ICW GROUP
Insurance Companies

Beat the Heat & Keep Your Cool: INDOORS

Our presentation will begin shortly…

ICW GROUP
Insurance Companies

Beat the Heat & Keep Your Cool: INDOORS

WHAT YOU NEED TO KNOW TO PREVENT HEAT ILLNESS

TODAY'S PRESENTER

Mark Yeck

Technical Specialist

Risk Management Services

ICW GROUP
Insurance Companies

Heat Affects Many Industries

Fatality

- California asbestos remover
- Engaged in asbestos remediation
- Suffered heat illness and died

Heat Affects Many Industries

Fatality

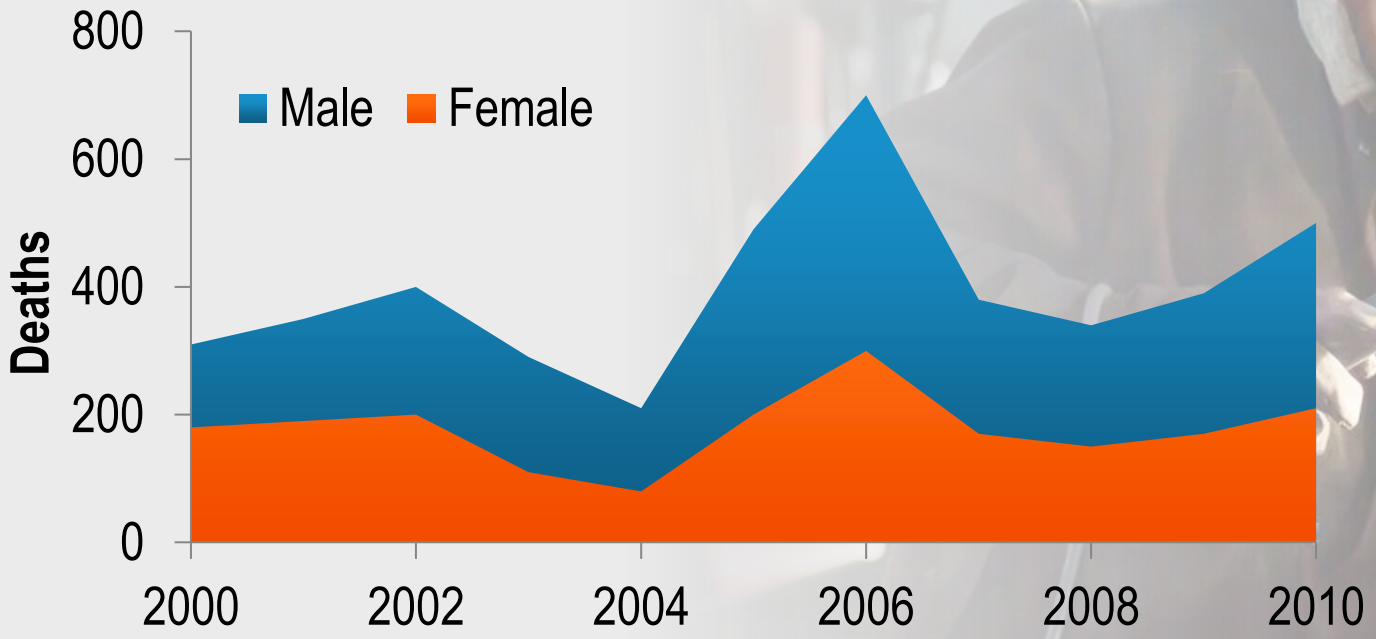
- New York manufacturer employee
- Several hours on conveyor line
- Suffered heat illness and died

Heat Affects Many Industries

Fatality

- Industrial cleaning crew temporary worker
- After leaving work site
- Collapsed and died from heat stroke

US Heat Stroke & Illness Deaths



ICW GROUP
Insurance Companies

Today's Topics

- What is indoor heat illness?
- What regulations mean to you
- FLS framework for heat illness
- 10 tips to beat workplace heat
- Helpful resources

ICW GROUP
Insurance Companies

Today's Topics

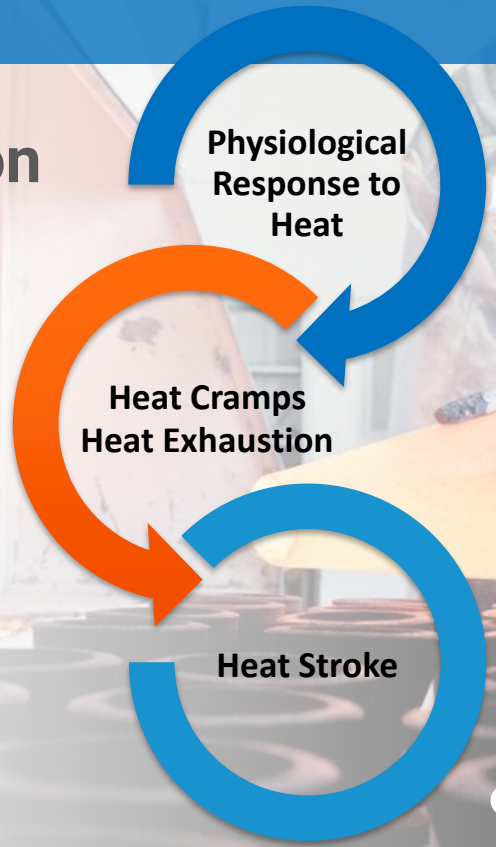
- What is indoor heat illness?
- What regulations mean to you
- FLS framework for heat illness
- 10 tips to beat workplace heat
- Helpful resources

ICW GROUP
Insurance Companies

Heat Illness Defined

Excessive sweating = dehydration

- Body loses ability to cool
- Increased blood flow to skin causes decreased organ function
- Leads to: heat cramps, heat exhaustion and heat stroke

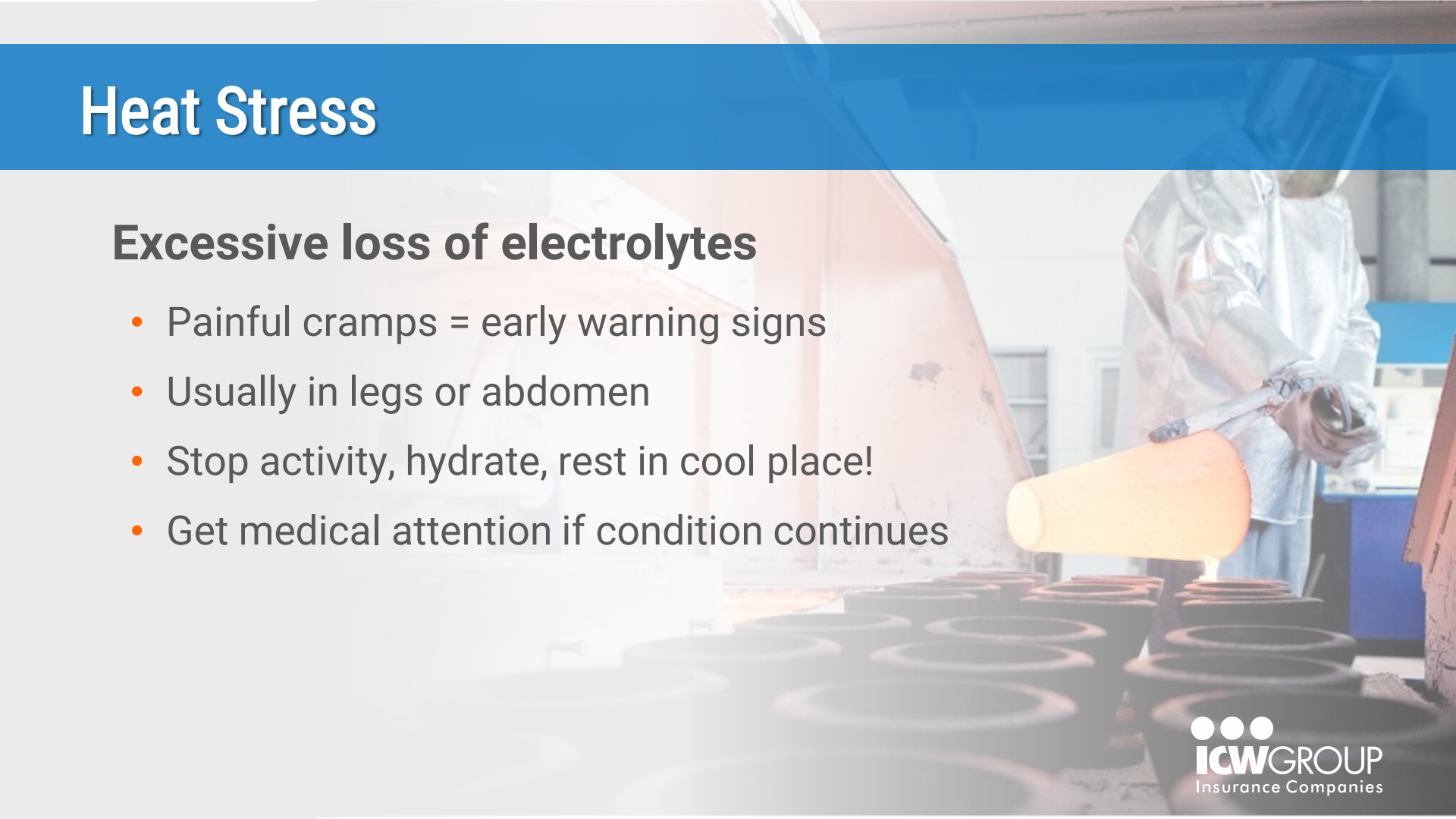


ICW GROUP
Insurance Companies

Heat Stress

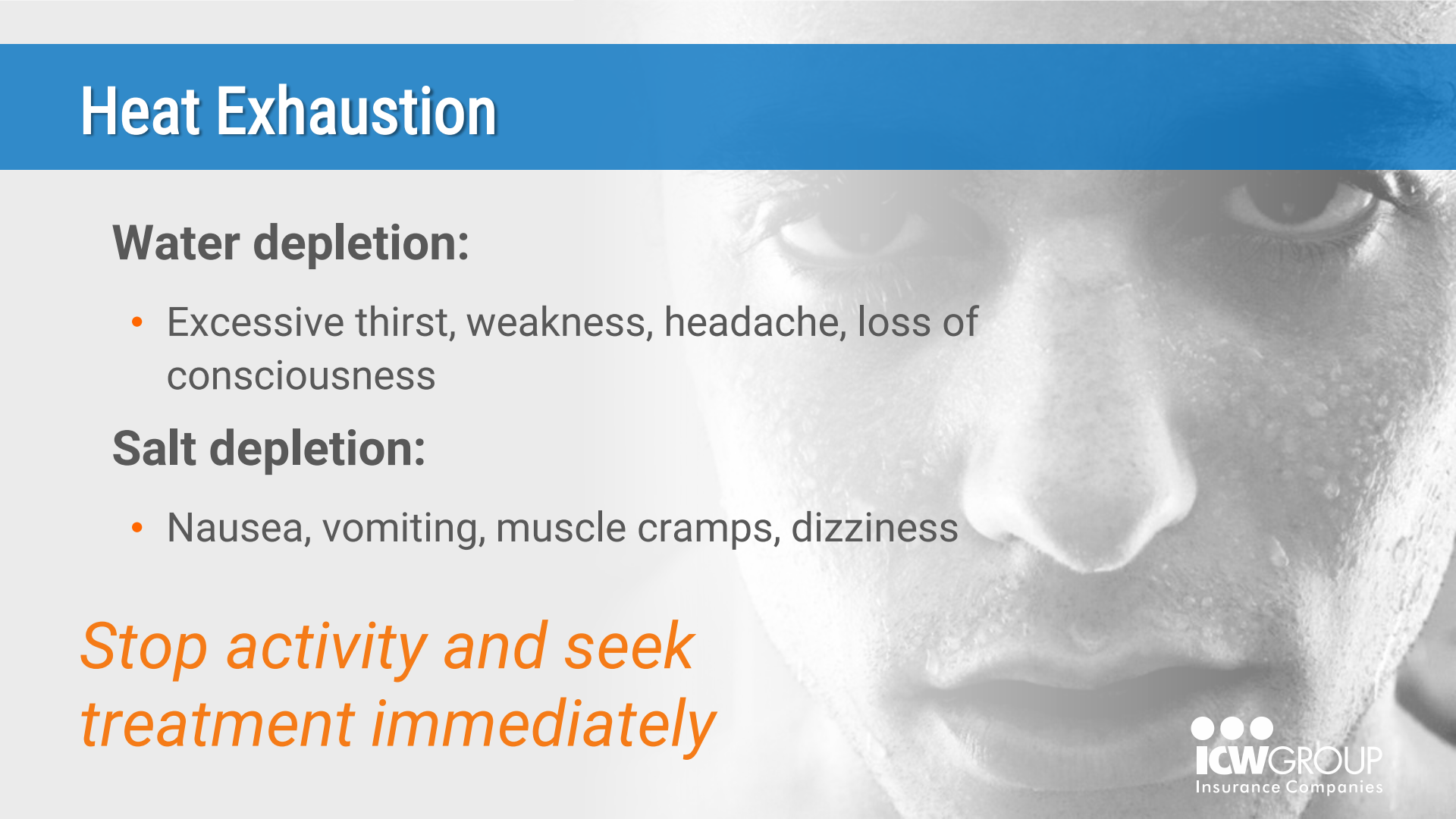
Excessive loss of electrolytes

- Painful cramps = early warning signs
- Usually in legs or abdomen
- Stop activity, hydrate, rest in cool place!
- Get medical attention if condition continues



ICW GROUP
Insurance Companies

Heat Exhaustion



Water depletion:

- Excessive thirst, weakness, headache, loss of consciousness

Salt depletion:

- Nausea, vomiting, muscle cramps, dizziness

Stop activity and seek treatment immediately

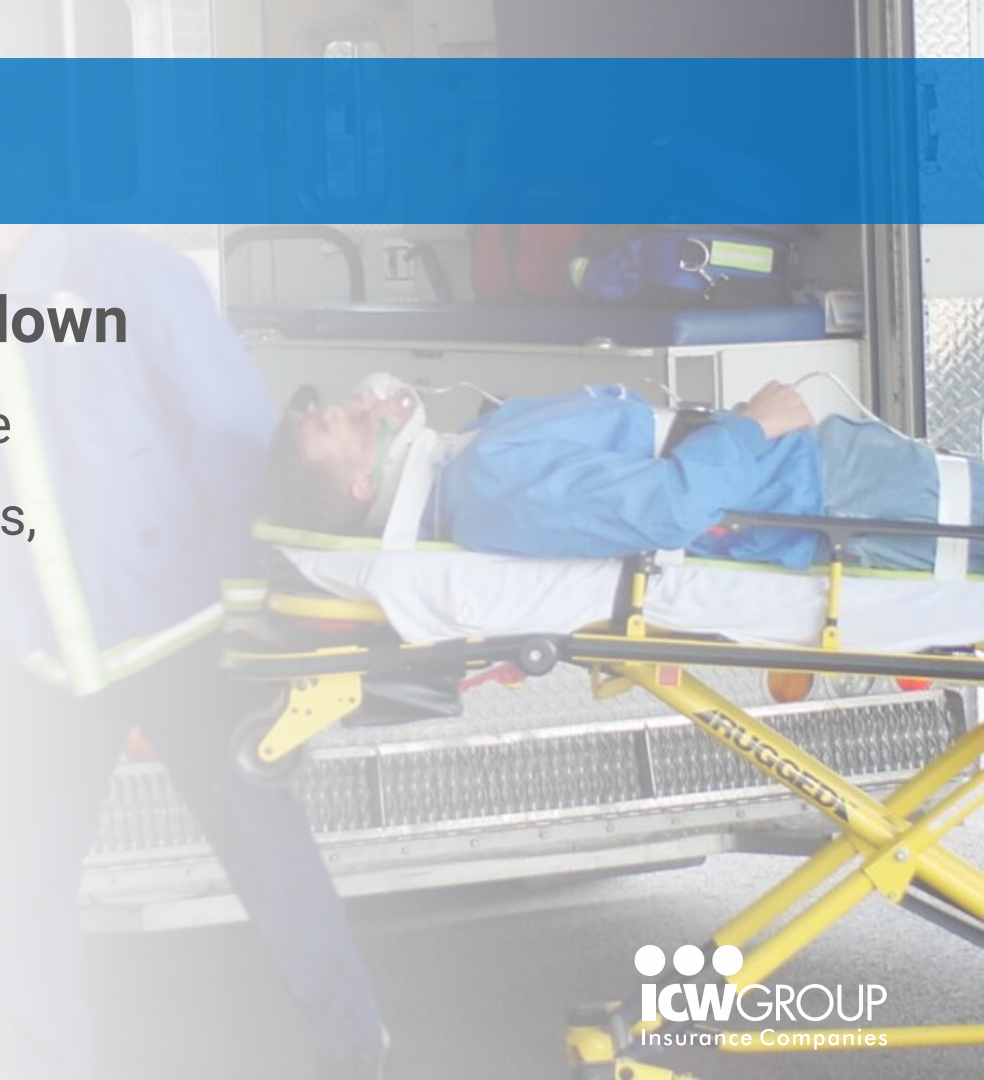
ICW GROUP
Insurance Companies

Heat Stroke

Cooling mechanism shuts down

- Can kill or cause brain damage
- Targets over 50, young athletes, obese, disabled

50% die even with medical attention.



ICW GROUP
Insurance Companies

Know the Difference!

Between Heat Exhaustion & Heat Stroke!

ICW GROUP
Insurance Companies

Know the Difference!

Heat Exhaustion

- Pale skin
- Excessive sweating
- Headache
- Nausea or vomiting
- Blurred vision
- Dizzy, may faint

ICW GROUP
Insurance Companies

Know the Difference!

Heat Exhaustion

- **Call 911**
- Rest in cool place
- Loosen and remove unnecessary clothing
- Shower or sponge with cool water

ICW GROUP
Insurance Companies

Know the Difference!

Heat Stroke

- Headache
- No sweating
- Red, hot dry skin
- Nausea or vomiting
- Unconscious or incoherent

ICW GROUP Insurance Companies

Know the Difference!

Heat Stroke

- **Call 911**
- Provide immediate, aggressive, effective cooling
- DO NOT give anything by mouth
- Transport to hospital

ICW GROUP
Insurance Companies

Today's Topics

- What is indoor heat illness?
- What regulations mean to you
- FLS framework for heat illness
- 10 tips to beat workplace heat
- Helpful resources

ICW GROUP
Insurance Companies

Regulations - Your Responsibilities

- Provide workplace free from serious hazards
- Examine workplace conditions
- Establish and communicate procedures
- Ensure employees follow safety and health requirements

Regulations - Your Responsibilities

- Provide safety training in language and vocabulary workers understand
- Adopt Injury and Illness Prevention Program

Prevention & safety is your responsibility

Today's Topics

- What is indoor heat illness?
- What regulations mean to you
- FLS framework for heat illness
- 10 tips to beat workplace heat
- Helpful resources

ICW GROUP
Insurance Companies

Risk Framework - FLS

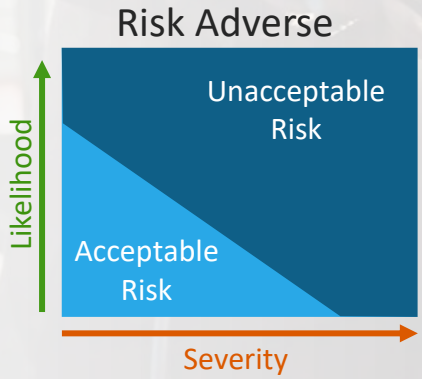
- **Frequency** - number of times exposed to hazard
- **Likelihood** - chance severity will be realized
- **Severity** - consequences of hazard being realized

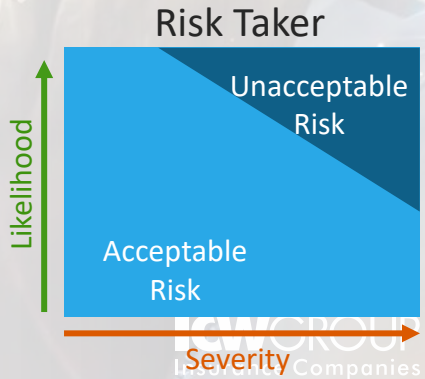
ICW GROUP
Insurance Companies

Acceptable Risk

- Established level of acceptable risk
- Poor planning causes assumed risk by default
- Exposure frequency increases risk

Risk can't be eliminated, but can be identified, quantified and reduced.





Acceptable Risk

Frequency

- Times working in over 80°F WBGT
- Completing activities involving high heat (welding, pours, oven changes)

Likelihood

- Metabolic load
- Radiant heating
- Humidity levels
- Access to cooling
- Rest frequency & length
- Access to water
- Acclimatization

Severity

- First aid response procedures
- Mandated evaluation and monitoring
- Acclimatization

ICW GROUP
Insurance Companies

Job Risk Factors

- Work intensity
- Work duration
- Location (roof, road, enclosure)
- Clothing (weight, impermeability)
- Respiratory protection

ICW GROUP
Insurance Companies

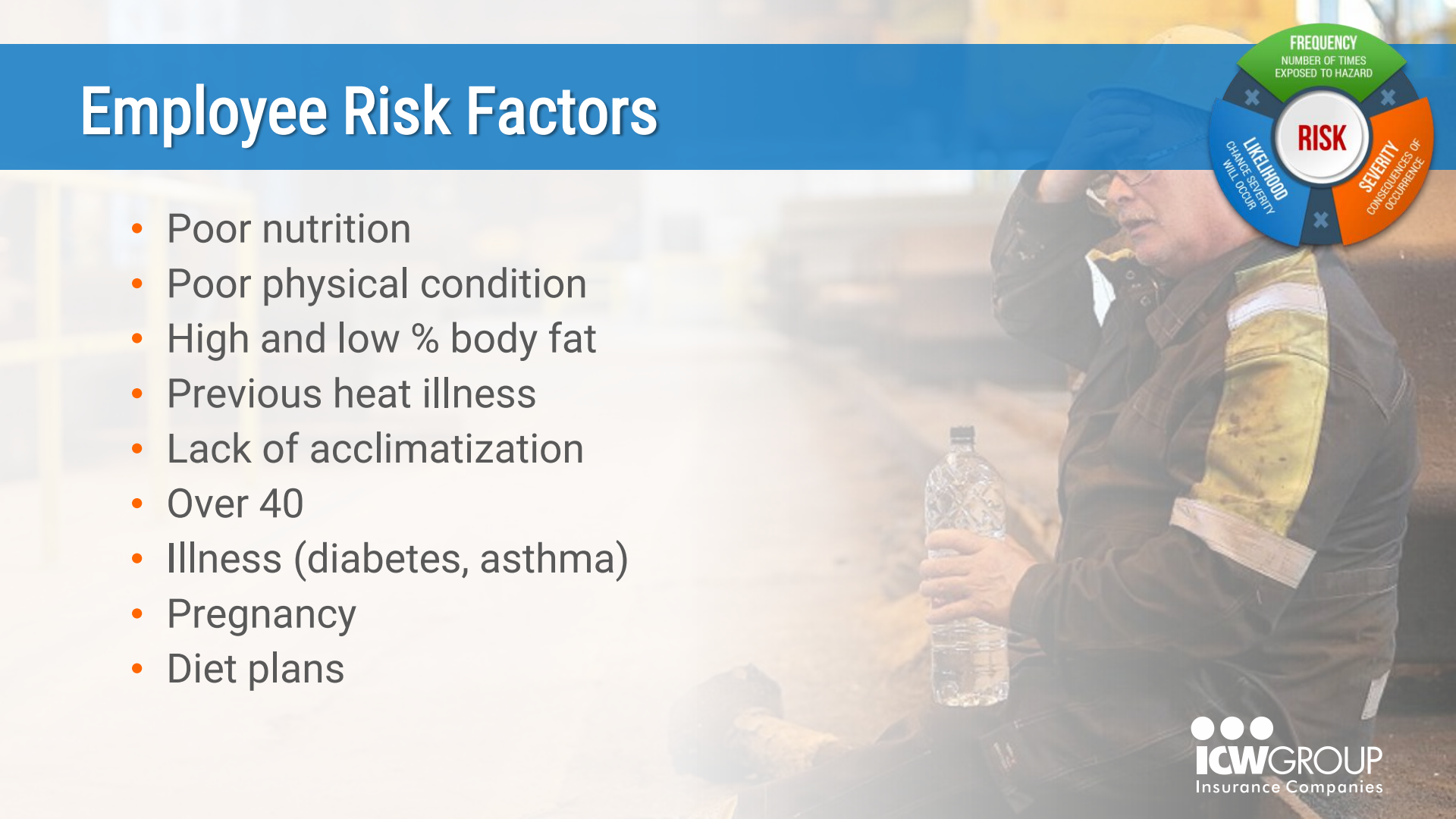
Environmental Risk Factors

- Air temperature
- Direct sunlight
- Radiant heat
- Humidity
- Little air movement

ICW GROUP
Insurance Companies

Employee Risk Factors

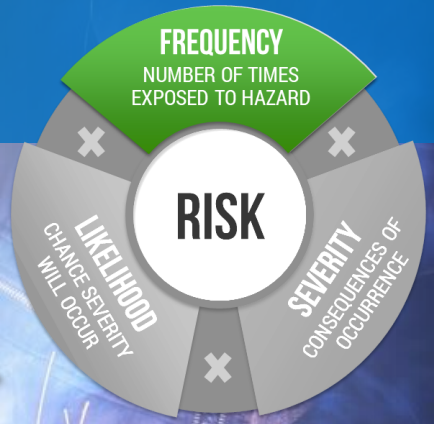
- Poor nutrition
- Poor physical condition
- High and low % body fat
- Previous heat illness
- Lack of acclimatization
- Over 40
- Illness (diabetes, asthma)
- Pregnancy
- Diet plans



ICW GROUP
Insurance Companies

Heat Illness Risk - Frequency

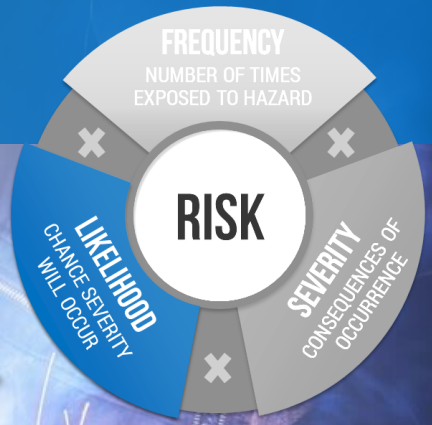
- Work in temperature-controlled environments?
- When in uncontrolled areas, what are tasks?
- What are activities and times over-exposed to heat?



ICW GROUP
Insurance Companies

Heat Illness Risk - Likelihood

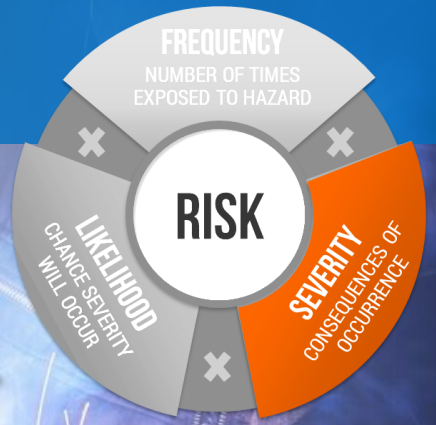
- Metabolic load - How hard is work?
- Radiant heating - molten metal, hot work, ovens?
- Humidity levels - Steam?
- Access to water?
- Frequent rests, length?
- Access to cool areas, air conditioning, cooling PPE?



ICW GROUP
Insurance Companies

Heat Illness Risk - Severity

- First aid response procedures?
- Mandated evaluation and monitoring?
- Acclimatized?



ICW GROUP
Insurance Companies

Today's Topics

- What is indoor heat illness?
- What regulations mean to you
- FLS framework for heat illness
- 10 tips to beat workplace heat
- Helpful resources

ICWGROUP Insurance Companies

1. ACCLIMATIZATION

- Act effectively when sudden heat exposure
- Observe employees closely during heat waves
- Closely observe those newly assigned to high heat areas for first 14 days
- Lessen intensity and shift length of new hires
- Modify work schedules
- Reschedule non-essential duties
- Recognize symptoms of heat stress

ICWGROUP
Insurance Companies

2. WATCH HEAT

Environmental monitoring

- Wet Bulb Globe Thermometer

WBGT - calculated as combination of humidity, radiant, and ambient temperature readings.

ICWGROUP
Insurance Companies

2. WATCH HEAT

Personnel monitoring:

- Oral thermometer
- Ear probe
- Core temp
- Pulse rate
- Blood pressure

ICWGROUP
Insurance Companies

2. WATCH HEAT

WBGT + work load = heat stress potential

	---------- Work Load* ----------		
Work/rest regimen	**Light**	**Moderate**	**Heavy**
Continuous work	30.0°C (86°F)	26.7°C (80°F)	25.0°C (77°F)
75% Work, 25% rest, each hour	30.6°C (87°F)	28.0°C (82°F)	25.9°C (78°F)
50% Work, 50% rest, each hour	31.4°C (89°F)	29.4°C (85°F)	27.9°C (82°F)
25% Work, 75% rest, each hour	32.2°C (90°F)	31.1°C (88°F)	30.0°C (86°F)

*Values are in °C and °F, WBGT.

These TLV's are based on the assumption that nearly all acclimatized, fully clothed workers with adequate water and salt intake should be able to function effectively under the given working conditions without exceeding a deep body temperature of 38°C (100.4° F). They are also based on the assumption that the WBGT of the resting place is the same or very close to that of the workplace. Where the WBGT of the work area is different from that of the rest area, a time-weighted average should be used (consult the ACGIH *1992-1993 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices* (1992).

ICWGROUP
Insurance Companies

3. DRINK UP!

- Potable drinking water must be available to employees, at no cost
- Maintain, at all times, sufficient pure and cool drinking water
- Enough to provide at least one quart per employee per hour for entire shift!

ICWGROUP
Insurance Companies

4. PLAN FOR REST

- Schedule regular rest periods
- Use WBGT and workload calculation
- Employee rest can range from regular breaks, to 25% work & 75% rest per hour
- If rest area is cooled, a time weighted average can be used.

ICWGROUP
Insurance Companies

5. COOL DOWN

- Define designated “cool-down” areas
- Ideally, removed from heat
- Provide fan or conditioned air
- Supply with cool water
- Provide wet towels and items to facilitate cooling

icwGROUP
Insurance Companies

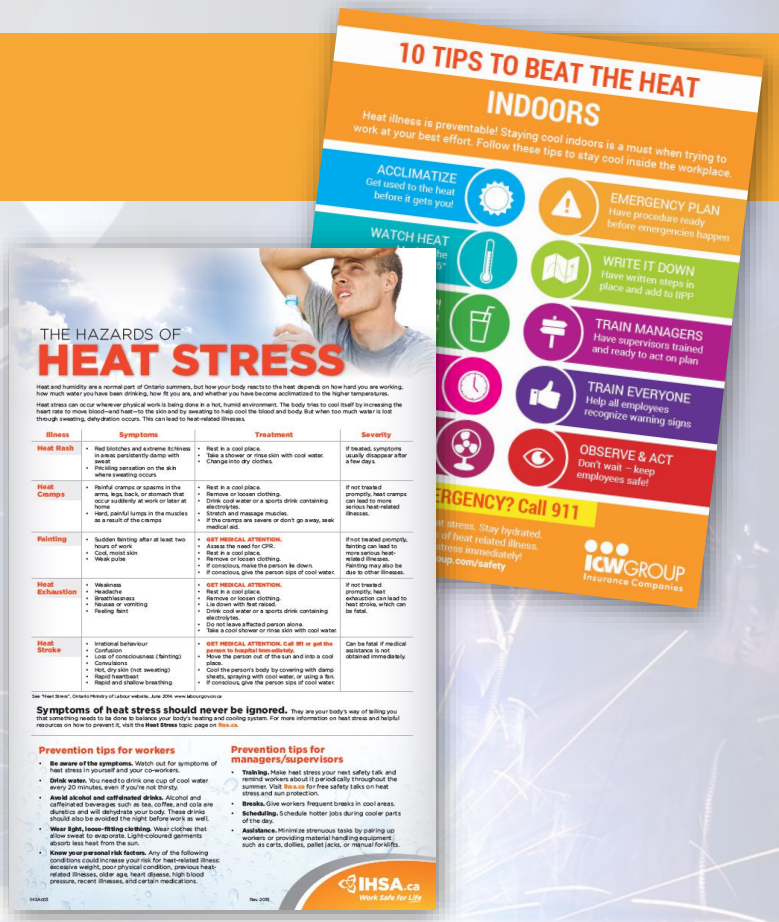
6. EMERGENCY PLAN

- Establish procedures
- Hold pre-shift prevention meetings
- Frequent reminders to drink water
- Observe for signs of heat illness
- Mandatory buddy system
- Ensure regular, effective communication
- Designate employees to call 911

ICWGROUP
Insurance Companies

6. EMERGENCY PLAN

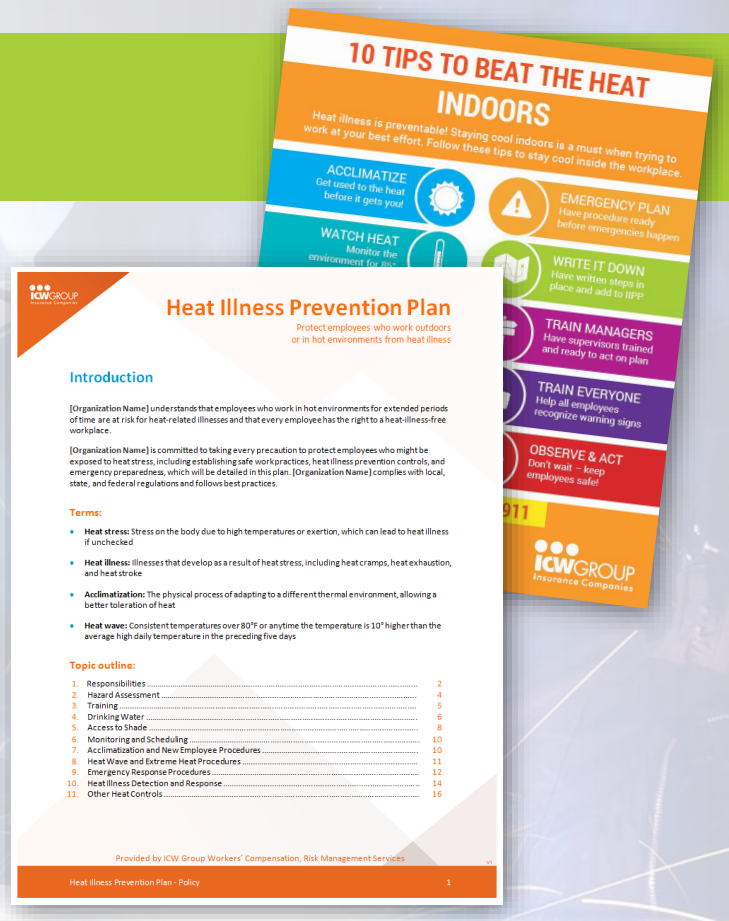
- Respond to signs and symptoms of possible heat illness
- Supervisor - take immediate action
- If signs of heat illness, implement emergency procedures
- Offer onsite first-aid service
- Call **911**



http://www.ihsa.ca/PDFs/Products/Id/IHSA013.pdf

7. WRITE IT DOWN

- Integrate effective indoor Heat Illness Procedures into IIPP
- Keep easily accessible to employees and OSHA
- In English & language understood by majority of employees



ICW GROUP
Insurance Companies

7. WRITE IT DOWN

Detail how your company will:

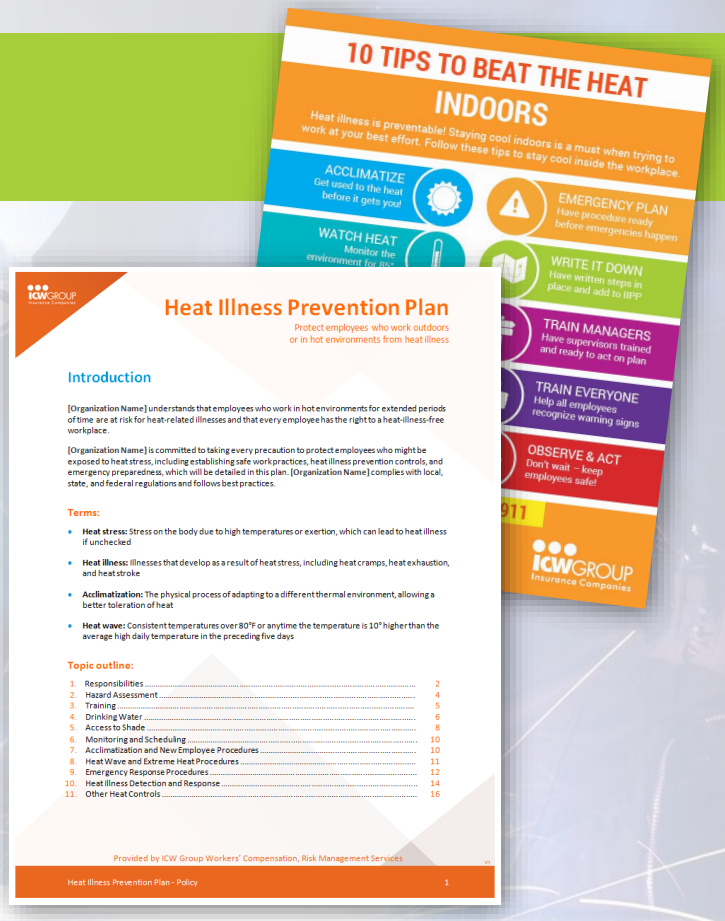
- Provide access to water, shade and cooling rests
- Monitor weather
- Institute high heat procedures
- Address acclimatization methods and procedures

ICW GROUP Insurance Companies

7. WRITE IT DOWN

Detail how your company will:

- Train employees and supervisors
- Respond to heat illnesses without delay, provide first aid and emergency services
- Provide clear and precise directions to worksite



ICW GROUP Insurance Companies

8. TRAIN MANAGERS

- Before “heat stress” conditions occur
- Heat standard requirements
- Company plan and procedures
- How to monitor temperatures
- Response to hot weather advisories

ICWGROUP
Insurance Companies

8. TRAIN MANAGERS

- When to implement plan
- How to recognize heat illness symptoms
- What to do if they suspect heat illness

ICWGROUP
Insurance Companies

9. TRAIN EVERYONE

- Environmental and personal risk factors
- Added burden of heat load on body
- Your company's Heat Illness Plan
- Accessibility to:
  - Water
  - Rests & cool-down
  - First aid

ICWGROUP
Insurance Companies

9. TRAIN EVERYONE

- Importance of frequent, small quantities of water
- Different types of heat illness
- Common signs and symptoms
- Appropriate first aid
- Emergency response
- Knowledge that heat illness can progress rapidly

9. TRAIN EVERYONE

- The concept, importance, and methods of acclimatization
- Importance of immediately reporting signs to supervisor
- Procedures for responding to heat illness

9. TRAIN EVERYONE

Physiologic Changes with Acclimation

- Increased plasma volume.
- Increased rate of sweating.
- Decreased threshold for initiation of sweating.
- Increased maximum capacity of cutaneous vasodilatation.
- Decreased electrolyte content of sweat.
- Decreased heart rate at a given work load and stress.
- Increased aldosterone production with resulting decreased urinary sodium excretion and greater volume retention.
- Lower core and skin temperature.

10. OBSERVE & ACT

- Don’t wait - follow procedures
- Designated employee invokes emergency procedures
- Provide first aid
- Stay with worker
- Contact 911
- Supply precise directions

ICWGROUP
Insurance Companies

Your Safety Resources

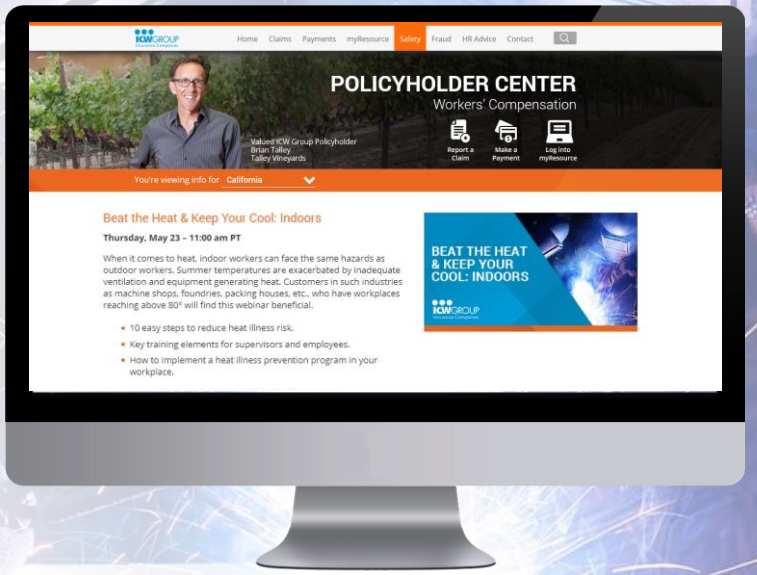
icwgroup.com/safety

ICWGROUP
Insurance Companies

ICW Group Policyholder Website!

icwgroup.com/safety

- Safety and Risk Management area!
- Safety Webinars
- Beat the Heat materials



ICW GROUP
Insurance Companies

ICW Group Policyholder Websi

icwgroup.com/safety

- Recording of webinar
- Audio interviews
- Helpful links
- Beat the Heat materials

ICW GROUP
Insurance Companies

QUESTIONS?

riskmanagement@icwgroup.com

ICW GROUP
Insurance Companies

Beat the Heat & Keep Your Cool: INDOORS

icwgroup.com/safety