

Ag Health 101

HEAT ILLNESS PREVENTION

UNIT 2



CHAPTER DISCUSSION QUESTIONS

CHAPTER 1: HOW WE REGULATE HEAT



Describe how you feel when first working outdoors during a hot summer. Reflect on how active you are (or aren't) and how you accommodate activity to hot and/or humid weather. Did you notice it was less of an issue later in the summer?

CHAPTER 2: TYPES OF HEAT ILLNESS



How would you coach a worker about their risk of developing heat illness?

CHAPTER 3: PREVENTION (MONITORING & PREPARATION)



Identify a few heat stress/safety smartphone apps and test them. Identify one or two that you think would work in communities you serve and that give you/workers specific heat protection guidance. Discuss what you like about it and what maybe you wish it also had.

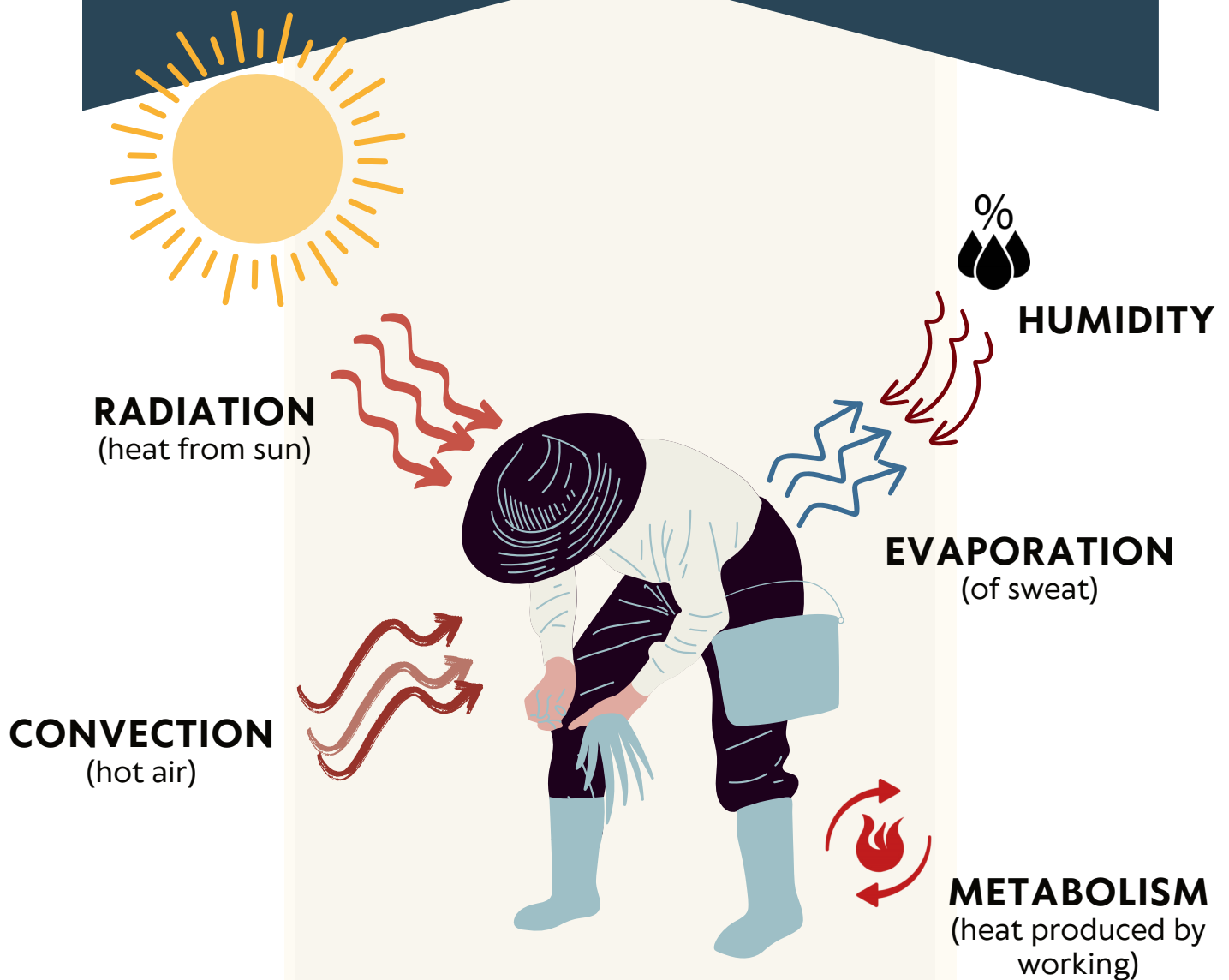
CHAPTER 4: HYDRATION



We ask that you take a look at your urine and see where you are on the color charts we are providing to you. What is a good plan to recommend you do this? What would a morning check tell you compared to an after work check?

CHAPTER 1

HOW WE REGULATE HEAT



The human body has a feedback mechanism to control mechanisms to keep our core body temperature within its normal operating range (98.6 °F +/-).

CHAPTER 2

TYPES OF HEAT ILLNESS

HEAT RASH

Tiny red blisters on affected area

Heavy sweating

FIRST AID

- Cool skin in affected area(s)
- Avoid heat that caused rash

HEAT CRAMPS

Heavy sweating

Thirst

Fatigue

Painful muscle cramps or spasms

FIRST AID

- Move to shade or air conditioning
- Drink fluids with electrolytes (like juice or sports drinks)
- Rest

HEAT EXHAUSTION

Faint or dizzy, headache

Excessive sweating

Weak or rapid pulse

Nausea & vomiting

Weakness, muscle cramps or spasms

FIRST AID

- Move to shade or air conditioning
- Remove or loosen clothing
- Give sips of water if fully conscious
- Take a cool shower or use a cold compress
- Seek medical help if symptoms don't improve

HEAT STROKE

Throbbing headache, confusion

Seizures, loss of consciousness

No sweating; skin is hot, red, dry

Strong rapid pulse

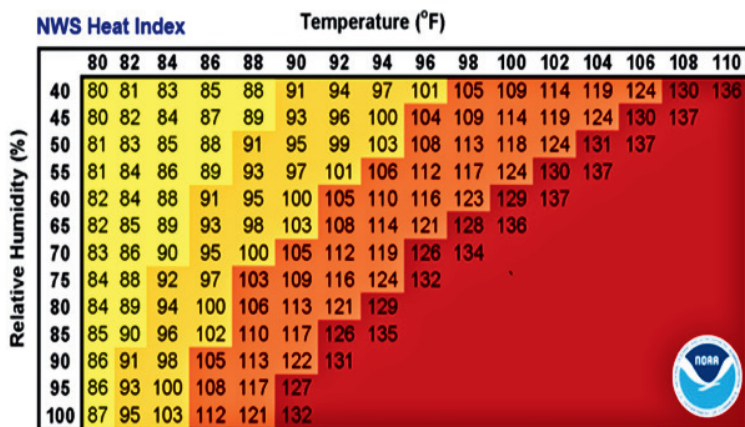
Body temperature above 103F

FIRST AID

- Take immediate action to cool the person until help arrives
- Move to shade or air conditioning
- Remove or loosen clothing
- Give water if able to swallow
- Apply cool cloths or ice packs

CHAPTER 3

PREVENTION: MONITORING & PREPARATION



When humidity increases at a given temperature, the heat index also increases.

Heat indices are color coded to provide four levels of risk.

HEAT STRESS INDEX

CAUTION

Indices in the 80's (°F)

Indicates workers may feel fatigued with prolonged physical activity in these types of conditions.

EXTREME CAUTION

Indices range from 88 to 102 (°F)

Indicates possibility of sunstroke, heat cramps, and heat exhaustion with prolonged exposure.

DANGER

Indices range from 104 to 127 (°F)

Sunstroke, heat cramps, and heat exhaustion indicated as likely outcomes of these conditions.

EXTREME DANGER

Indices of 128 (°F) or higher

Indicates a high likelihood of heat stroke outcomes in these conditions.

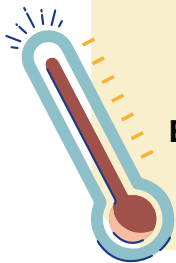
WEATHER PRECAUTIONS TERMINOLOGY

EXCESSIVE HEAT OUTLOOK - Informs the public of a possible heat event in 3-7 days

HEAT ADVISORY - Typically issued within 12 hours of an extremely dangerous condition, with precautions to minimize illness (lowa: >100°F for 2+ days with nighttime low of >75°F)

EXCESSIVE HEAT WATCH - Warns of a pending *excessive heat event* within the next 1-3 days

EXCESSIVE HEAT WARNING - Issued within 12 hours of the onset of an extremely dangerous condition (lowa: >= 110°F for 2+ days with nighttime low of >=75°F)

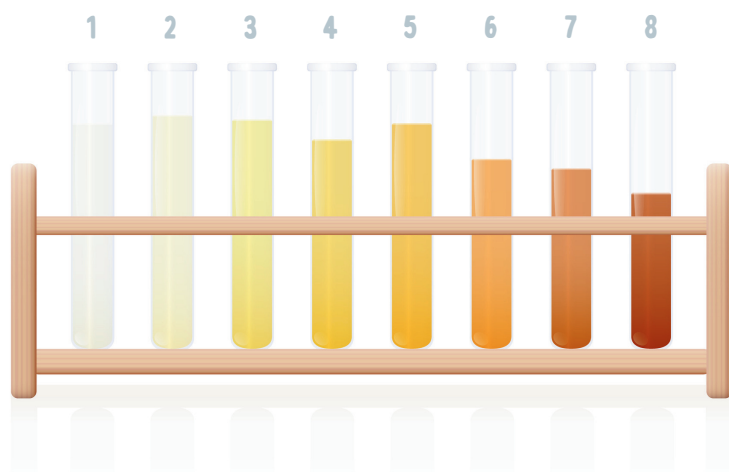


CHAPTER 4

HYDRATION



URINE COLOR CHART



1 OVERHYDRATED

May result in electrolyte depletion. Reduce water intake or substitute some water intake with electrolyte fluids.

2 GOOD

Well hydrated. Continue to consume water at the recommended amounts.

3 FAIR

Acceptable hydration level. A little more liquid consumption wouldn't hurt throughout the day.

4 LIGHT DEHYDRATION

Slightly increasing water consumption throughout the day would be beneficial.

5 DEHYDRATED

Water consumption needs improvement.

6 DEHYDRATED

More fluids need to be consumed.

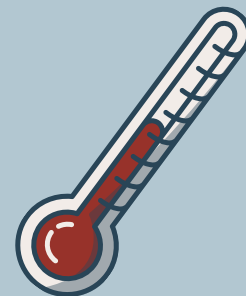
7 VERY DEHYDRATED

Not an emergency, but fluid intake must be increased or risk of severe dehydration symptoms is higher.

8 SEVERE DEHYDRATION

See Doctor

Heat Illness RESOURCES



1

HOW WE REGULATE HEAT

View this article to look at human temperature regulation:

- Cramer, Gagnon, Laitano, & Crandall. (2002). Human temperature regulation under heat stress in health, disease, and injury. *Physiological Reviews*. 102(4): 1579-2034.
- <https://www.journals.physiology.org/doi/epdf/10.1152/physrev.00047.2021>

2

TYPES OF HEAT ILLNESS

- The Mayo Clinic has great resources for each of the four heat illnesses detailed in this chapter.
- Also, visit the CDC's FAQ about extreme heat: <https://www.cdc.gov/disasters/extremeheat/faq.html>
- Details on high-risk populations affected by extreme heat: <https://www.cdc.gov/disasters/extremeheat/specificgroups.html>

3

PREVENTION: MONITORING & PREPARATION

- View heat stress index information on the National Weather Service website: <https://www.wpc.ncep.noaa.gov/html/heatindex.shtml>
- You can navigate from there to find the definitions of warnings in the recording, or navigate directly here: <https://www.weather.gov/safety/heat-www>
- OSHA's Heat Safety Tool (app) is discussed here: <https://www.osha.gov/heat/heat-app>
- A poster from OSHA on prevention and protection can be found at: https://www.osha.gov/sites/default/files/publications/3431/wksiteposter_en.pdf

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HYDRATION

- OSHA Urine Cards: <https://www.osha.gov/heat/general-education>
- Hydration Recommendations: <https://www.blogs.cdc.gov/niosh-science-blog/2011/08/12/heat-2/>

View these links for additional resources and information on the content presented in this unit.