



# Benefits to Utilizing Wearable Technology in Heat Stress Prevention

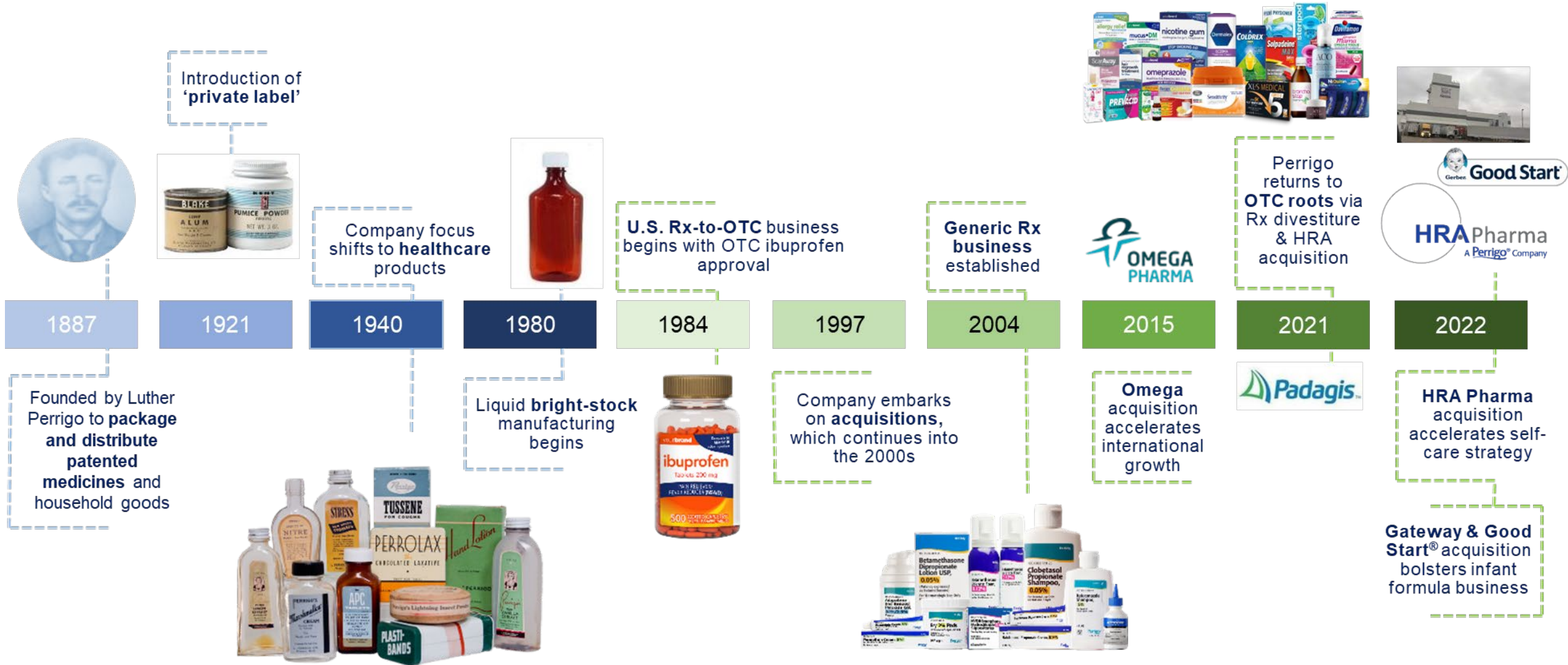
April 15, 2025





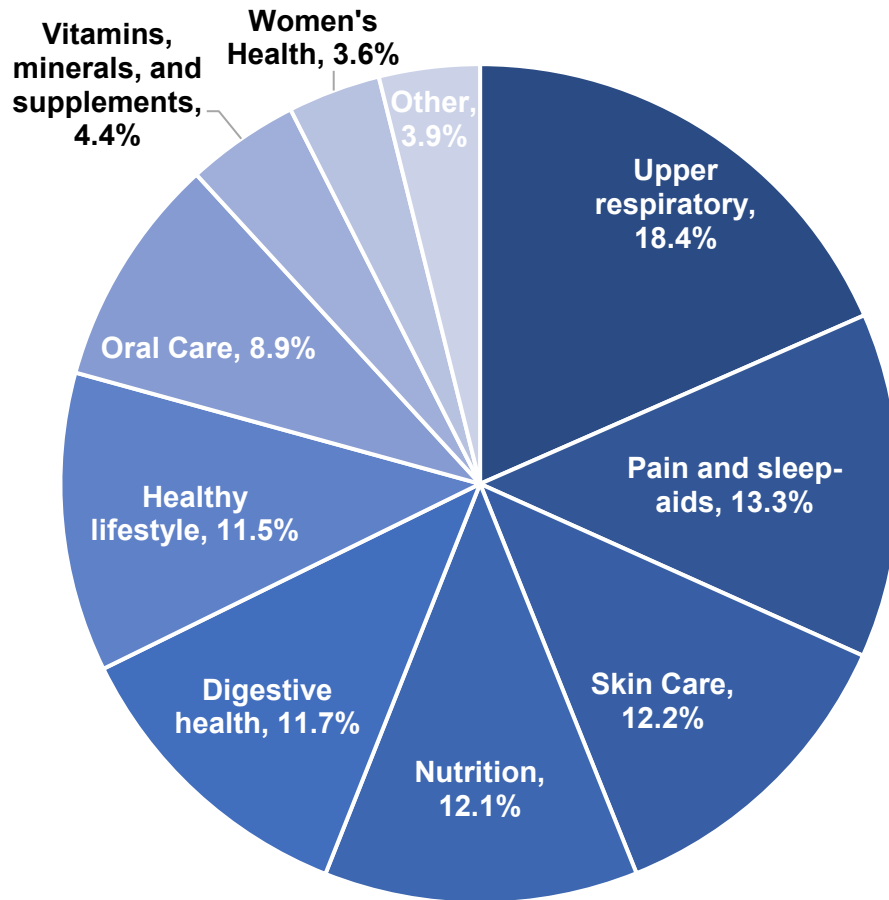
# Perrigo Overview

# Perrigo is a 135-year-old Company and One of the Originators of the Over-The-Counter (OTC) Market



# Perrigo is a Leading Global Consumer Self-Care Company

## Diversified Across Global OTC Categories (FY2023 net sales)



## With Leading Brands & Businesses Including<sup>1,2...</sup>

#1 Foot Blister  
#2 Cold Sore  
**Compeed**  
DE/FR/SP/IT/UK  
BE/NL/SW/NO

#1 Natural  
Cough/Cold/Allergy  
**PHYSIOMER**  
BE/GR/IT

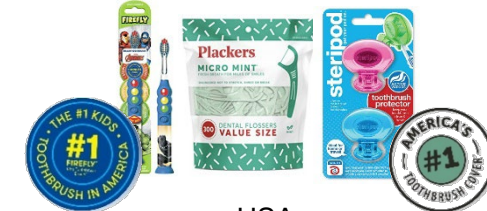
#1 Head Lice  
**PARANIX**  
UK/FR/IT/SE/  
NO/PT/CE/TK

#1 Store Brand  
Supplier of  
Infant Formula



USA

#1 Flosser & Floss Picks Brand<sup>3</sup>  
#1 Kids' toothbrush brand<sup>4</sup>  
#1 Toothbrush Protector brand in U.S.<sup>5</sup>



USA

#1 Store Brand  
Supplier of OTC  
Products



USA

#1 Insect Repellent  
**JUNGLE FORMULA**  
UK/SP/NL

#1 Skincare  
**ACO**  
Apotecna Composita  
SINCE 1939  
SW/NOR

#1 Weight Loss  
**XLS-MEDICAL**  
FR/IT/BE/UK/GR

1. Sources: CSCA: IRI & Perrigo omnichannel data. CSCI: consolidation of various sources (PBI and HRA Global DB), IQVIA, IRI, Nielsen, Openhealth, DLIMI, PEX, Newline, HMR, Farmastat, Laaketietokeskus.
2. Country Codes: DE: Denmark, FR: France, SP: Spain, IT: Italy, UK: United Kingdom, BE: Belgium, NL: Netherlands, SW: Sweden, NO: Nordics, GR: Greece, PT: Portugal, CE: Czech Republic; TK: Turkey.
3. Category refers to pre-threaded single use flossers and floss picks. Based on IRI unit sales L52W Ending 12.04.22
4. Kids manual toothbrush brand based on IRI dollar sales L52W ending 01.01.23
5. Based on dollar sales from IRI Multi-Outlet Total US, Dec 2021-Jan 2023

# With a Diversified Portfolio of Store Brands and National Brands Distributed Across >80 Countries

## Strong Store Brand Partnerships



## Strong National Brands

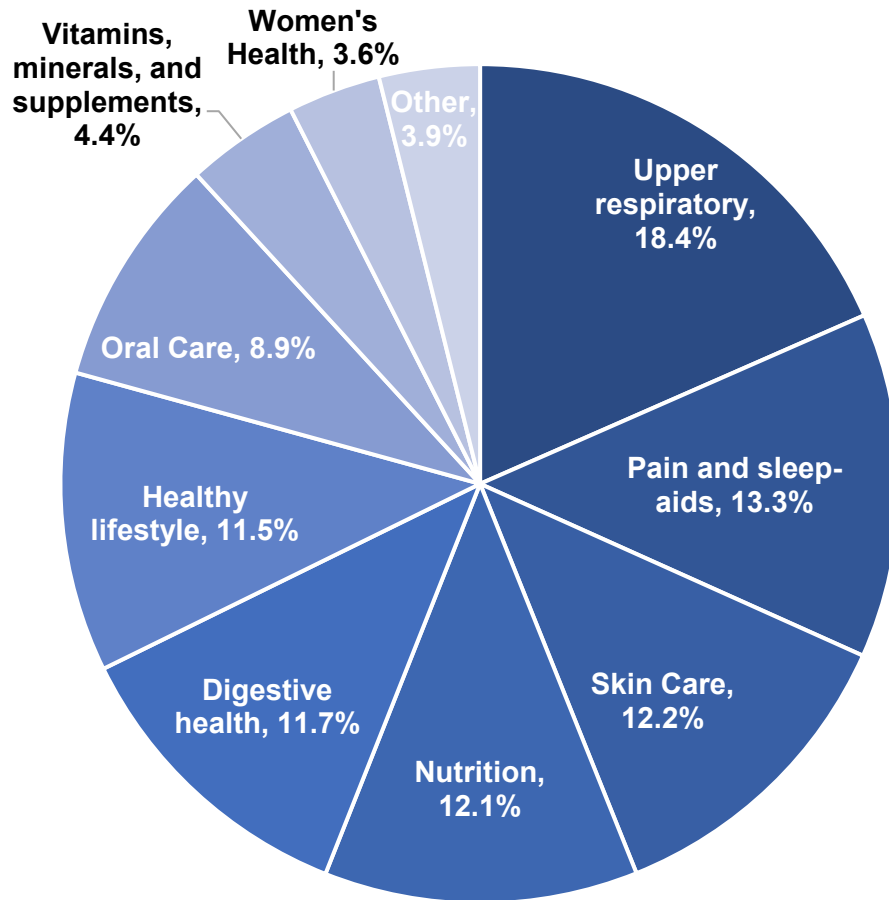


## Distribution in ~80 Countries



# Perrigo is a Leading Global Consumer Self-Care Company

## Diversified Across Global OTC Categories (FY2023 net sales)



## With Leading Brands & Businesses Including<sup>1,2...</sup>

#1 Foot Blister  
#2 Cold Sore  
**Compeed**  
DE/FR/SP/IT/UK  
BE/NL/SW/NO

#1 Natural  
Cough/Cold/Allergy  
**PHYSIOMER**  
BE/GR/IT

#1 Head Lice  
**PARANIX**  
UK/FR/IT/SE/  
NO/PT/CE/TK

#1 Store Brand  
Supplier of  
Infant Formula



USA

#1 Flosser & Floss Picks Brand<sup>3</sup>  
#1 Kids' toothbrush brand<sup>4</sup>  
#1 Toothbrush Protector brand in U.S.<sup>5</sup>



USA

#1 Store Brand  
Supplier of OTC  
Products



USA

#1 Insect Repellent  
**JUNGLE FORMULA**  
UK/SP/NL

#1 Skincare  
**ACO**  
Apotecna Composita  
SINCE 1939  
SW/NOR

#1 Weight Loss  
**XLS-MEDICAL**  
FR/IT/BE/UK/GR

1. Sources: CSCA: IRI & Perrigo omnichannel data. CSCI: consolidation of various sources (PBI and HRA Global DB), IQVIA, IRI, Nielsen, Openhealth, DLIMI, PEX, Newline, HMR, Farmastat, Laaketietokeskus.
2. Country Codes: DE: Denmark, FR: France, SP: Spain, IT: Italy, UK: United Kingdom, BE: Belgium, NL: Netherlands, SW: Sweden, NO: Nordics, GR: Greece, PT: Portugal, CE: Czech Republic; TK: Turkey.
3. Category refers to pre-threaded single use flossers and floss picks. Based on IRI unit sales L52W Ending 12.04.22
4. Kids manual toothbrush brand based on IRI dollar sales L52W ending 01.01.23
5. Based on dollar sales from IRI Multi-Outlet Total US, Dec 2021-Jan 2023

# Our Vision, Purpose & Strategic Principles Designed to Win in Self-Care Are Clear

## ONE Perrigo<sup>®</sup> VISION

To provide the best self-care for everyone



## ONE Perrigo<sup>®</sup> PURPOSE

Make lives better through trusted health and wellness solutions, accessible to all



# Heat Stress - The Evolution to Utilizing Technology

Our Original Program

Evolving Program

Benefits to Utilizing Wearable Technology

Opportunities



# Nutritional Manufacturing Facilities 24/7 Operations



## Eau Claire, Wisconsin

200 Employees  
295,000 ft<sup>2</sup> Plant  
38 Acres  
Blending, Drying, and Packaging  
**Capacity**  
7-Day: 26.5 Million Lbs.



## Georgia, Vermont

424 Employees  
220,000 ft<sup>2</sup> Plant  
28 Acres  
Blending, Drying, and Packaging  
**Capacity**  
7-Day: 48 Million Lbs.



## Covington, Ohio

104 Employees  
100,000 ft<sup>2</sup> Plant  
7 Acre Plant Site + 23 Acres Open  
Drying and Bulk Packaging  
**Capacity**  
7-Day: 12 Millions Lbs.

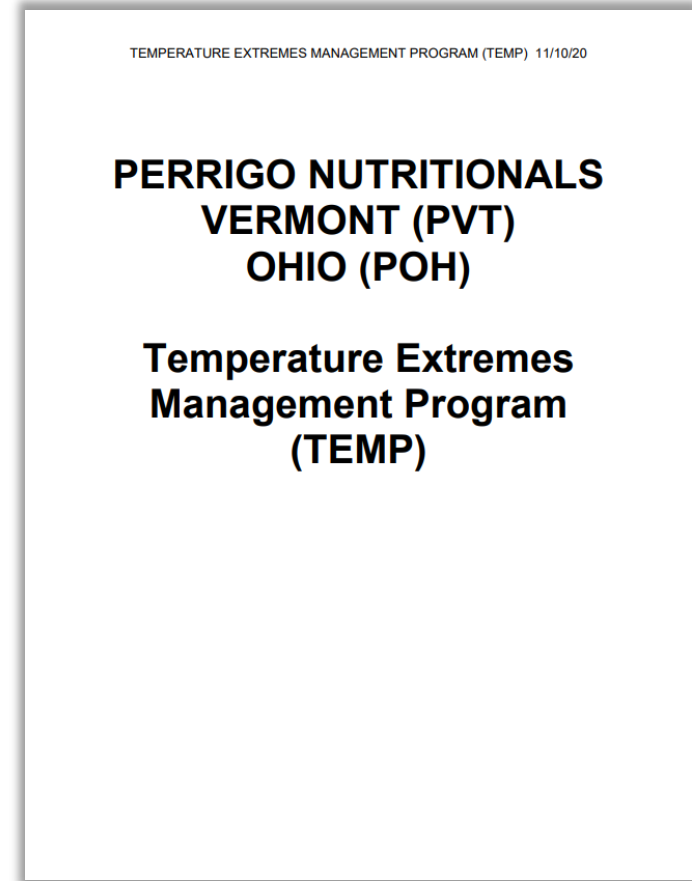
- Perrigo's nutritional manufacturing plants make infant formula
- Infant formula is made by blending dry and liquid(water, oils) materials together
- The liquified material is heat treated and pasteurized and then cooled
- Water is evaporated and material is spray dried in a multi-story spray dryer (4-5 stories) around 140°F and transported through a cyclone for particle sizing

# Our Original Heat Stress Prevention Program

- Identified risk associated with heat and a history of heat-related incidents
- Developed a written program approximately 10 years ago
- Key elements included:
  - Work/Rest periods based on Temp/Relative Humidity
  - Cool area for breaks
  - Fluid replacement

## Challenges

- Difficult to track employee work/rest periods
- Lack of robust acclimatization process
- Temperature, Humidity and Heat index has limitations



# Monitoring for Heat Stress Conditions

Where do you start?



Waterless WBGT Monitor

## QUESTemp® 32 components



Water-Filled WBGT Monitor

Understand Your Risk

# Permit to Work in Heat - Evolution

- Started with a simple program
- Industry benchmarking indicated we were doing the same things as everyone else was doing
- Looking for technology solutions
- Significant event occurred in 2021 transitioned and upgraded program
- Developed multi-step evaluation and Permit to Work Process

## Permit to Work in Heat – Perrigo Vermont (PVT) & Ohio (POH)

*Guidance: This permit is to be used when employees are working in adjusted wet bulb globe temperature (WBGT) over 90 F for a maximum of one shift. In addition to this permit, employees shall utilize wearable technology with predictive alarming (“Bio Trackers”). All employees working in heat shall follow the water intake recommendations found in the PVT/POH “Heat Stress Prevention Plan.” If an employee is observed exhibiting signs of heat stress, the employee must be immediately removed from working in heat even if the work interval is not exceeded. Summon emergency services immediately if heat stroke is suspected (PVT: 35-6000, POH: 37-8019).*

Location(s): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Task(s) Being Performed in heat: \_\_\_\_\_

**Step 1:** Determine the WBGT temperature in degrees Fahrenheit (F): WBGT: \_\_\_\_\_ F (from monitor)

**Note:** Do not use “air temperature”. It is important use the wet bulb globe temperature (WBGT) from one of the WBGT monitors located in higher temperature areas. Contact EHS immediately for clarification.

**Step 2:** Determine the clothing adjustment factor (add to WBGT): Clothing Adjusted WBGT: \_\_\_\_\_ F

Applicable	Clothing Worn	Clothing Adjustment Factor (CAF)
Yes / No	Cotton work clothes (long sleeves & pants)	No adjustment
Yes / No	Cloth (woven material) coveralls	No adjustment
Yes / No	Double-layer woven clothing	Add 3 C or 5.4 F
Yes / No	SMS polypropylene coveralls	Add 0.5 C or 0.9 F
Yes / No	Polyolefin coveralls (i.e., Tyvek)	Add 1 C or 1.8 F
Yes / No	Vapor-barrier coveralls, chemical resistant suit	Add 11 C or 19.8 F

*Adapted from: ACGIH “2017 TLVs and BEIs” Table 1*

**Step 3:** Determine the metabolic work rate:

Applicable	Category	Metabolic Rate (W)	Examples
Yes/No	Light	115	Sitting, standing, light arm/hand work and light walking
Yes/No	Moderate	180	Moderate lifting, mopping/cleaning, “punching” MW dryer
Yes/No	Heavy/Very Heavy	300 to 520	Heavy manual material handling, unjamming equipment, manual rework, etc.

*Adapted from: ACGIH “2017 TLVs and BEIs” Table 3*

# Permit to Work in Heat – Evolving

## Work/Rest Ratio and Controls

- Developed based upon conditions and work to be performed

**Step 4:** Determine appropriate work/rest intervals and additional controls.

Adjusted WBGT Temperature (F)	Light Work (mins work/rest)	Mod. Work (mins work/rest)	Heavy Work (mins work/rest)
80 to 90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30 (Cooling Vests Required)
101	Normal	40/20	30/30 (Cooling Vests Required)
102	Normal	35/25	25/35 (Cooling Vests Required)
103	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
104	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
105	Normal	25/35 (Cooling Vests Required)	15/45 (Cooling Vests Required)
106	45/15	20/40 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
107	40/20	15/45 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
108	35/25	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required
109	30/30 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required
110+	DANGER! CONTACT EHS IMMEDIATELY (1)		

Adapted from: NIOSH "Occupational Exposure to Heat and Hot Environments" (2016)

- (1) Extremely High Temperatures – Work cannot be completed under these conditions. To perform work, additional controls must be utilized to reduce the ambient heat to acceptable levels. Contact EHS immediately for additional guidance.

# Permit to Work in Heat – Layers of Control

- What controls and tools are required to be used
- Have the conditions changed over time?

**Step 5:** Identify additional controls to reduce the potential for heat stress:

Additional Controls (in addition to work/rest intervals) – Check all that apply	
Bio Trackers	<input type="checkbox"/> Buddy System
<input type="checkbox"/> Cooling garments (i.e. ice vests)	Electrolyte replacements
<input type="checkbox"/> Portable air movers/conditioning units	<input type="checkbox"/> Radio communications/check-ins
Other (list all):	

**Step 6:** Continue to monitor during the shift for adjustments in planning (recheck a minimum of 3 hours or if conditions change):

Shift time	Step 2: adjusted WBGT	Step 3: change?	Step 4: change?	Step 5: change?	Note change in plan
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	

Supervisor/Lead Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

List of Employees Working in Heat:

Notes:

Working closely with frontline employees and management was critical to this process!

# Acclimatization Process

How do we prepare people to work in a high heat environment:

- Started with training process and orientation
- How do you manage people that have experience working in a high heat environment, but have not recently been exposed

**EMPLOYEE HEAT STRESS ACCLIMATIZATION FORM**

Employee's Name: \_\_\_\_\_ Acclimatization Start Date: \_\_\_\_\_ End Date: \_\_\_\_\_

**FOR NEW EMPLOYEES WITHOUT PREVIOUS EXPERIENCE WORKING IN HEAT**

	% of Usual Shift Duration in Heat	Total Typical Heat Exposure Time (hr) <sup>1</sup>	Max Heat Exposure Per Shift (hr) <sup>2</sup>	Actual Heat Exposure Per Shift (hr)	Employee Signs of Heat Stress? (Y/N)	Supervisor Initials	Employee Initials	Comments
Day 1	20%		0					
Day 2	20%		0					
Day 3	40%		0					
Day 4	40%		0					
Day 5	60%		0					
Day 6	60%		0					
Day 7	80%		0					
Day 8	80%		0					
Day 9	100%		0					
Day 10	100%		0					

**Notes**

<sup>1</sup> Enter the usual/typical heat exposure time per shift based on the specific job.

<sup>2</sup> Maximum heat exposure time in minutes per day - not to be exceeded!

**FOR NEW EMPLOYEES WITH PREVIOUS EXPERIENCE WORKING IN HEAT**

	% of Usual Shift Duration in Heat	Total Typical Heat Exposure Time (hr) <sup>1</sup>	Max Heat Exposure Per Shift (hr) <sup>2</sup>	Actual Heat Exposure Per Shift (hr)	Employee Signs of Heat Stress? (Y/N)	Supervisor Initials	Employee Initials	Comments
Day 1	50%		0					
Day 2	60%		0					
Day 3	80%		0					
Day 4	100%		0					

**Notes**

<sup>1</sup> Enter the usual/typical heat exposure time per shift based on the specific job.

<sup>2</sup> Maximum heat exposure time in minutes per day - not to be exceeded!

Contact EHS For Any Assistance & Return Completed Permits to EHS



## **What does the Perrigo Heat Stress Prevention Program Look Like**



# Heat Stress – Permit to Work

- Daily Shift Huddles and Morning/Afternoon Staff Shift Meetings
- Team includes the permit to work in heat plan

## Permit to Work in Heat – Perrigo Vermont (PVT) & Ohio (POH)

Guidance: This permit is to be used when employees are working in adjusted heat over 90°F for a maximum of one shift. In addition to this permit, employees shall utilize wearable technology with predictive alarming ("Bio Trackers"). All employees working in heat shall follow the water intake recommendations found in the PVT/POH "Heat Stress Prevention Plan." If an employee is observed exhibiting signs of heat stress, the employee must be immediately removed from working in heat even if the work interval is not exceeded. Summon emergency services immediately if heat stroke is suspected (PVT: 35-6000, POH: 37-8019).

Location(s): Dryer Date/Time: 6-15-22 06:30 Task(s) Being Performed in heat: \_\_\_\_\_

Step 1a: Determine the WBGT temperature in degrees Fahrenheit (F): WBGT: 96.9 F (from monitor)

Step 1b: Note: If WBGT is not available, use the "NOAA's National Weather Service Heat Index" (page 2)

Step 2: Determine the clothing adjustment factor (add to WBGT): Clothing Adjusted WBGT: 96.9 F

Applicable	Clothing Worn	Clothing Adjustment Factor (CAF)
Yes/No	Cotton work clothes (long sleeves & pants)	No adjustment
Yes/No	Cloth (woven material) coveralls	No adjustment
Yes/No	Double-layer woven clothing	Add 3 C or 5.4 F
Yes/No	SMS polypropylene coveralls	Add 0.5 C or 0.9 F
Yes/No	Polyolefin coveralls (i.e. Tyvek)	Add 1 C or 1.8 F
Yes/No	Vapor-barrier coveralls, chemical resistant suit	Add 11 C or 19.8 F

Adapted from: ACGIH "2017 TLVs and BEIs" Table I

Step 3: Determine the metabolic work rate:

Applicable	Category	Metabolic Rate (W)	Examples
Yes/No	Light	115	Sitting, standing, light arm/hand work and light walking
Yes/No	Moderate	180	Moderate lifting, mopping/cleaning, "punching" MW dryer
Yes/No	Heavy/Very Heavy	300 to 520	Heavy manual material handling, unjamming equipment, manual rework, etc.

Adapted from: ACGIH "2017 TLVs and BEIs" Table 3

Step 4: Determine appropriate work/rest intervals and additional controls.

Adjusted Temperature (F)	Light Work (mins work/rest)	Mod. Work (mins work/rest)	Heavy Work (mins work/rest)
80 to 90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30 (Cooling Vests Required)
101	Normal	40/20	30/30 (Cooling Vests Required)
102	Normal	35/25	25/35 (Cooling Vests Required)
103	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
104	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
105	Normal	25/35 (Cooling Vests Required)	15/45 (Cooling Vests Required)
106	45/15	20/40 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
107	40/20	15/45 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
108	35/25	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required

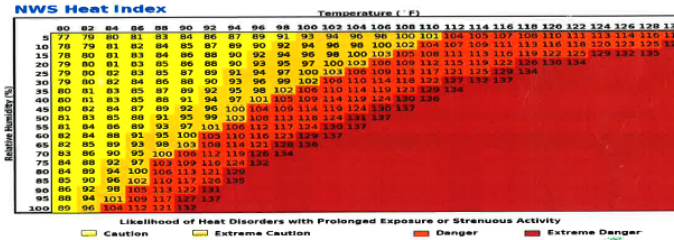
Step 5: Identify additional controls to reduce the potential for heat stress:

Additional Controls (in addition to work/rest intervals) – Check all that apply			
<input checked="" type="checkbox"/> Bio Trackers	<input checked="" type="checkbox"/> Buddy System	<input checked="" type="checkbox"/> Cooling garments (i.e. Ice vests)	<input checked="" type="checkbox"/> Electrolyte replacements
<input checked="" type="checkbox"/> Portable air movers/conditioning units	<input checked="" type="checkbox"/> Radio communications/check-ins		
Other (list all):			

Step 6: Continue to monitor during the shift for adjustments in planning (recheck a minimum of 3 hours or if conditions change):

Shift time	Step 2: adjusted WBGT	Step 3: change?	Step 4: change?	Step 5: change?	Note change in plan
06:30	96.9	Yes/No	Yes/No	Yes/No	None
07:30	92.5	Yes/No	Yes/No	Yes/No	None
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	

Supervisor/Lead Signature: SP Date/Time: 6-15-22



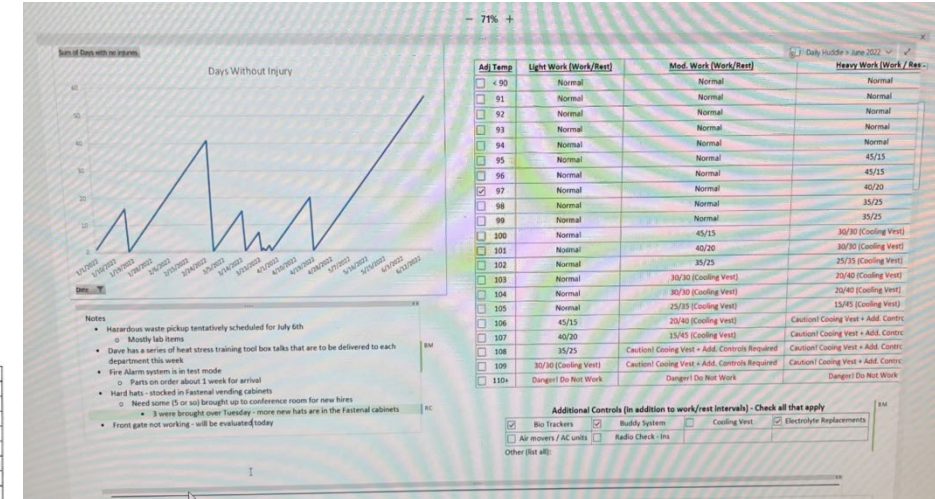
Note: If Wet Bulb Globe Temperature (WBGT) monitoring is not available, use the chart above to determine the adjusted temperature factoring in relative humidity.

List of Employees Working in Heat:

Notes: Ted

EHS Permit Review

Initials/Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Comments: \_\_\_\_\_



- It is now part of the routine discussions for all huddles

# Heat Stress – Tools



# Heat Stress – Cooling Vests

- Very difficult to find a food safe cooling vest that that Quality group would allow into a cGMP area
- Launderable and durable



POWERED BY  
**COOLPAX™**

**6626**  
TechNiche Phase Change Cooling  
**VEST**  
Powered by CoolPax™

→ V-neck with zipper closure

→ Hook and loop girth and shoulder adjustments

→ 100% cotton vest, with thermal liner

→ Includes: One set of four (4) 6665-V CoolPax™ Cooling Inserts, and one cooler bag

→ Deploy extra CoolPax™ Cooling Inserts to achieve continuous cooling

→ Total Weight: 2.7kg (including 6665V CoolPax™ Inserts)

→ Insert Compatibility: 6665-V, 7065-V

→ Sizes: M/L (45-80kg), L/XL (80-113kg), 2XL (113-136kg)

→ Colors: Blue, Black, Khaki

PHASE CHANGE COOLING TECHNOLOGY



# Heat Stress Written Program Revision 2022



Perrigo Nutritionals, LLC  
Vermont & Ohio

## Heat Stress Prevention Plan

Plan last updated: 05/20/22

**Policy:** Perrigo Nutritionals is committed to protecting employees from the hazards of hot conditions and preventing heat-related illnesses at the workplace. We will identify, evaluate, and control potential exposure of our employees to extreme temperature, humidity, and other heat-related factors.

**Applicability:** This Plan covers employees who are exposed to heat stress hazards on the job. Specifically, this program applies when the adjusted wet bulb globe temperature (WBGT) meets or exceeds 77 F (based on the recommended heat stress exposure limits (RELs) found in the 2016 NIOSH "Occupational Exposure to Heat and Hot Environments" Figure 8-2 (assuming workers are acclimated and working at a high metabolic rate (500 kcal/h)). It is important to note that unacclimated employees are not exposed the full heat associated with their respective job tasks until they become acclimated. This is explained in more detail later in the program and is documented on Form EHS-029. In addition to metabolic rate, personal protective equipment (PPE) adjustments are made to account for the increased heat loading based on specific type of PPE workers are utilizing.

**Note:** This plan does not apply to the following situations:

- Emergency response events where there is potential for loss of life,
- Frequently performed short-duration inspections/rounds/tours or transitioning from one location to another, where the time spent in heat is negligible.
- This Plan cannot be used in extremely high temperatures (see "Definitions" section for details). Work in extremely high temperatures can be accomplished only through a specific safety plan that includes additional controls and is approved by EHS prior to commencement of work.

## Prevention

### Perrigo Heat Stress Training

Module 1 - Introduction

Workers who are exposed to extreme heat or work in hot environments may be at risk of heat stress. Exposure to extreme heat can result in occupational illnesses and injuries. Heat stress can result in heat stroke, heat exhaustion, heat cramps, dehydration, or heat rash. Heat can also increase the risk of injuries in workers as it may result in sweaty palms, fogged-up safety glasses, and dizziness.

Prevention of heat stress in workers is extremely important. Employees need to be trained so they understand what heat stress is, how it affects their health and safety, and how it can be prevented.

- How does the body respond to heat?**
  - The body tries to maintain a constant internal temperature by getting rid of excess heat
  - It uses two methods to get rid of heat: (1) increasing blood flow to skin surface and (2) sweating
  - Increasing blood flow to the skin surface means less blood flow to the brain and active muscles, which can cause reduced mental alertness & comprehension, fatigue, weakness, loss of strength
  - Sweating can cause objects to become slippery, increasing chances of an accident
- Why do the body's cooling mechanisms sometimes fail?**
  - High air temperature reduces effectiveness of heat release
  - High humidity reduces evaporation of sweat
  - Sweating leads to excess loss of fluid
  - Sweating leads to excess loss of sodium
- What factors contribute to heat-related illness?**
  - Environmental factors:** Air temperature, humidity, radiant heat sources, air circulation
  - Physical work factors:** (1) type of work, level of physical activity, exertion, and duration, and (2) weight, and breathability
  - Personal factors:** Age, weight/fatness, diet, underlying health issues, drug/alcohol use, prior heat
- Recognizing and treating the most common heat disorders**

Disorder	Cause	Signs & symptoms	Treatment
Heat stroke	Total breakdown of body's cooling system	High body temp (>103), sweating stops and skin is hot and dry, headache, dizziness, weakness, rapid pulse	Treat as a medical emergency; move victim to cool area, immerse victim in ice water or cool water, cover victim's body with dry cloths, stop fluids
Heat exhaustion	Excessive loss of water and salt	Heavy sweating, intense thirst, skin is pale and cool, rapid pulse, lightheadedness, nausea & vomiting, headache, blurred vision, fainting	Move to cool area, rest with legs elevated, loosen clothing, drink plenty of fluids
Heat cramps	Excessive loss of water and salt	Painful spasms in arms, legs and abdomen; hot, moist skin	Drink fluids, massage cramped areas, rest
Dehydration	Excessive loss of water and salt	Fatigue, weakness, dry mouth	Drink fluids and replace salt
Heat rash	Clogged sweat glands	Rash of pink pimples, intense itching, tingling	Clear skin area & dry; apply calamine or other lotion
- What is Perrigo doing to prevent heat-related illness?**
  - Provide and encourage employees to drink plenty of fluids: 5-7 ounces every 20 minutes
    - Squidcher Electrolyte Freeze Pops, Gatorade, Water and Media-Lyte Electrolyte re
  - Acclimatization - Gradually increase workers time in hot conditions over 7 to 14 days.
  - Permit to Work in Heat
  - Real-time Area Specific Temperature/Humidity Monitoring with WBGT Monitors
  - Cooling Vests
  - FireHUD Bio-Trackers - Bio-Tracking wearable devices that send real-time alerts for heat stress and use workout cycles, when conditions warrant, to give employees time to recover
- What further heat-related illness training can we expect?**

Over the course of the next few weeks employees will go through Perrigo's Heat Stress Training Series of 4 separate training modules. Each module covers specific focus areas around heat stress and the recognition, prevention, response, and management.

## Heat Stress Recognition

### Perrigo Heat Stress Training

Module 2 - Recognition: Signs, Symptoms & First Aid

Heat stress hazards are among the most neglected health hazards in the workplace. People tend to equate heat stress with just heat and discomfort. But it is much more. Heat stress is a serious health hazard. Several heat-related illnesses can affect workers. The symptoms are non-specific. This means that when a worker is performing physical labor in a warm environment, any unusual can be a sign of overheating.

Employees should become familiar with the heat symptoms. When any of these symptoms are present, promptly provide first aid to try to diagnose which illness is occurring. Diagnosis is often difficult because symptoms of multiple heat-related illnesses can overlap. Time is of the essence. These conditions can worsen quickly and result in fatalities. The main goal for this training module is to help you understand what heat stress is and to minimize your risk of experiencing a heat-related illness on the job.

Heat-Related Illness	Symptoms and Signs
Heat stroke	<ul style="list-style-type: none"><li>Confusion</li><li>Slurred speech</li><li>Unconsciousness</li><li>Seizures</li><li>Heavy sweating or hot, dry skin</li><li>Very high body temperature</li><li>Rapid heart rate</li></ul>
Heat exhaustion	<ul style="list-style-type: none"><li>Fatigue</li><li>Irritability</li><li>Thirst</li><li>Nausea or vomiting</li><li>Dizziness or lightheadedness</li><li>Heavy sweating</li><li>Elevated body temperature or fast heart rate</li></ul>
Rhabdomyolysis (muscle breakdown)	<ul style="list-style-type: none"><li>Muscle pain</li><li>Dark urine or reduced urine output</li><li>Weakness</li></ul>
Heat syncope	<ul style="list-style-type: none"><li>Fainting</li><li>Dizziness</li></ul>
Heat cramps	<ul style="list-style-type: none"><li>Muscle spasms or pain</li><li>Usually in legs, arms, or trunk</li></ul>
Heat rash	<ul style="list-style-type: none"><li>Clusters of red bumps on skin</li><li>Often appears on neck, upper chest, and skin folds</li></ul>

**Important First Aid Information:**

Employers and workers should become familiar with the heat-related symptoms. When any of these symptoms are present, promptly provide first aid. Do not try to diagnose which illness is occurring. First aid for heat-related illness involves the following principles:

- Call Security immediately if 911 needs to be contacted or the need to be paged (PVT) - PVT 35-6000 and POH 37-2019.
- Take the affected worker to a cooler area (e.g., an air-conditioned room).
- Cool the person immediately. Use active cooling techniques such as:
  - Remove outer layers of clothing, especially any heavy protective gear.
  - Place ice or cold wet towels on the head, neck, trunk, armpits, and groin.
  - Use a fan to circulate air around the person.
  - When possible, immerse the person in cold water or an ice bath, or use a safety shower to immediately saturate and cool the body.
  - Never leave a person with heat-related illness alone. The illness can rapidly become worse.
  - Confusion, slurred speech, or unconsciousness are all signs of heat stroke. When these types of symptoms are present, call 911 immediately and cool the worker with ice or cold water until help arrives.
- When in doubt, cool the person and have Security call 911 immediately.**
- Note:** New employees who are not accustomed to working in warm environments, are at an increased risk of heat-related illness. Especially during a person's first few days, absolutely all symptoms should be taken seriously. Workers who develop symptoms should be allowed to stop working. They should receive evaluation for possible heat-related illness.

**In Summary:** Now that we have a better understanding of heat-related illness signs, symptoms and basic first aid, the next module will focus on prevention. Prevention can be thought of as two stages: 1) knowing some of the factors that put a person at risk; and 2) knowing what steps you can take ahead of time to prevent illness. In this section we will discuss specific elements of the Perrigo Heat Stress Management program, and discuss the importance of acclimatization, temperature monitoring and Working in Heat Permits which determine work/rest ratios.

## Signs and Symptoms

### Perrigo Heat Stress Training

Module 3 - Prevention

In module 2 of this training series, we learned about some of the various heat-related illnesses that can affect your health. In this lesson we are turning our focus to **prevention** - what you need to watch for and what you can do.

We'll start by looking at some of the situations and conditions under which you're more likely to be at risk for a heat-related illness: the environment you're working in, the type of work you're doing, and your own physical condition - all three of these factors play a role in heat stress.

- Permit to Work in Heat - Work and Rest Intervals:**

A key component to prevention is understanding a variety of variables such as:

  - temperature of the environment
  - additional clothing or PPE being worn; and
  - the rate of work being conducted (Light/Moderate/Heavy).

The permit takes all these factors into account and establishes the proper work-to-rest ratios. These ratios (e.g., 45 minutes of work then 15 minutes of rest) are essential to preventing a heat related illness!

**So, when is a permit required?** The permit is to be used when employees are working in "adjusted wet bulb globe temperature" (WBGT) over 90 F for a maximum of one shift. An "adjusted wet bulb globe temperature" (WBGT) is the actual temperature. It is the measurement of felt temperature (how it feels on the body) and considers relative humidity, room temperature and any air movement. "Heat Stress Monitoring Stations" Have been placed on every floor in PVT and POH which will show what the WBGT is, at all times.

**Are there any other benefits to the permit?** Yes! The permit also identifies additional controls to reduce the potential for heat stress. Controls such as personal bio trackers, cooling garments and communication systems (e.g., buddy system, radio check-in etc.) are all important prevention tools.

To learn more about the Permit to Work in Heat EHS form # EHS-028 and when it is implemented, please see your supervisor, or contact EHS.
- Employee Acclimatization: What is it and why is it important?**

Employees who are not accustomed to working in warm environments, are at an increased risk of heat-related illness. Especially during a person's first few days.

  - Acclimatization is the process or result of becoming accustomed to a new climate or to new conditions. In our work environment at PVT/POH we are concerned about the hot conditions within the facility.
  - Employees who are newly hired, have not worked under comparable hot conditions, or have been away from work areas of hot conditions must follow the acclimatization procedures outlined on the "Employee Heat Stress Acclimatization Form" (EHS-029) to prevent any heat related illness. The acclimatization program will expose employees to work in hot conditions for progressively longer periods:
    - For experienced workers who have had previous experience with heat, the exposure time per day progression will be: 50% of the full shift for the first 2 days.
    - For new workers who will be similarly exposed, the exposure time per day progression will be: 20% of the full shift for the first 2 days.
- Other Prevention Strategies:**

What steps can you take ahead of time to prevent heat stress illnesses?

  - Drink plenty of cool water even if you're not thirsty during strenuous work or an electrolyte replacement fluid every 15-20 minutes
  - Take frequent breaks in the shade or indoors where there is A/C
  - Monitor your urine color to prevent dehydration, normal color should be pale yellow
  - Posted in all the restrooms.
  - Watch for symptoms of heat stress both in yourself and your co-workers
  - Limit your time in high heat - plan using the Permit to Work in Heat
  - Plan the best time of day to complete the work task: cooler time of the day
  - Allow yourself to become acclimated using "Employee Heat Stress A/C" environments. Follow a schedule to prevent heat-related illness.
  - Sufficient sleep and good nutrition are important for maintaining a high level of alertness and good health.
- In Summary:**

Now that we have a better understanding of how to prevent heat-related illness, the next module will focus on Response and Management.

## Management and Emergency Response

### Perrigo Heat Stress Training

Module 4 - Management and Response

In module 3 of this training series, we learned about some of the various heat-related illnesses that can affect your health. In this lesson we are turning our focus to properly managing heat stress and response.

Perrigo National's is committed to protecting employees from the hazards of hot conditions and to preventing heat-related illnesses at the workplace. In this training we will discuss what the responsibilities are for Managers, Supervisors, and Work Team Leads (WTLs) and how it relates to extreme temperature, humidity, and other heat-related factors. We will also discuss what "FireHUD Bio trackers" are, and how this wearable technology is assisting Perrigo and its teams in managing and preventing heat-related illnesses.

- What are Managers, Supervisors, & Work Team Leads (WTLs) Responsibilities?**

Management is responsible for monitoring weather and/or indoor ambient conditions at the worksite, monitoring worker physiological parameters through observing employees for signs of heat stress and use of wearable technology ("bio trackers" with alarm setpoints and real-time alerts to remote mobile devices), adjusting work schedules as necessary, ensuring employees are acclimated to the heat and using the "Employee Heat Stress Acclimatization Form" (EHS-029) when needed, completing the Permit to Work in Heat (EHS-028) when conditions exceed 90°F WBGT, encouraging employees to increase exposure to heat stress, take periodic rest breaks when working in hot conditions, and contacting emergency services if necessary by dialing PVT 35-6000 and POH 37-2019.
- What are Employees Responsibilities?**


Employees are responsible for monitoring their own personal risk factors for heat-related illness and taking appropriate steps to prevent heat stress, including frequent consumption of water and other acceptable fluids (i.e., electrolyte replacements), utilize personal protective equipment (PPE) and wearable technology ("bio trackers" with alarm setpoints and real-time alerts to remote mobile devices), and follow established work/rest break intervals. In addition, employees may be paired with a "buddy" to monitor for signs and symptoms of heat stress. Employees are required to notify their Supervisor or WTL immediately if they (or any team members) are experiencing any signs or symptoms of heat stress.
- FireHUD Bio Trackers: Real-Time Biological Monitoring of Personal Heat Stress**

FireHUD Bio trackers are personal wearable monitoring devices that monitor the user's physiological stress and will alert employees and their Supervisors/WTLs to potential heat stress illness. This method of monitoring allows for early predictive/proactive alerting to alert employees and management that an employee is approaching the point of heat stress so immediate action can be taken before it becomes an emergency.

**What are the FireHUD Bio trackers tracking?** Built-in sensors on the FireHUD Bio Trackers wearable devices, monitor the following biological parameters in real-time:

  - Heart rate** (beats per minute - bpm)
  - Core body temperature** - is the temperature of the internal organs, such as the liver, located deep within the body. The human body maintains its core temperature within a very narrow range of 97.7-101.3 °F.
  - Exertion (%)** - combines each user's heart rate, core body temperature with individual characteristics such as height, weight, age, resting heart rate, and resting core body temperature.
  - %HRLV (Heart Rate Limit Value)** - compares an individual's current heart rate with their maximum sustainable heart rate.

For each parameter, alarm setpoints are established based on manufacturers recommendations and industry best practices.



**When are the FireHUD Bio trackers required to be worn?** Any employees who are working in heat including, but not limited to: ALL dryer floors, processing or outside, are **REQUIRED** to wear "bio trackers" which are worn on the upper arm underneath clothing (directly contacting skin). EHS has purchased individual straps for the FireHUD devices so each employee can receive their own strap for hygienic purposes. If they choose (please see your supervisor or EHS for a strap). Each device will still need to be sanitized when returned at the end of your shift and placed on the charging cradle.

**What happens when a device sends an alarm and who responds?** When a bio tracker goes into alarm, Managers, Supervisors and EHS are all notified via text message on their mobile device and the employee **MUST** be immediately removed from heat and allowed adequate time to rest, hydrate and recover before continuing work (note: this is in addition to the required work/rest breaks as outlined on the "Permit to Work in Heat" (EHS-028)).

- In Summary:**

Occupational heat stress and heat related illnesses are a very serious matter. It's important for employees to understand the need to replace fluids and recognize the signs of dehydration, fainting, heat cramps, heat exhaustion, and heat stroke so immediate action can be taken, and emergency services can be contacted. We are all responsible to do our part and utilize the proper tools to prevent heat stress and heat related illnesses.

## Training ("Micro Learnings")

## Delivered face-to-face by Supervisors & electronically

## "Bite-sized" bits of information spread out over a few weeks



# Heat Stress Prevention – Engineering Controls

## Building Cooling Projects - Completed

- **HVAC adjustments**
  - New/modified wall mounted exhaust fans at each elevation
- **Air movers**
  - Cooling/Heating/Dehumidification system capable of processing up to 32,000 cfm supplying the Dryer Tower
- **Significant Capital Investment to Reduce Risk**

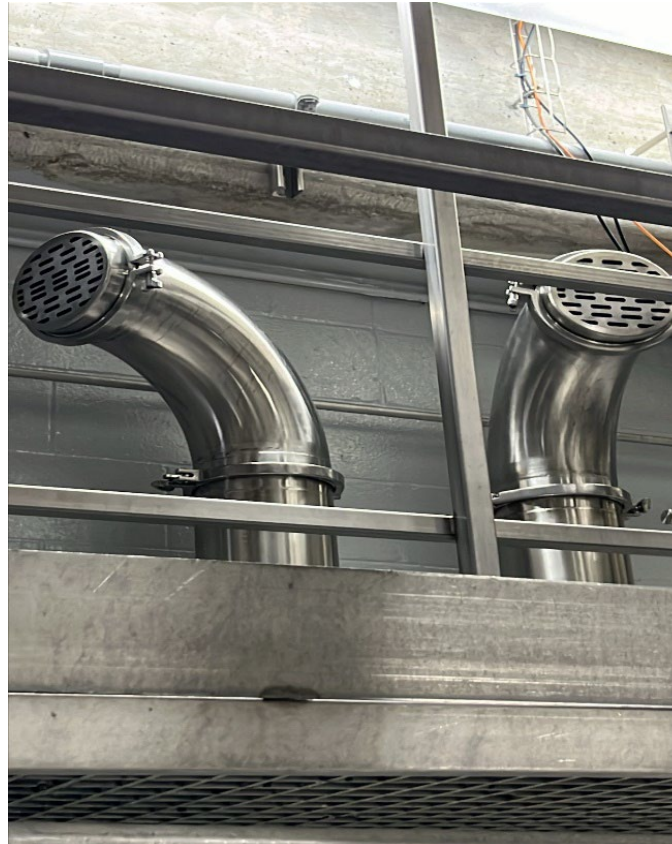


# Heat Stress Prevention – Engineering Controls

## 2<sup>nd</sup> Floor:



Cold Air Intake



Directional Cold Air Intakes



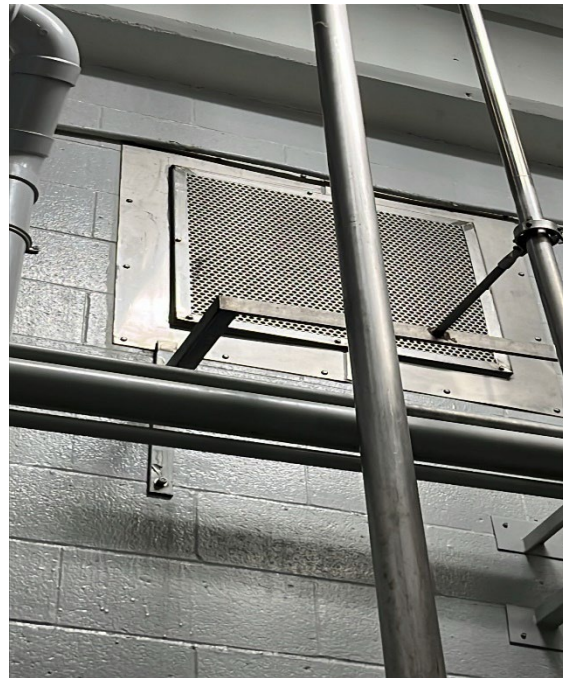
Cooling Room

# Heat Stress Prevention – Engineering Controls

## 3rd Floor:



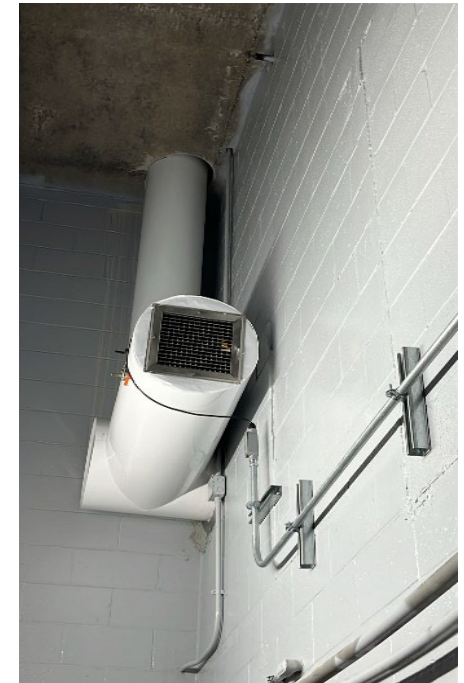
Lower Cold Air Intake



Upper Floor Exhaust



Cool Room



Cool Room with Intake

## Heat Stress Prevention – Administrative Controls

- Written Program revised to reflect new controls
- WBGT monitors installed
- Established “Permit to Work in Heat”
- Signage/Communication in place
- Trainings conducted

## WBGT Monitors



# Permit to Work

## Permit to Work in Heat – Perrigo Vermont (PVT) & Ohio (POH)

**Guidance:** This permit is to be used when employees are working in adjusted heat over 90° for a maximum of one shift. In addition to this permit, employees shall utilize wearable technology with predictive alarming ("Bio Trackers"). All employees working in heat shall follow the water intake recommendations found in the PVT/POH "Heat Stress Prevention Plan." If an employee is observed exhibiting signs of heat stress, the employee must be immediately removed from working in heat even if the work interval is not exceeded. Summation emergency services immediately if heat stroke is suspected (PVT: 35-6000, PCH: 37-8019).

Location(s): Driver Date/Time: 6-15-22 06:30 Task(s) Being Performed in heat: Walk Thru

**Step 1a:** Determine the WBGT temperature in degrees Fahrenheit (F): WBGT: 96.9 F (from monitor)

**Step 1b:** Note: If WBGT is not available, use the "NOAA's National Weather Service Heat Index" (page 2)

**Step 2:** Determine the clothing adjustment factor (add to WBGT): Clothing Adjusted WBGT: 96.9 F

Applicable	Clothing Worn	Clothing Adjustment Factor (CAF)
Yes/No	Cotton work clothes (long sleeves & pants)	No adjustment
Yes/No	Cloth (woven material) coveralls	No adjustment
Yes/No	Double-layer woven clothing	Add 3 C or 5.4 F
Yes/No	SMS polypropylene coveralls	Add 0.5 C or 0.9 F
Yes/No	Polyolefin coveralls (i.e. Tyvek)	Add 1 C or 1.8 F
Yes/No	Vapor-barrier coveralls, chemical resistant suit	Add 11 C or 19.8 F

Adapted from: ACGIH "2017 TLVs and BEIs" Table I

**Step 3:** Determine the metabolic work rate:

Applicable	Category	Metabolic Rate (W)	Examples
Yes/No	Light	115	Sitting, standing, light arm/hand work and light walking
Yes/No	Moderate	180	Moderate lifting, mopping/cleaning, "punching" MW dryer
Yes/No	Heavy/Very Heavy	300 to 520	Heavy manual material handling, unjamming equipment, manual rework, etc.

Adopted from: ACGIH "2017 TLVs and BEIs" Table 3

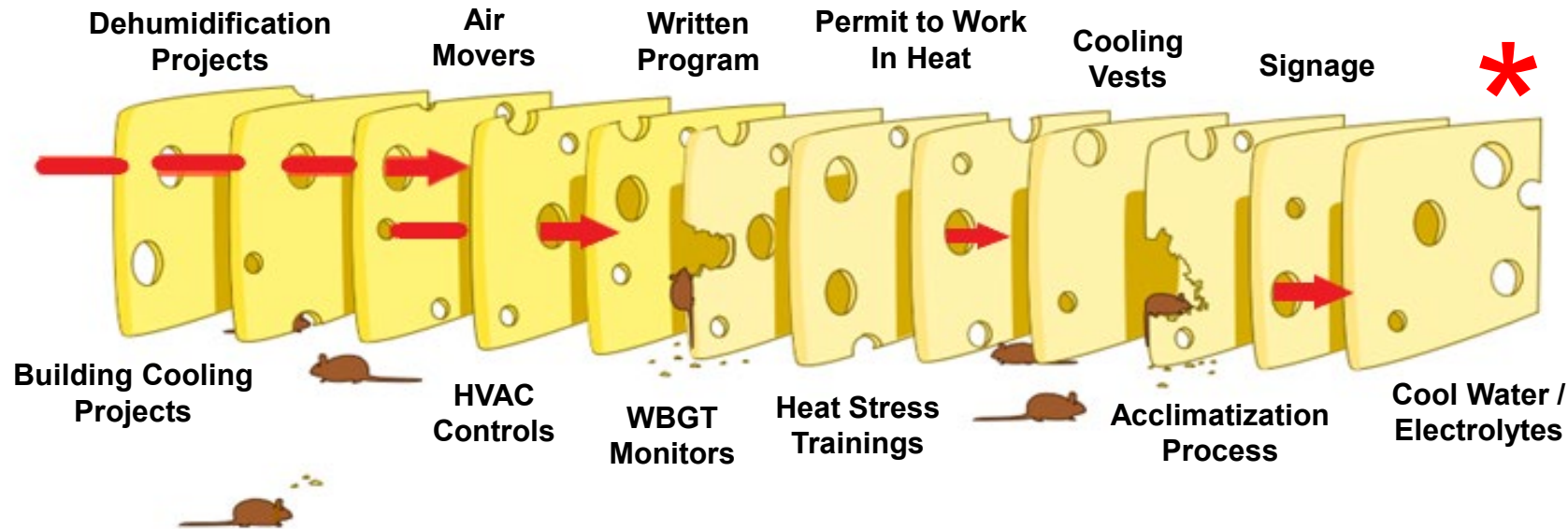
**Step 4:** Determine appropriate work/rest intervals and additional controls.

Adjusted Temperature (F)	Light Work (min/wk/rest)	Mod. Work (min/wk/rest)	Heavy Work (min/wk/rest)
80 to 90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30 (Cooling Vests Required)
101	Normal	40/20	30/30 (Cooling Vests Required)
102	Normal	35/25	25/35 (Cooling Vests Required)
103	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
104	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
105	Normal	25/35 (Cooling Vests Required)	15/45 (Cooling Vests Required)
106	45/15	20/40 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
107	40/20	15/45 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
108	35/25	Caution! Cooling Vests & Additional	Caution! Cooling Vests & Additional

# Heat Stress Prevention – What was missing?

## The Swiss Cheese Model of Heat Stress Layers of Control

NIOSH Hierarchy of Controls: Engineering, Administrative, PPE



New  
Technology

Each control (slice) has imperfections (holes) which change in size, number and position depending on how the control is rolled out. Multiple layers improve success.



Missing: Customization of heat stress prevention down to the individual



# The Benefits of Technology in Preventing Heat Stress

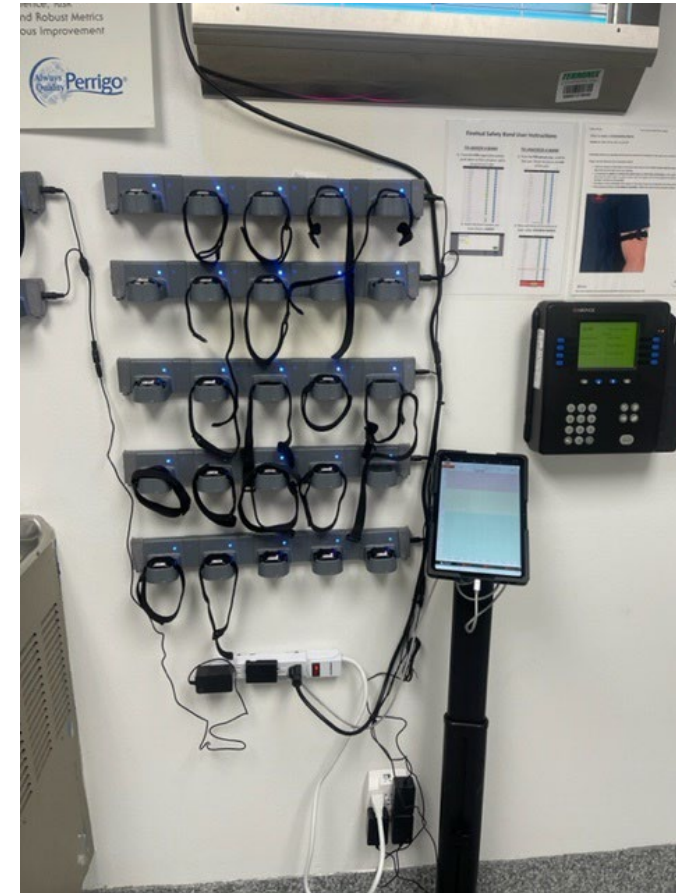
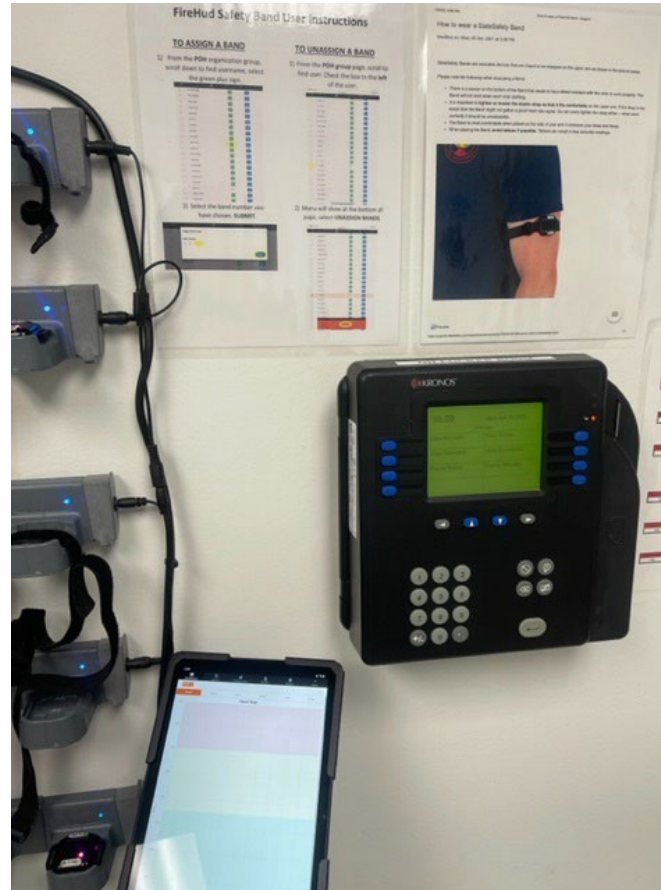


# Slate Safety Wearable Pilot

## Initial Pilot 2022

- A total of 85 Slate Safety devices were purchased initially
- Primary users of the system is Production, QA, Sanitation and Maintenance, but can be used by any employee entering high heat work areas
- Expectation is employees wear devices when working on the dryer floors, processing or any other areas where higher temp/humidity environment exist

\*\* Devices are numbered. After putting on the device, you register the device



Locker Room Location

# Establishing Alarm Setpoints

## Alarm Setpoints:

<i><b>Alarm Alert</b></i>	<i><b>Threshold</b></i>
Exertion Rate	Exertion greater than 80 % for 3 minutes
Core Body Temperature	Core Temp greater than 102 °F for 3 minutes
Heart Rate (BPM)	Heart Rate greater than 170 - age BPM for 5 minute
HRLV – Heart Rate Limit Value	HRLV greater than 120 % for 5 minutes

## What is exertion?

Exertion is a metric, measured as a percentage, that combines each user's heart rate and core body temperature with individual characteristics such as height, weight, age, resting heart rate, and resting core body temperature.

**Below 70%:** low or moderate exertion.

**Between 70% and 90%:** high exertion, the user may need attention if this exertion rate is sustained for a long period of time.

**Above 90%:** very high exertion, the user is in danger of overexertion.

# Establishing Alarm Expectations



## Alert Expectations:

- Stop performing the task and leave the elevated temperature work area IMMEDIATELY!
- Proceed to a cool area (i.e. control room, break room, cafeteria, etc.) and take a break
- Cool water and electrolyte replacements available to all staff
- Immediately notify a Supervisor if identifying that self/co-worker could be suffering from heat stress

### Biometric Alert Thresholds



A Biometric Alert notification can be used to notify the wearer and alert contacts that they should slow down or stop work. A notification will be triggered after the wearer meets any of the thresholds set in the table below.


**Note:** SlateSafety cannot guarantee the effectiveness of Biometric Alert or Return-To-Work thresholds. It is the responsibility of the organization to implement thresholds that follow their safety guidelines. [Read more here.](#)

					New Alert Threshold +
Condition					Severity
	Heart Rate ▾	Greater Than	120 BPM ▾	For 1 minutes ▾	High ▾
	Core Temp ▾	Greater Than	100.8 °F ▾	For 1 minutes ▾	High ▾

### Return-To-Work Thresholds

A Return-To-Work notification can be used to notify the wearer and alert contacts that they are okay to return to work. A notification will be triggered after the wearer triggers at least one Biometric Alert and then meets all Return-To-Work thresholds set in the table below.

					New Return-To-Work Threshold +
Condition					
	Heart Rate ▾	Less Than	100 BPM ▾	For 5 minutes ▾	
	Core Temp ▾	Less Than	99.5 °F ▾	For 5 minutes ▾	

 Tap Alert 7/8/2022, 3:24:59 PM ✕

Roberto Andaya has sent a request for help via double tapping their device.

# Program Enhancements 2023



The vision of the Korey Stringer Institute (KSI) is to be a world-renowned leader in developing and disseminating practical strategies to prevent sudden death in sport, military, and laborers, promote health and safety best practices in the physically active, and optimize performance.



## Continuous Improvement

- Started Working with Korey Stringer Institute(KSI) to evaluate implementation of our heat stress program
- Evaluated data collection and validity of alerts and warnings
- Audited controls and systems to see if they were working
- Program improvements and development of additional tools and guidance
- Training

SLATE SAFETY

Perrigo

Dashboard

Live

History

Organization

Insights

Exports

Show:

Bands

Sites

Groups

Locations

Sort by:

Core Temp

POH Blending Dump Station Ohio	-	Temp 65.5 °F	Humidity 41%	Heat Index 63.7 °F	eWBGT 56.9 °F
POH CIP Kitchen Ohio	-	Temp 83.4 °F	Humidity 19%	Heat Index 80.8 °F	eWBGT 66.5 °F
POH Dryer Tower 2nd Floor Ohio	1 online	Temp 80.5 °F	Humidity 20%	Heat Index 79.1 °F	eWBGT 64.6 °F
<div><div>Tony Bandedo</div><div><div>21% exertion</div><div>99.5 °F</div><div>80 °F air</div></div><div><div>95 BPM</div><div>72% hrly</div><div>20% hum</div></div><div><div>27 hmx</div></div></div>					
POH Dryer Tower 3rd Floor Ohio	-	Temp 77.5 °F	Humidity 21%	Heat Index 76 °F	eWBGT 62.7 °F
POH Dryer Tower 4th Floor Ohio	-	Temp 95.1 °F	Humidity 13%	Heat Index 90.3 °F	eWBGT 73.1 °F
POH Evaporator Room Ohio	1 online	Temp 83.9 °F	Humidity 25%	Heat Index 81.5 °F	eWBGT 68.4 °F
<div><div>Sean Martin</div><div><div>8% exertion</div><div>99 °F</div><div>84 °F air</div></div><div><div>80 BPM</div><div>56% hrly</div><div>25% hum</div></div><div><div>29 hmx</div></div></div>					
POH HTST Ohio	-	Temp 79.3 °F	Humidity 20%	Heat Index 77.9 °F	eWBGT 63.8 °F
POH QC03 Ohio	2 online	Temp 75.1 °F	Humidity 23%	Heat Index 73.5 °F	eWBGT 61.4 °F
<div><div>Jacob Taylor</div><div><div>23% exertion</div><div>99.4 °F</div><div>75 °F air</div></div><div><div>102 BPM</div><div>72% hrly</div><div>23% hum</div></div><div><div>24 hmx</div></div></div> <div><div>Bryan Eades</div><div><div>20% exertion</div><div>99.1 °F</div><div>75 °F air</div></div><div><div>105 BPM</div><div>88% hrly</div><div>23% hum</div></div><div><div>24 hmx</div></div></div>					

2024-2025 Upgrades

SLATE SAFETY

BAND V2

Physiological monitoring for heat-stress prevention

BEACON V2

Environmental monitoring for heat stress

The Problem

Workers miss the warning signs of heat stress

Supervisors are unsure who needs rest

Organizations pay for injuries and have no actionable data

The Solution

Workers manage their own work/rest cycles

Supervisors can monitor and prevent overexertion

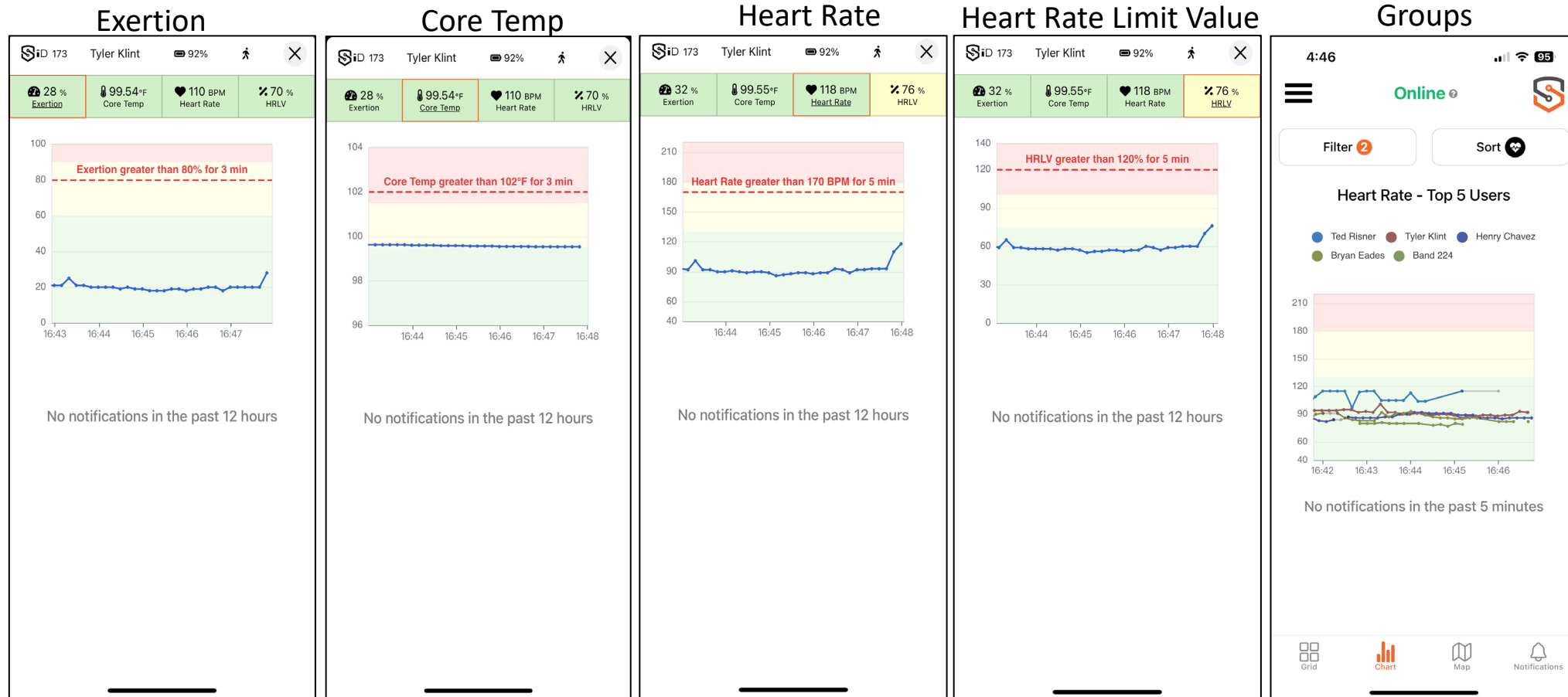
Organizations keep their workforce safe and save money

Perrigo

# Heat Stress Prevention – Mobile App

## Real Time Monitoring

- Mobile App
- Text Alerts
- Email Alerts
- Desktop Dashboard
- Desktop Analytics

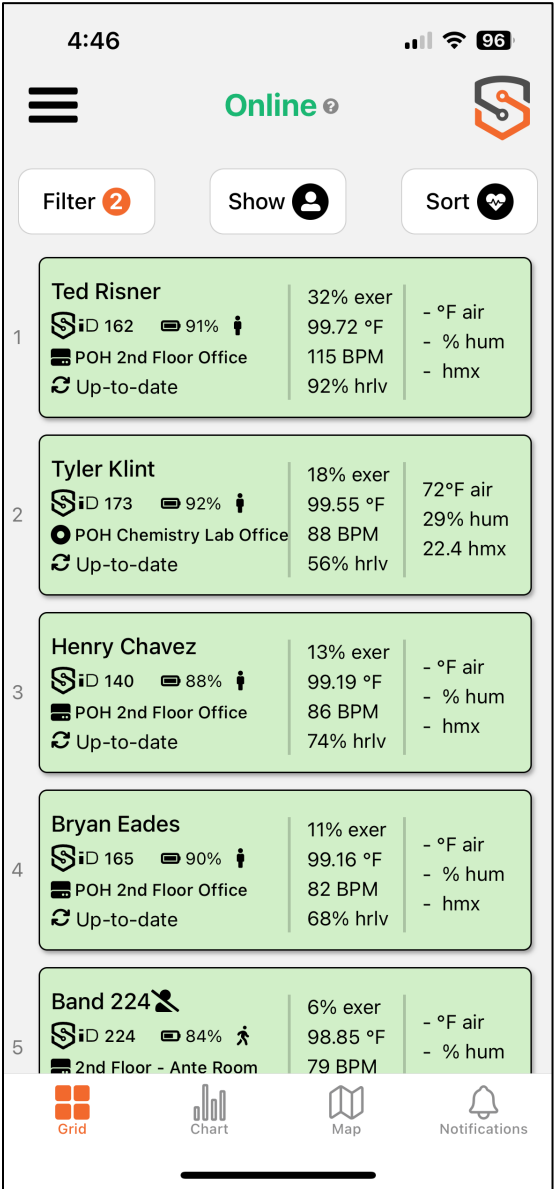


# Perrigo Monitoring People & Environment

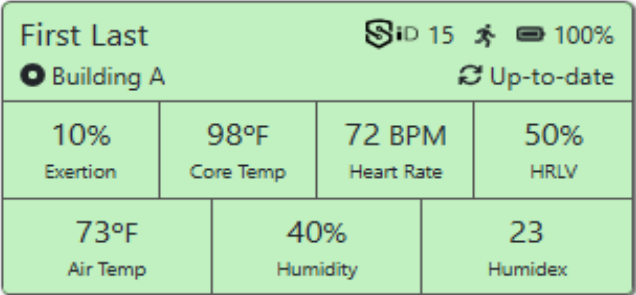
## Chart Intensity Levels

- Charts and diagrams across the application have color coded sections to indicate the intensity level of the user or beacon's activity.
- User or beacon is considered within an intensity level if their current measurements are above the established floor.
- Change the floors used for each intensity levels

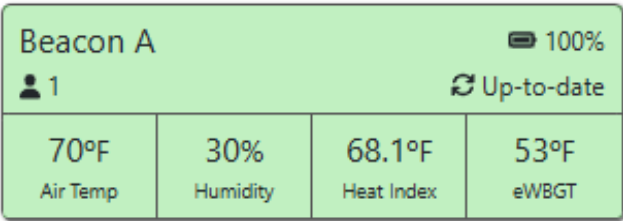
Biometric Type	<div>Moderate Intensity</div>	<div>High Intensity</div>
Core Temp	99.5 °F	101.5 °F
Exertion	60%	90%
Heart Rate	130 BPM	180 BPM
HRLV	75%	100%
HRV	60ms	30ms
VO2	30 mL/kg/min	45 mL/kg/min



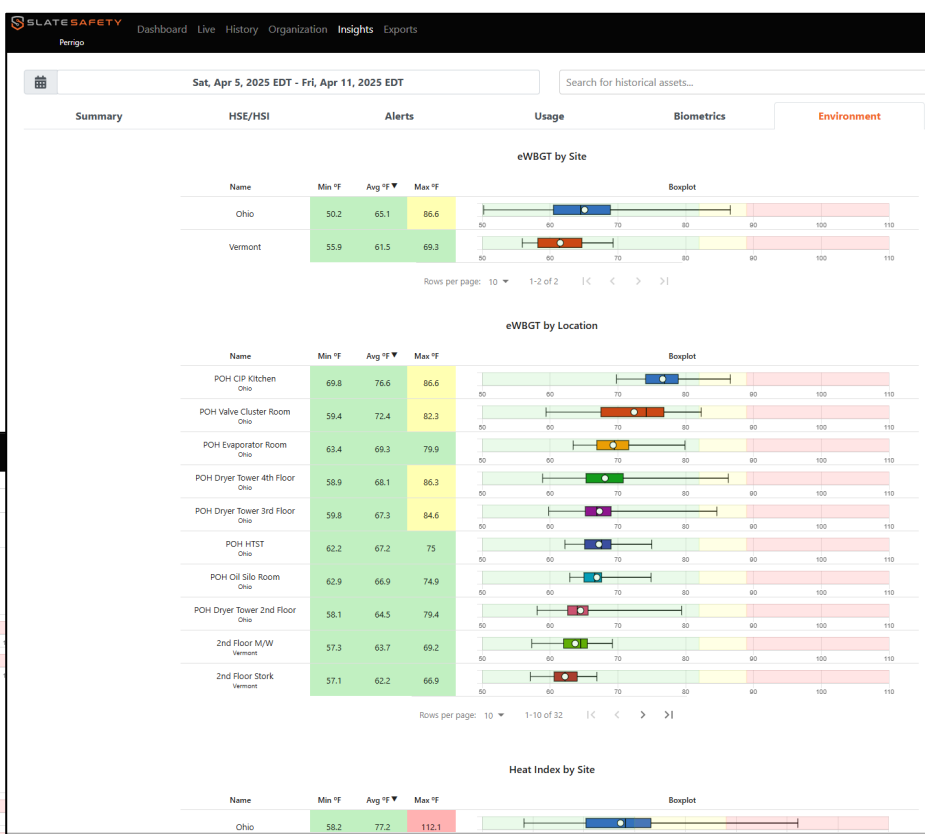
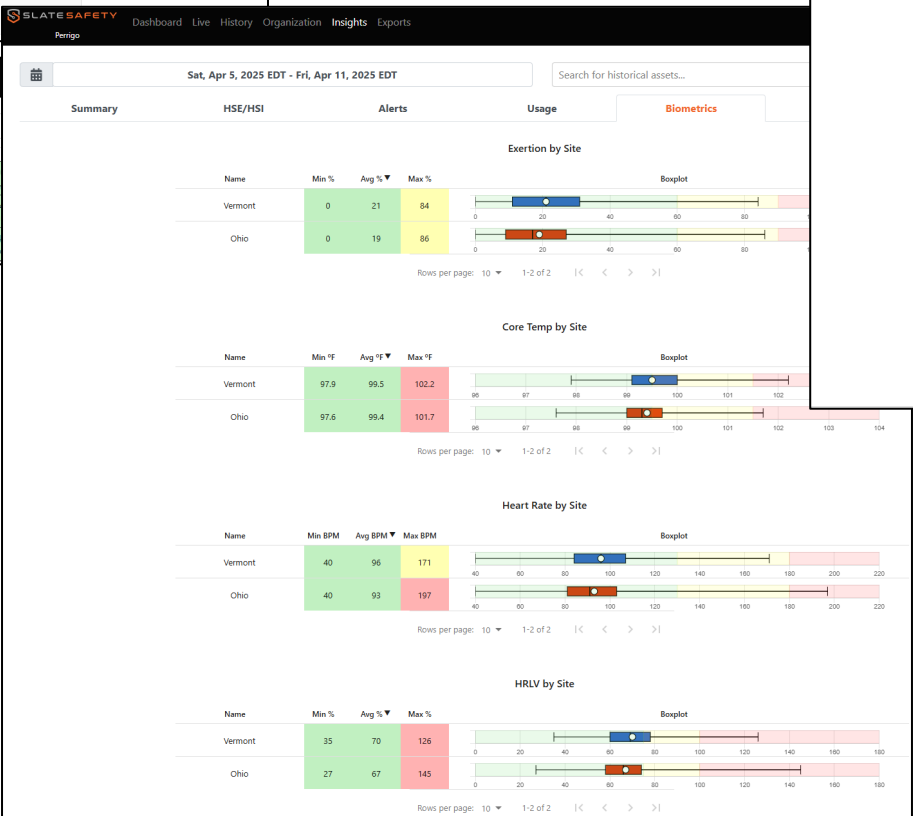
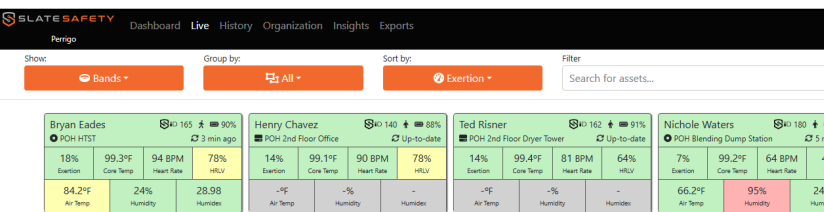
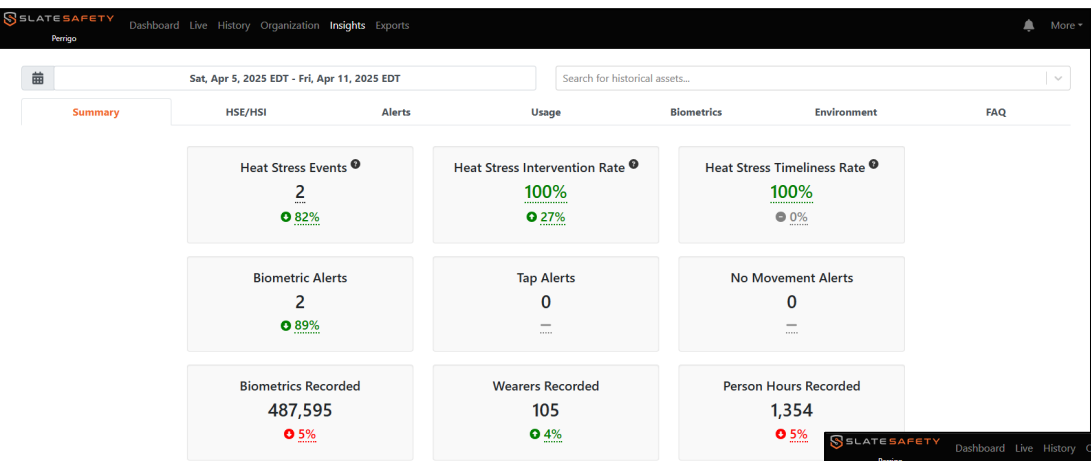
## Live Page Band Cards



## Live Page Beacon Cards




# Heat Stress Prevention – Data



## Heat Stress Prevention – System Integration

## Data Tracking and Integration

- Email Notifications
- Tracking Corrective Actions
- Closed Loop System
- Verification of Controls
- Data Available in Data Warehouse
- Power BI Reporting and Dashboards




Good Catch

View Good Catch - Full Form #69052

Ohio (POH) | Perrigo

Good Catch #69052

General Report Details

Type ⓘ	Heat Stress Alerts	Dept	Production
Date	31-Mar-2025	Time ⓘ	10:15 PM
Building	POH	Shift	Third
Observer(s) ⓘ	Louis LeVan	Core Activity ⓘ	Assembly Operations
At risk behavior/Condition ⓘ		Immediate/Direct Cause ⓘ	
Description ⓘ	Band 177 had a core temp that exceeded 102Â°F for 3 minutes.	Recommendations for Follow-up ⓘ	
Actions Taken To-Date	Supervisor checked on operator. Operator moved to cool area. Temperature returned to normal. Operator resumed working	Contact Information ⓘ	
Equipment		Multiple CC ⓘ	
Workstation	Blend Room	pSIF AI Advisor Recommendation	 No (No similar incident results)
Business Override pSIF AI Advisor Recommendation			

File Attachments

No attached files

Follow-up Details

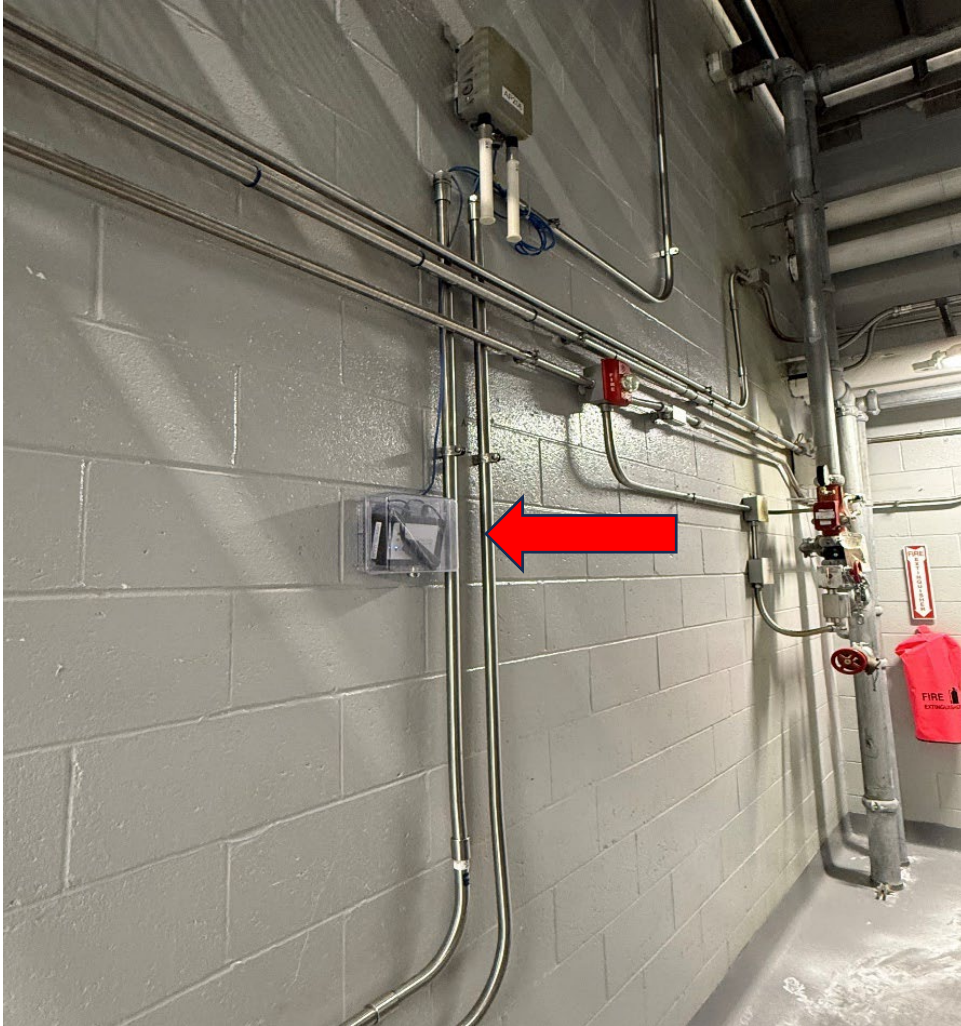
Status	Closed	Assigned To ⓘ *	Karl Halley
Closure Category ⓘ		Closure Due Date	01-Apr-2025
External System ⓘ		External System ID ⓘ	
Closed Date <span>Required if closed</span>	01-Apr-2025	Related Job Function ⓘ	Blending Operator
Closure/Work-in-Progress Comments <span>Required if closed ⓘ</span>	Monitor operator(s) while performing task		

Submitted By

Submitted By	SlateSafety System	Date Reported ⓘ	31-Mar-2025 10:15 PM
--------------	--------------------	-----------------	----------------------

# Program Enhancements 2024-2025

- Gateways named with building location to communicate with Bands and Beacons

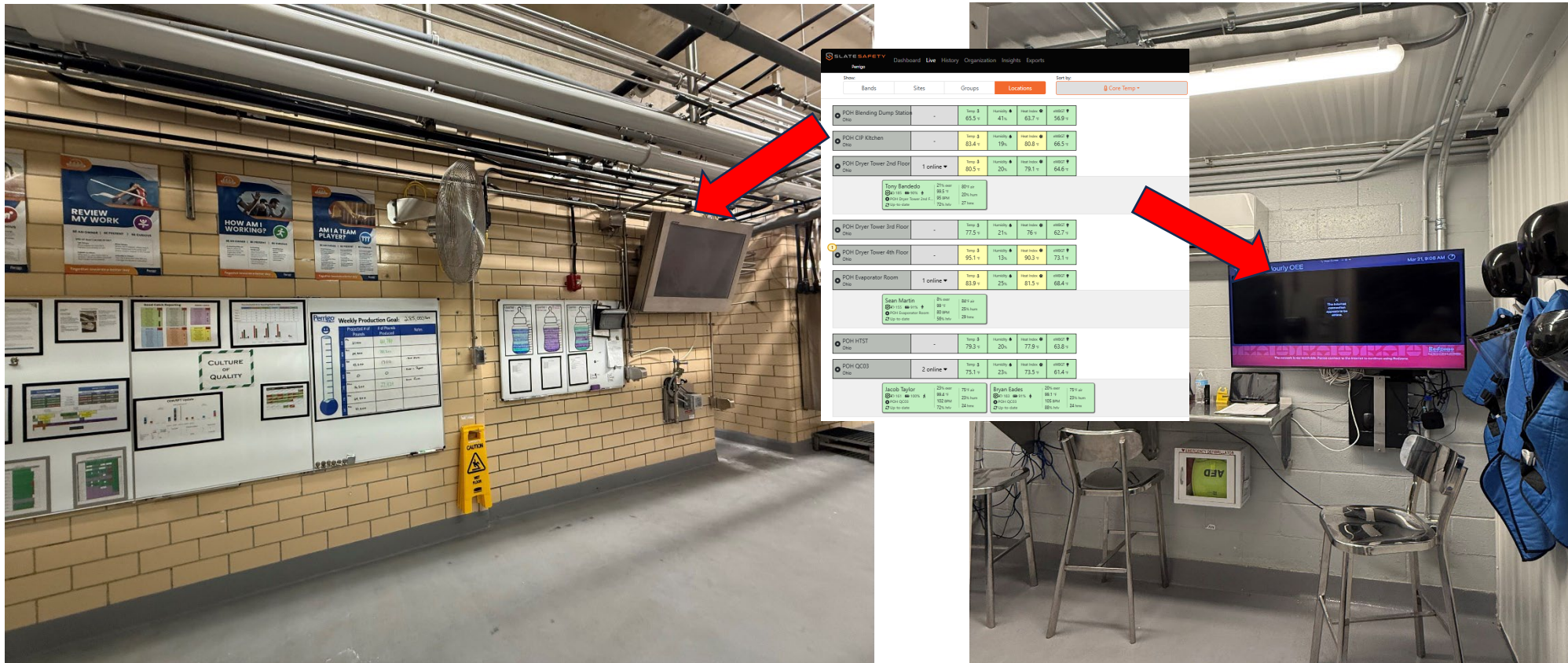


- NEW – Installed a Slate Safety V1 Beacon to every potential high heat area of the site



# Program Enhancements 2024-2025

- NEW – Plan in 2025 is to broadcast the Slate Safety Heat Stress Prevention data live on the new TV's installed to help our team plan



# Program Enhancements 2024-2025

- NEW - Added Cool Room's on 3<sup>rd</sup> Floor and 4<sup>th</sup> Floor of our Dryer Tower



- Current - 2<sup>nd</sup> Floor Cool Room and our Cool Vests



# Opportunities

# Opportunities - Implemented

## **Lone Worker**

- Alerts if employee is not moving
- Alerts if employee sustains an impact (i.e. fall or vehicular incident)
- Alerts if an employee is experiencing a potential personal medical condition.

## **Automated Event Triggers**

- Integration with Perrigo EHS Management System Software to automatically generate Good Catch reports

## **Temperature**

- Monitoring temperature and integration of WBGT correlation into Bluetooth devices into software platform for real time temperature monitoring

## ***Currently Under Investigation:***

### **Acclimatation**

- Determine acclimatation based upon monitoring data and not time based



**Questions?**



TM

Learn more at [www.perrigo.com](http://www.perrigo.com)