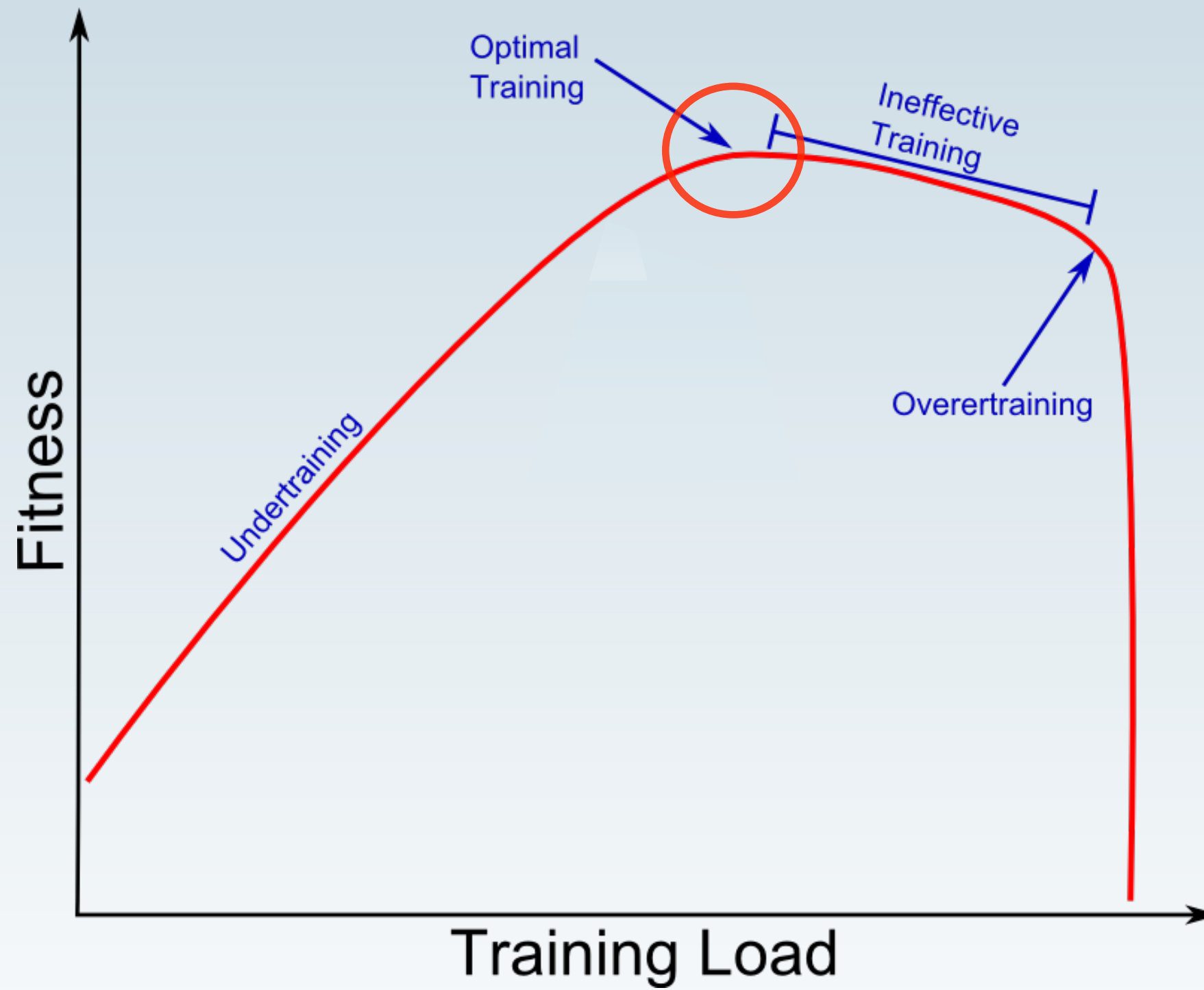
**Table 4.1 Physical and Psychological Symptoms of Overtraining**

Physical	Psychological
Elevated heart rate	Loss of self-confidence
Weight loss	Drowsiness and apathy
Muscle pain or soreness	Irritability
Elevated resting blood pressure	Emotional/motivational changes
Gastrointestinal disturbance	Sadness
Delayed recovery from exertion	Anxiety
Loss or decrease in appetite	Anger/hostility
Severe fatigue	Confusion
Overuse injuries	Concentration difficulties
Disturbed sleep patterns	Boredom
Immune system deficits	

Shane Murphy. "The Sports Psychology Handbook." 2004



# EFFECTIVE TRAINING



# TOOLS TO MEASURE

## **SUBJECTIVE DATA SOURCES:**

Rate of Perceived Exertion (RPE)

- 1-10 Difficulty

Athlete Subjective Scores

- Overall Health
- Stress
- Mood
- Muscle Fatigue
- Muscle Soreness
- “Stoke”

## **OBJECTIVE DATA SOURCES:**

Measuring Workload

- Volume (Reps, Load, Aerobic Minutes)
- Sailing Volume (Workload from Avg. Windspeed, Hours Sailed, RPE)

Monitoring Acute To Chronic Workload Ratios (ACWR)

Heart Rate Variability

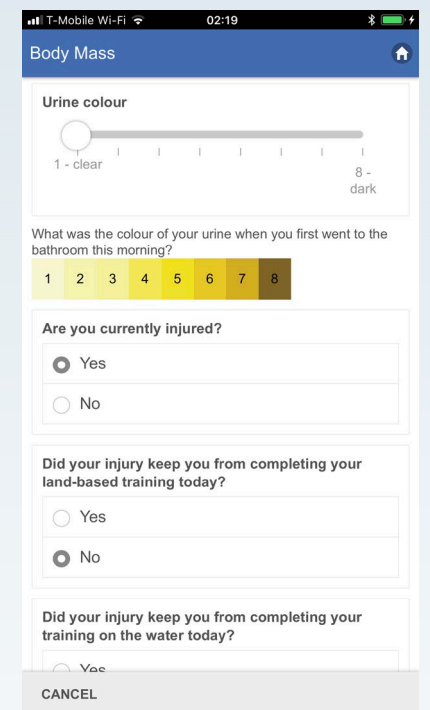
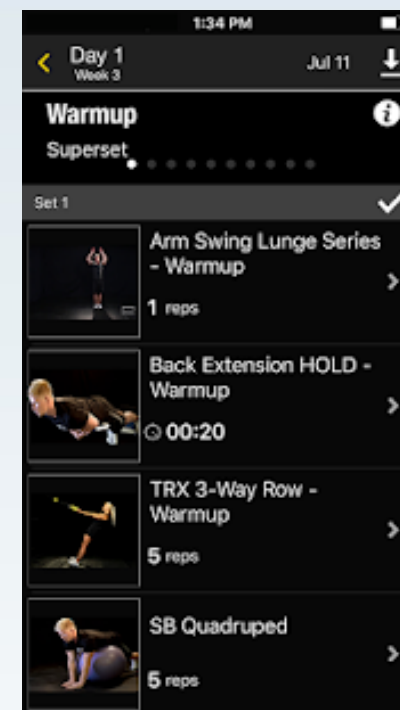
- Psychological and physiological

Resting Heart Rate

# PERFORMANCE WORKFLOWS

S|P|T  
Sailing Performance Training

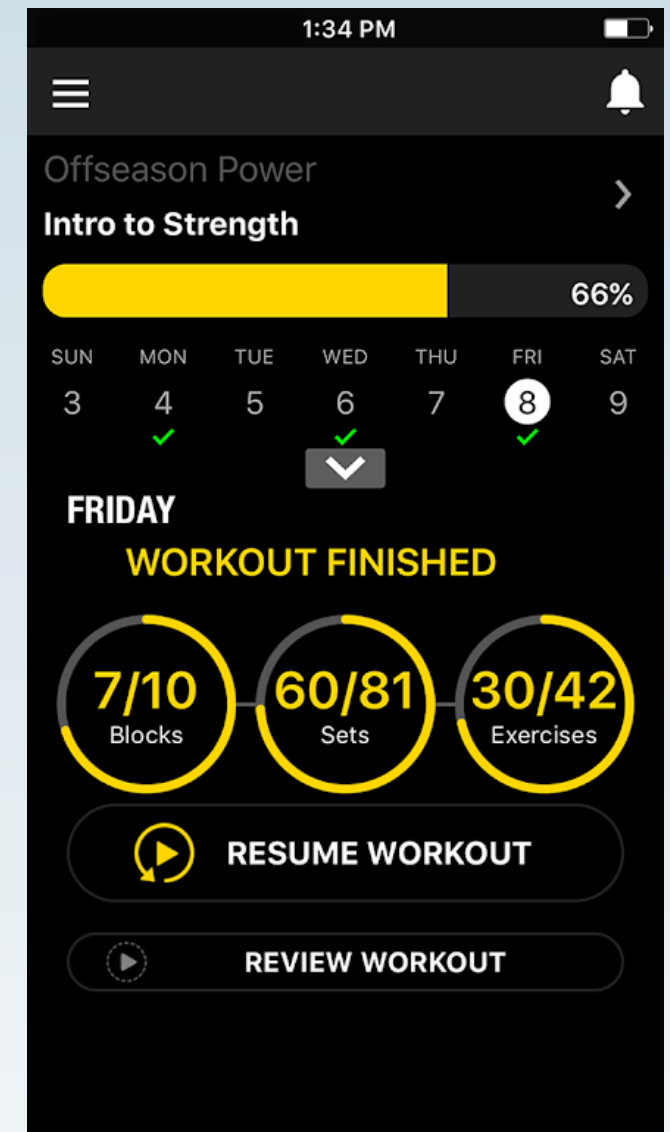
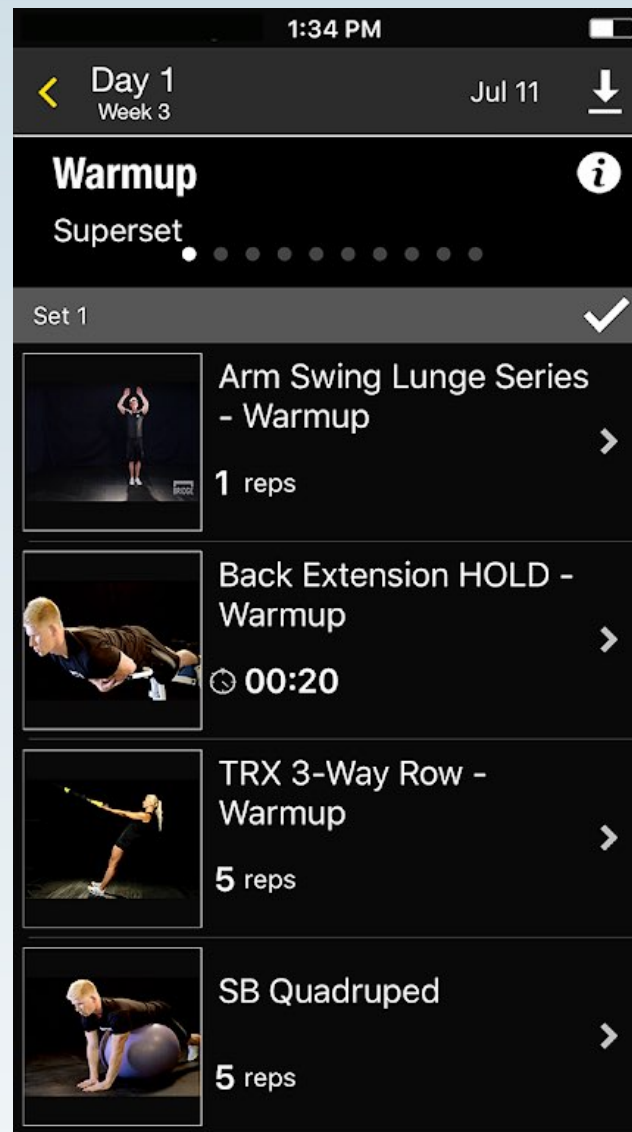
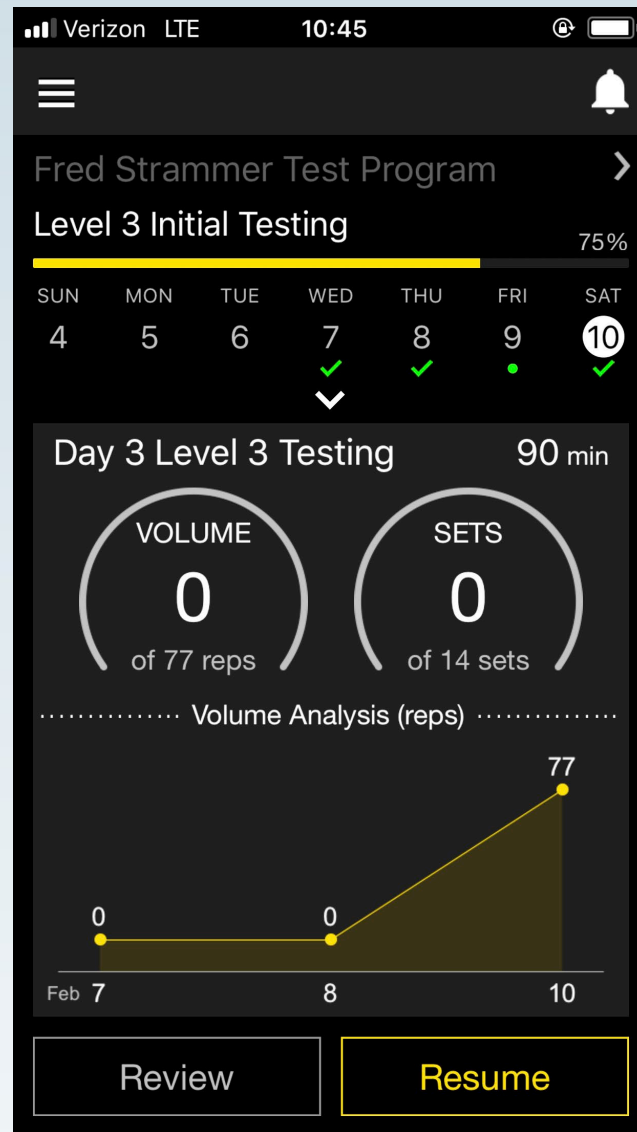
POWERED BY  
**smartabase**





# SPT WORKFLOW

## IS THE ATHLETE TRAINING EFFECTIVELY?



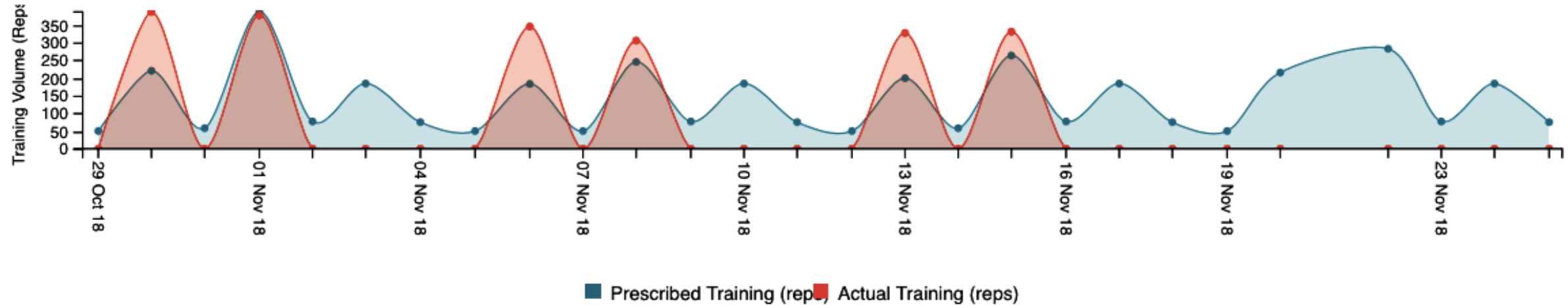
Athlete completes customized workouts programmed in BridgeTracker (~30-90mins)

# SPT WORKFLOW

## IS THE ATHLETE TRAINING EFFECTIVELY?

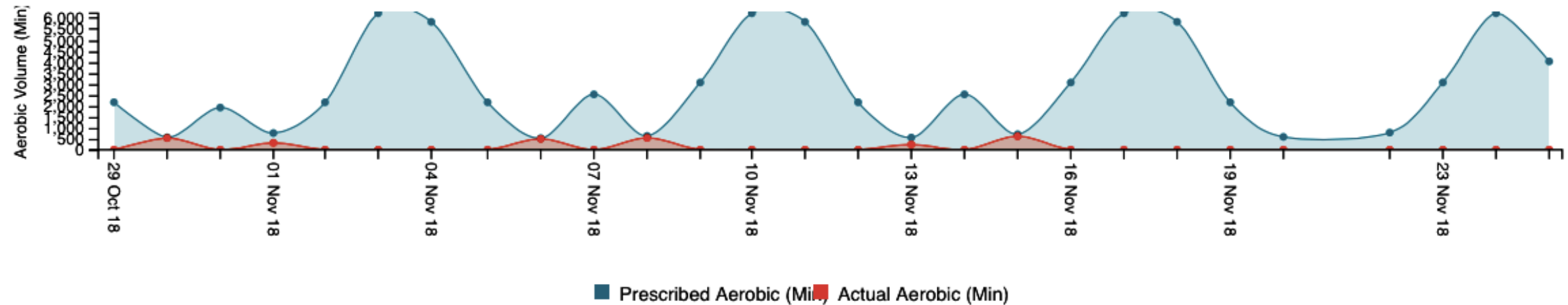
### Prescribed Vs Actual Training Volume

This interactive graph will display your prescribed training volume versus the actual training volume you completed (in reps).



### Prescribed Vs Actual Aerobic Volume

This interactive graph displays the prescribed versus actual aerobic volume (in minutes) completed during your aerobic training.





# SPT WORKFLOW

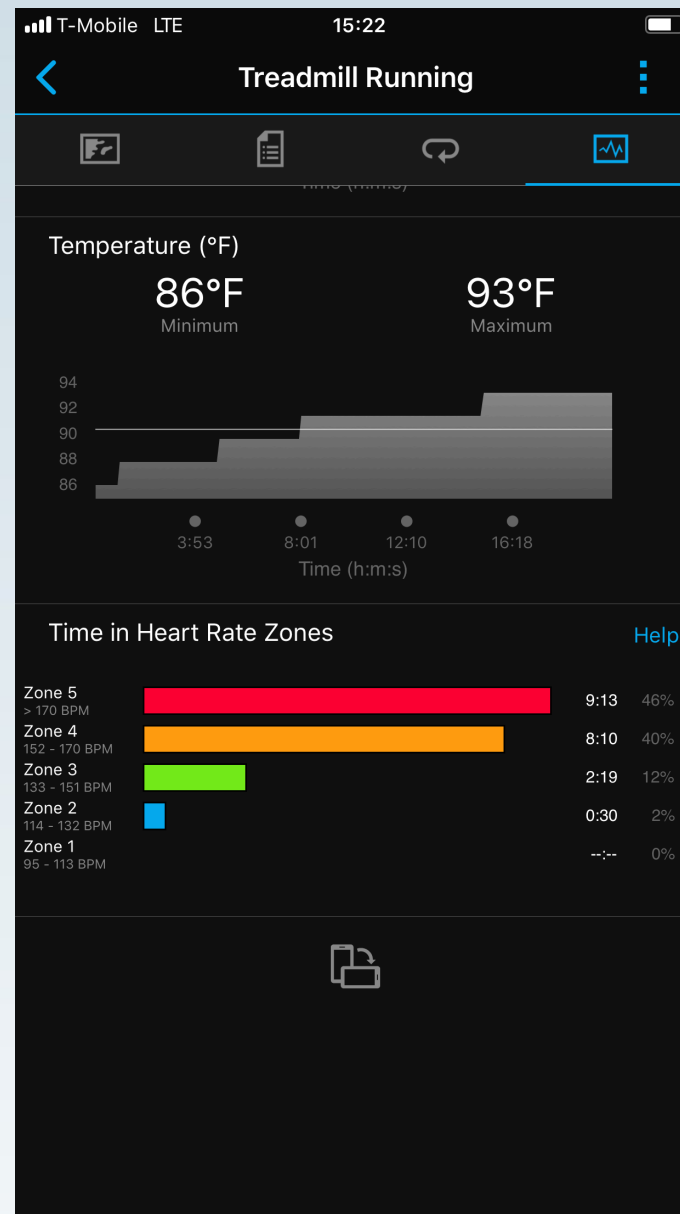
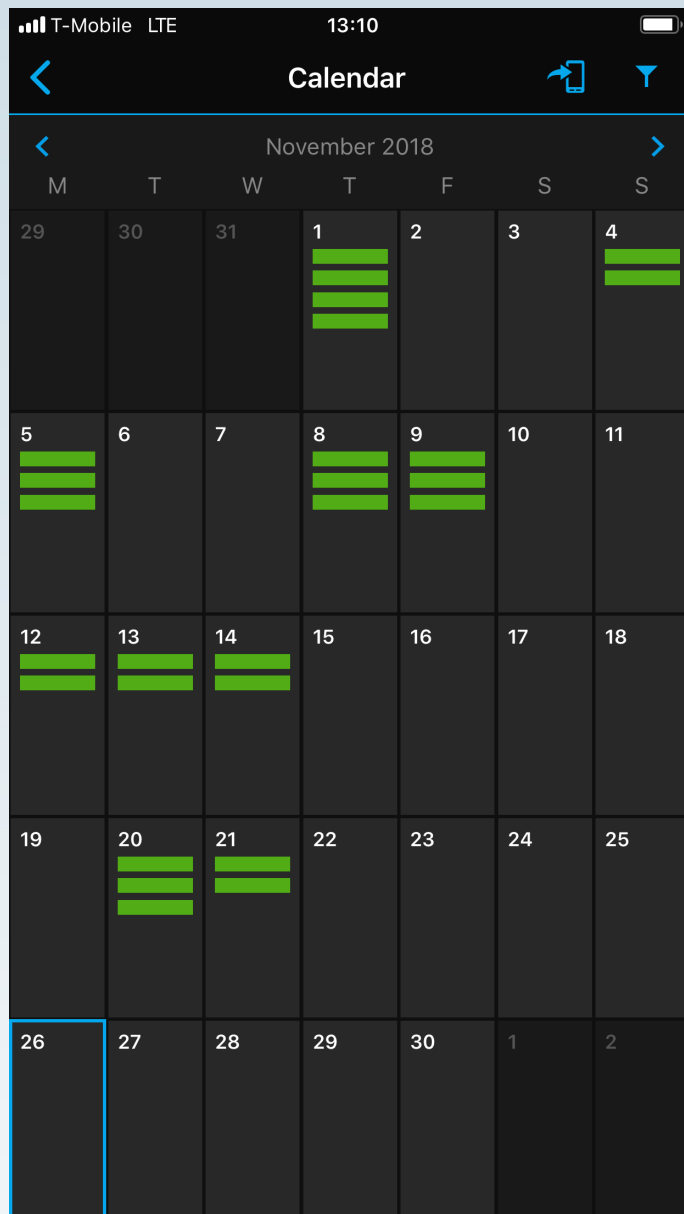
## IS THE ATHLETE TRAINING EFFECTIVELY?





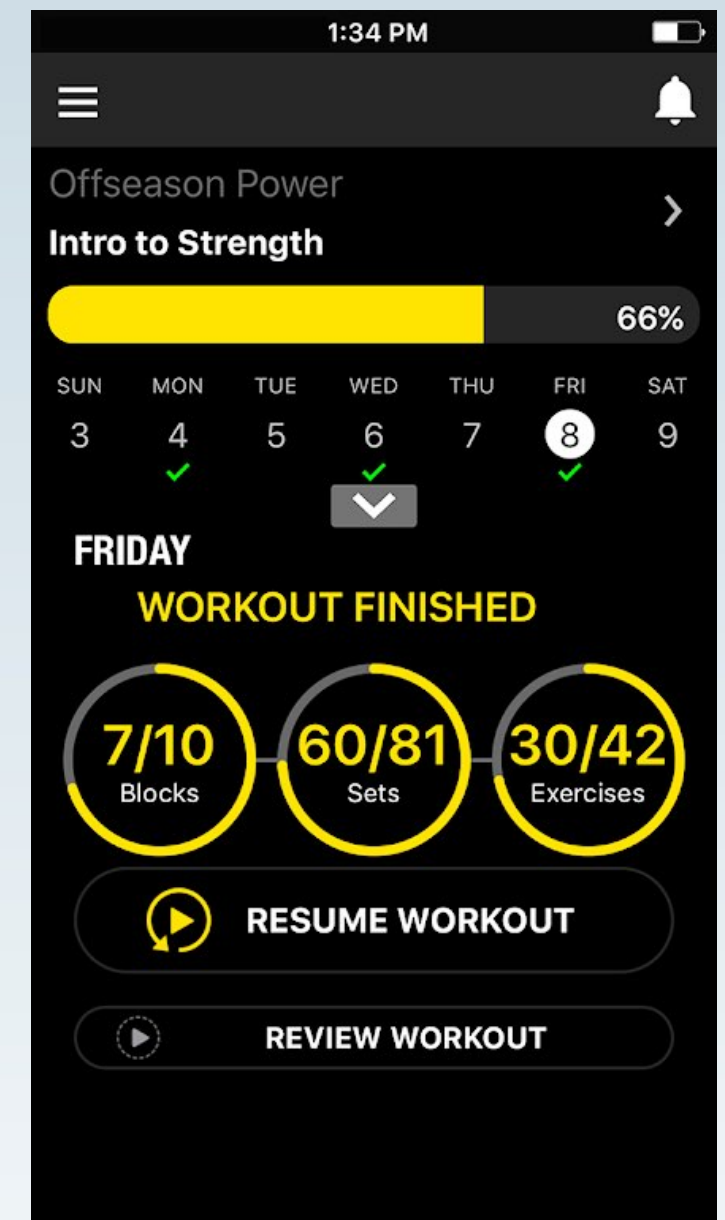
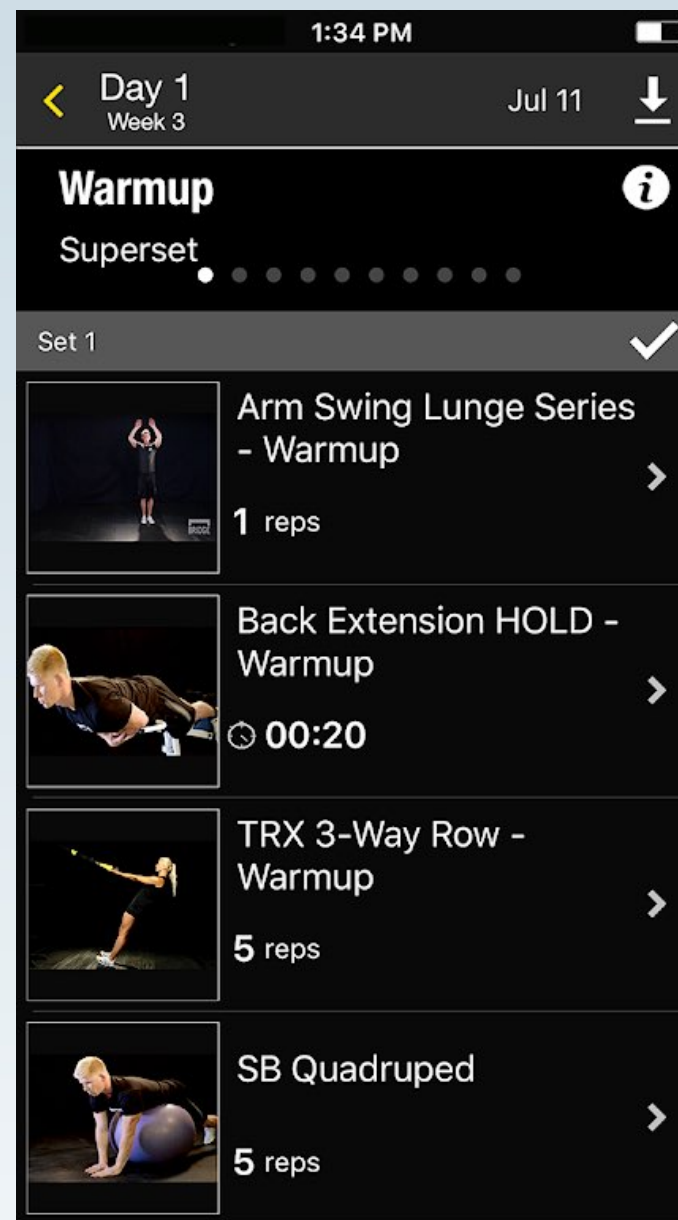
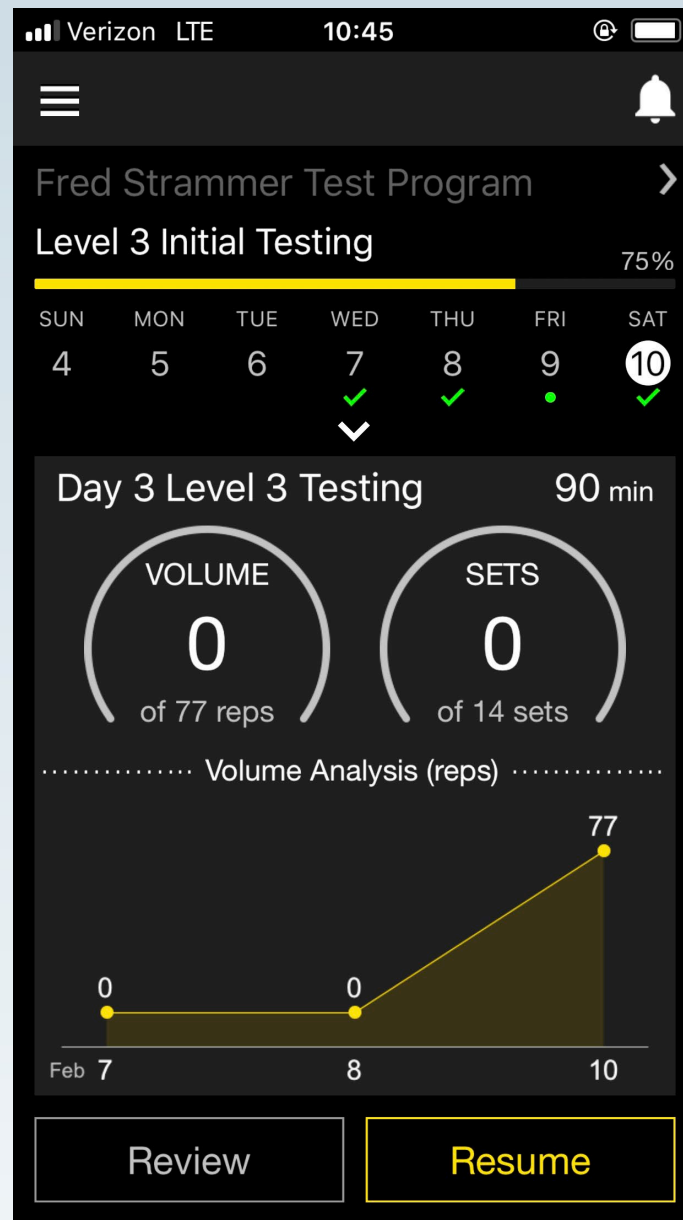
# SPT WORKFLOW

## IS THE ATHLETE TRAINING EFFECTIVELY?



# SPT WORKFLOW

IS THE ATHLETE IMPROVING HIS/HER FITNESS?



Athlete completes SPT Movement Screen and Fitness Test BridgeTracker (~30-90mins for 3-6 days)



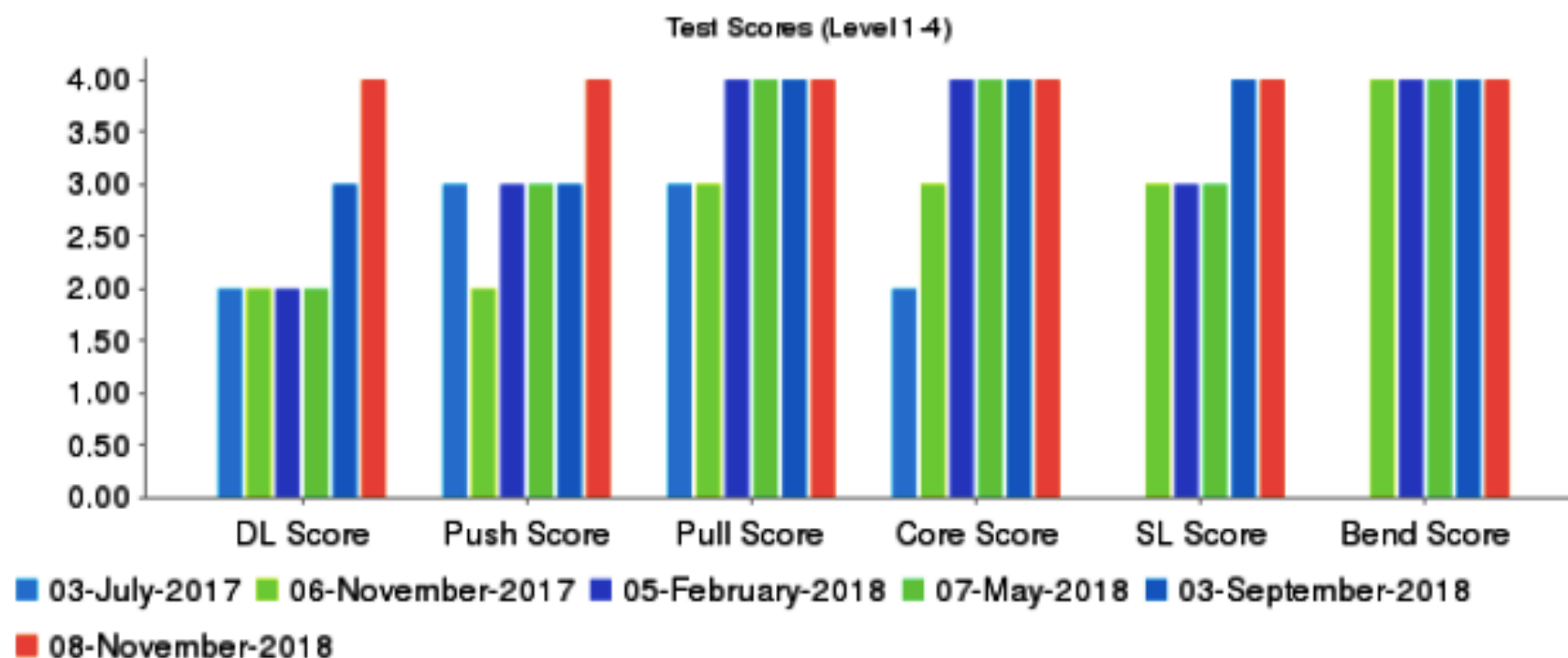
# SPT WORKFLOW

## IS THE ATHLETE IMPROVING HIS/HER FITNESS?

### Benchmark Test Score Summary

Review your test scores for each of the six movement patterns. Each section has your previous, current, and personal best score of movements tested. SPT Standards for each movement are listed above results. Note what biological age you fall in. Realize standards change with biological age.

#### Benchmark Testing Scores



Benchmark Total **24.00**



# SPT WORKFLOW

## IS THE ATHLETE READY TO TRAIN?

T-Mobile LTE 12:03

Body Mass

Entered on 11/26/2018

**Body Mass**

175.00 lb

Enter your daily body mass in the morning at the same time prior to eating or drinking

**Sleep Duration**

How many hours did you sleep last night? (decimal value e.g. 8 hr 30 min = 8.5 hours)

**Sleep Quality**

☐ Worse than normal

☐ Normal

☐ Better than normal

How well did you sleep last night?

! Sleep Quality is required

CANCEL

T-Mobile Wi-Fi 02:19

Body Mass

**Urine colour**

1 - clear 8 - dark

What was the colour of your urine when you first went to the bathroom this morning?

1 2 3 4 5 6 7 8

**Are you currently injured?**

☒ Yes

☐ No

**Did your injury keep you from completing your land-based training today?**

☐ Yes

☒ No

**Did your injury keep you from completing your training on the water today?**

☐ Yes

CANCEL

T-Mobile LTE 12:03

General Wellness Questionnaire

**Overall Health**

Feeling great! Unwell

**Stress Levels**

Very relaxed Highly stressed

**Mood**

Very positive Highly annoyed/irritable

**Muscle Fatigue**

Very fresh Very tired

CANCEL PREVIOUS NEXT

# SPT WORKFLOW

## IS THE ATHLETE READY TO TRAIN?

Daily Athlete Readiness Report

Date	About	Sleep Duration	Sleep Quality	Overall	Stress	Mood	Fatigue	Soreness	Readiness	7d Readiness	Daily Readiness
11/01/2018		8.0	Better than normal	Feeling good	Slightly stressed	Neutral	Moderately tired	Sore--some difficulty moving	60	64	Monitor Athlete--Condition Changing
11/01/2018		9.0	Better than normal	Feeling OK	Slightly stressed	Moderately positive	Very fresh	Feeling great!	80	80	Monitor Athlete--Condition Changing
11/01/2018		7.0	Normal	Feeling good	Relaxed	Moderately positive	Fresh but not 100%	Great--some soreness	80	88	Monitor Athlete--Condition Changing
11/01/2018		5.0	Worse than normal	Feeling great!	Slightly stressed	Neutral	Fresh but not 100%	Great--some soreness	76	88	Monitor Athlete--Condition Changing
11/01/2018		9.0	Normal	Feeling good	Relaxed	Very positive	Fresh but not 100%	Great--some soreness	84	84	Ready!
11/01/2018		9.0	Normal	Feeling great!	Very relaxed	Very positive	Fresh but not 100%	Feeling great!	96	88	Ready!
11/01/2018		7.0	Worse than normal	Feeling great!	Stressed	Neutral	Fresh but not 100%	Great--some soreness	72	76	Monitor Athlete--Condition Changing
11/01/2018		8.0	Worse than normal	Feeling great!	Stressed	Slightly annoyed/irritable	Fresh but not 100%	Sore--some difficulty moving	64	76	Monitor Athlete--Condition Changing
11/01/2018		5.0	Normal	Feeling good	Relaxed	Moderately positive	Fresh but not 100%	Sore--some difficulty moving	76	80	Monitor Athlete--Condition Changing

Overview Of Coach's Daily Report For Entire Roster

# SPT WORKFLOW

## MULTI-DAY CAMP PLANNING

T-Mobile LTE 12:03

Body Mass

Entered on 11/26/2018

**Body Mass**

175.00 lb

Enter your daily body mass in the morning at the same time prior to eating or drinking

**Sleep Duration**

How many hours did you sleep last night? (decimal value e.g. 8 hr 30 min = 8.5 hours)

**Sleep Quality**

☐ Worse than normal

☐ Normal

☐ Better than normal

How well did you sleep last night?

! Sleep Quality is required

CANCEL

T-Mobile Wi-Fi 02:19

Body Mass

**Urine colour**

1 - clear 8 - dark

What was the colour of your urine when you first went to the bathroom this morning?

1 2 3 4 5 6 7 8

**Are you currently injured?**

☒ Yes

☐ No

**Did your injury keep you from completing your land-based training today?**

☐ Yes

☒ No

**Did your injury keep you from completing your training on the water today?**

☐ Yes

CANCEL

T-Mobile LTE 12:03

General Wellness Questionnaire

**Overall Health**

Feeling great! Unwell

**Stress Levels**

Very relaxed Highly stressed

**Mood**

Very positive Highly annoyed/irritable

**Muscle Fatigue**

Very fresh Very tired

CANCEL PREVIOUS NEXT



# SPT WORKFLOW

## MULTI-DAY CAMP PLANNING

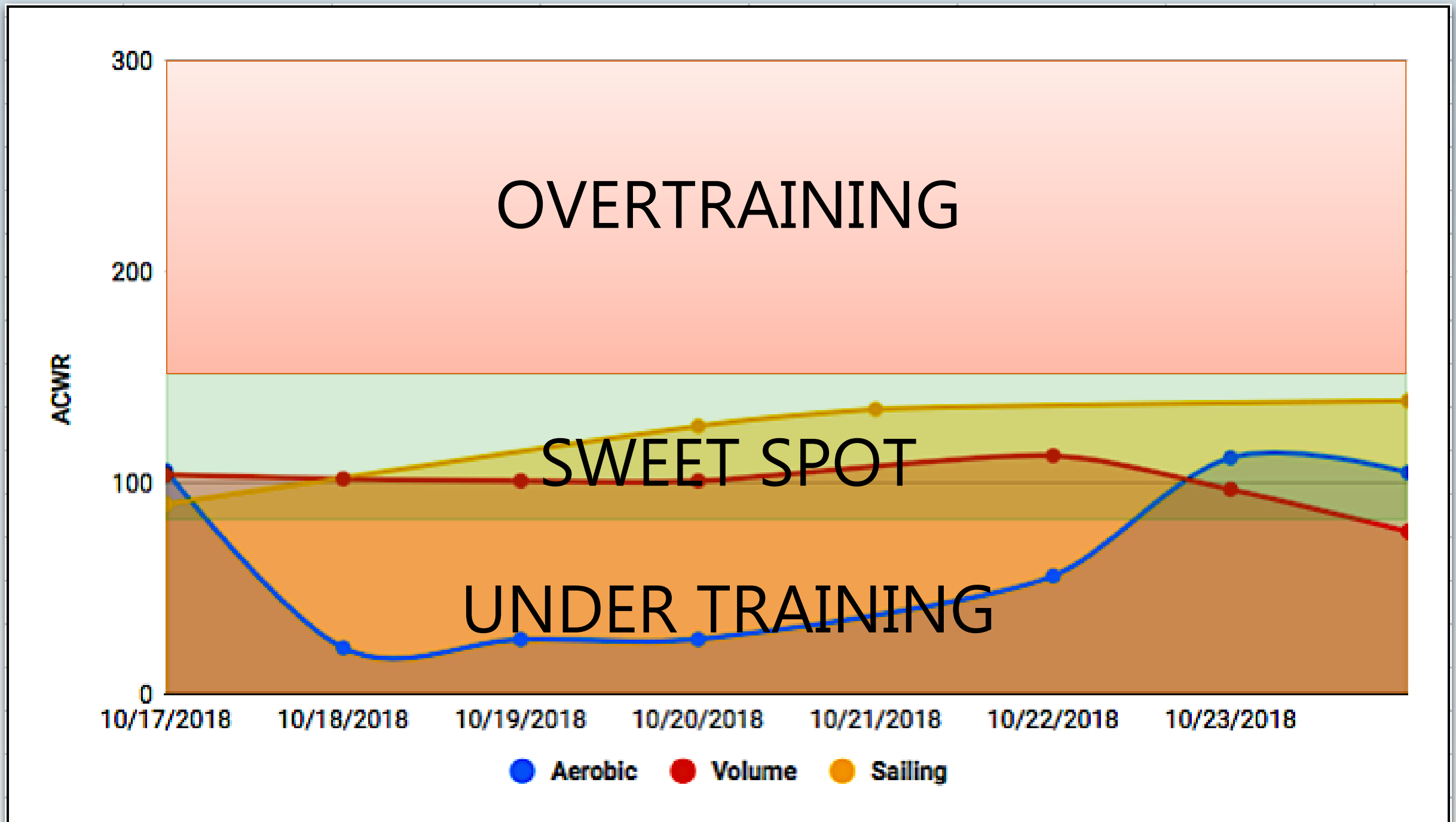
### 7d Athlete Readiness Report

Date	About	Sleep Duration	Sleep Quality	Ill?	Injured?	Overall	Stress	Mood	Fatigue	Soreness	7d Readiness
10/31/2018		7.5	Normal	No	No	Feeling good	Slightly stressed	Slightly annoyed/irritable	Moderately tired	Very sore	68
10/30/2018		9.0	Normal	No	No	Feeling good	Slightly stressed	Moderately positive	Moderately tired	Sore—difficulty moving	72
10/29/2018		7.0 Worse than normal		No	No	Feeling good	Relaxed	Moderately positive	Tired but can push	Sore—difficulty moving	80
10/28/2018		8.5	Normal	No	No	Feeling great!	Relaxed	Moderately positive	Tired but can push	Sore—some difficulty moving	88
10/27/2018		8.0	Normal	No	No	Feeling good	Relaxed	Moderately positive	Fresh but not 100%	Great—some soreness	88
10/26/2018		7.0 Worse than normal		No	No	Feeling good	Slightly stressed	Very positive	Very fresh	Great—some soreness	92

### Single Athlete 7 Day Readiness Scores

# SPT WORKFLOW

## MULTI-DAY CAMP PLANNING



ACWR Graph

# SPT WORKFLOW

## MULTI-DAY CAMP PLANNING

7d Athlete Readiness Report

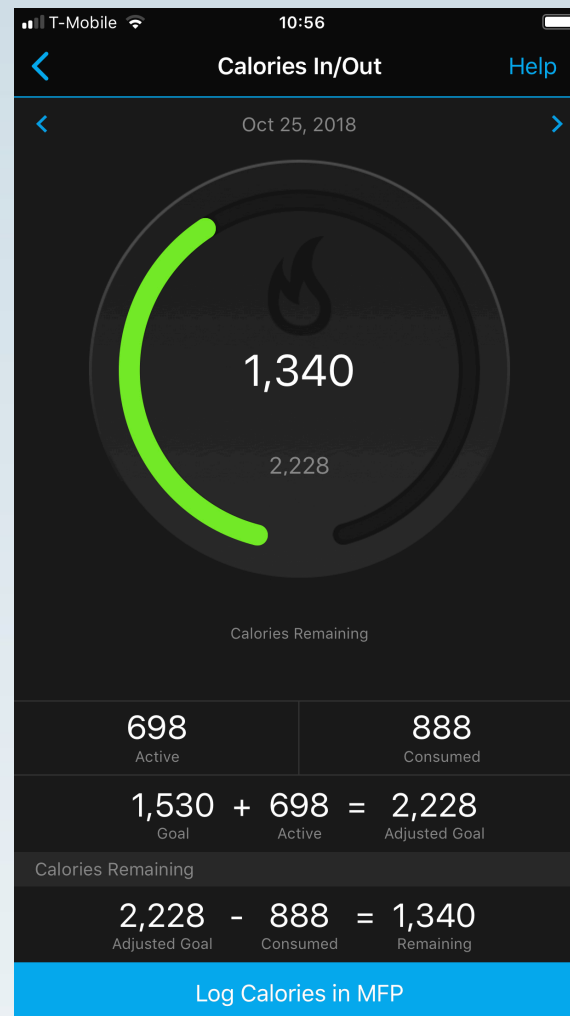
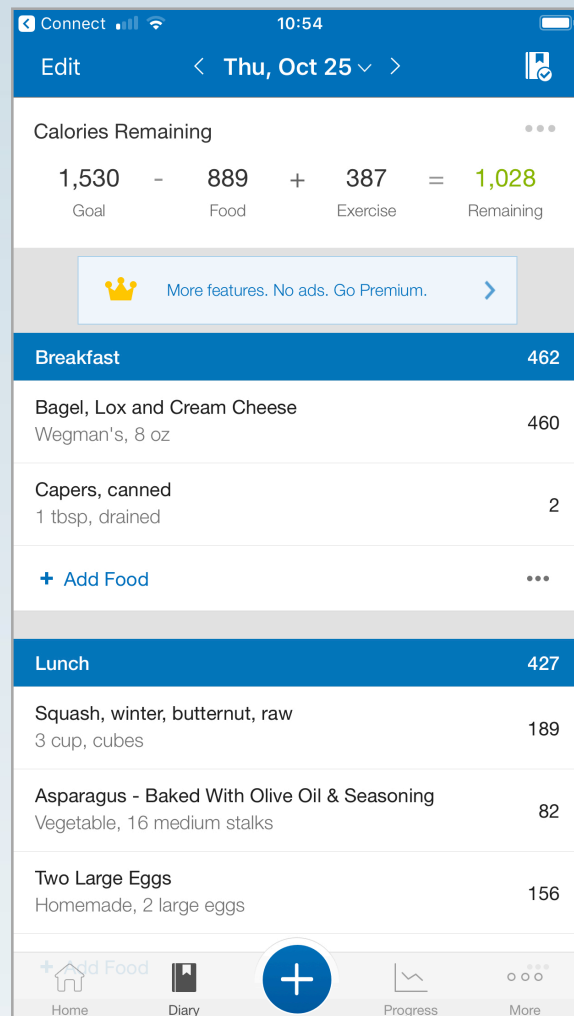
Date	About	Sleep Duration	Sleep Quality	Ill?	Injured?	Overall	Stress	Mood	Fatigue	Soreness	7d Readiness
10/31/2018		7.5	Normal	No	No	Feeling good	Slightly stressed	Slightly annoyed/irritable	Moderately tired	Very sore	68
10/30/2018		9.0	Normal	No	No	Feeling good	Slightly stressed	Moderately positive	Moderately tired	Sore—difficulty moving	72
10/29/2018		7.0 Worse than normal		No	No	Feeling good	Relaxed	Moderately positive	Tired but can push	Sore—difficulty moving	80
10/28/2018		8.5	Normal	No	No	Feeling great!	Relaxed	Moderately positive	Tired but can push	Sore—some difficulty moving	88
10/27/2018		8.0	Normal	No	No	Feeling good	Relaxed	Moderately positive	Fresh but not 100%	Great—some soreness	88
10/26/2018		7.0 Worse than normal		No	No	Feeling good	Slightly stressed	Very positive	Very fresh	Great—some soreness	92

Single Athlete 7 Day Readiness Scores



# SPT WORKFLOW

## MONITORING WEIGHT & FUELING/ENERGY



1. Athlete steps on Garmin Smart Scale (~30 seconds)
2. Athlete completes daily food log via MyFitnessPal (~1-5 minutes)
3. Athlete wears wearable device

# ATHLETE DATA

## VALIDATING YOUR PLAN

- Is the athlete training on his/her own?
  - **Wearable devices, BridgeTracker**
- Understand how to structure daily and weekly camps to ensure athletes won't burnout
  - **ACWR, Athlete Readiness, Athlete Long Term Plan, Trends in Workload, Wearables**
- Better strategies for recovery to perform better the next day
  - **Athlete Readiness Scores, Wearables**
- Increased confidence for coaches and athletes in the long term training plan
  - **Trends in Workload, Athlete Long Term Plan, Accountability Tracking, Athlete Readiness, Wearables**

# ATHLETE DATA

## VALIDATING YOUR PLAN

- Can the athlete push harder on the water or in the gym?
  - **Trends in Workload**
- Is the athlete giving me his/her best effort?
  - **RPE/Stoke Scores**
- Measurable progress towards fitness and wellness goals (i.e. body composition, weight gain/loss, cardiovascular improvement, etc.)
  - **Wearables, Fitness Tracking, Trends in Workload, VO2, Garmin Scale**



# SUMMARY

## **Assessment of the sport**

- Early Specialization

## **Athlete Developmental Pathway**

- High Performance Plan
- Periodized Training Model

## **Validation and Refinement Through Data**

- Subjective vs Objective Data

## **Workflows To Raise Your Team's Game**

- Athlete/Coach User-Friendly Platforms

## **The Future Of Athlete Tracking**

- Wearables, live-stream data collection



*“Winning isn’t everything; it’s the only thing left to do.”*

Vince Lombardi

# S|P|T

## Sailing Performance Training

*“Enhancing Sailing Performance Through Fitness”*

Mike Kuschner - Head Coach

Fred Strammer - Athlete Coordinator

[Fred@SailingPerformanceTraining.com](mailto:Fred@SailingPerformanceTraining.com)

(941) 468-3922

[SailingPerformanceTraining.com](http://SailingPerformanceTraining.com)