



MONTHLY SAFETY BRIEF: HEAT STRESS

Why are we talking about heat stress in December??? Because a 'heat stress' comprehension deficiency was noted in our recent ISNetWorld safety audit and we are required to respond within the next 30 days. The deficiency had to do with the factors associated with the tasks performed that can contribute to a heat-related illness. So, let's review heat stress!

For your reference, our complete cold and heat stress program is located in section 7.19 in our safety and health manual. Below are some of the focused highlights concerning heat stress.

Some operations that Hygieneering employees perform may involve the potential of heat related injury. We work in some industrial locations that include high air temperatures, high humidity, and sometimes are in close proximity to high radiant heat sources. Also, at times, the nature of our work requires workers to wear heavy heat, fire and chemical resistant clothing. All of these conditions alone or in combination are likely to cause heat stress. The Project Manager is required to understand the work environments that workers may be exposed and conduct an appropriate risk evaluation and take measures to prevent heat stress.

Age, weight, degree of physical fitness, degree of acclimatization, metabolism, use of alcohol or drugs, medical conditions, and prior heat injury, in addition to, ambient air temperatures, radiant heat, air movement, conduction and relative humidity all affect an individual's response to heat.

Ventilation, air cooling, fans, shielding, and insulation are the major types of engineering controls used to reduce heat stress in hot environments. Cool water or a sports drink (electrolyte replacement drink) must be made available to workers, and all workers should be encouraged to drink small amounts frequently, e.g., 1 cup every 20 minutes.

The following are the main potential heat related illnesses:

- **Heat Stroke** occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence of is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness, convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41 degrees Celsius (105.8 degrees F). If body temperature is too high, it causes death.
- **Heat Exhaustion.** The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency.
- **Heat Cramps** are usually caused by performing hard physical labor in a hot environment. Cramps appear to be caused by lack of water replenishment. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.
- **Heat Rashes** are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation.



HEAT STRESS QUIZ

1. Which of the following is the most serious of the heat related illnesses?
 - a. Heat Stroke
 - b. Heat Exhaustion
 - c. Heat Cramps
 - d. Heat Rash

2. Which of the following tasks can contribute to a heat related illness?
 - a. Working in direct sunlight when the ambient temperature is above 90 degrees
 - b. Working in an industrial environment adjacent to a furnace
 - c. Wearing full body FRC conducting manual labor
 - d. All of the above

3. All of the following may contribute to heat stress except:
 - a. smoking habits of a person
 - b. certain medications
 - c. body weight
 - d. previous heat related illnesses

4. If you feel any heat related symptoms, you should stop work immediately and notify your Project Manager.
 True
 False

Instructor(s) – John Feller, CIH, CSP

SCORE: PASS / FAIL

Employee Signature



Supervisor Signature

Date



Bonus December Safety Brief! Fatigue: The Hidden Killer

In our efforts to meet all the ISNetWorld requirements of our safety program, you all benefit by getting a bonus December 2018 Safety Brief!

Driving to and from jobsites after working an extended shift is a major fatigue safety concern. In our business, working double shifts to cover peak work loads is common. We need to be aware of the fatigue risk and take steps to make sure we get home safely.

Many people think tiredness is something that can be overcome with will power or motivation. Unfortunately, this is not the case and tiredness and its effects are inevitable and can be catastrophic. Incident investigations have always identified fatigue as one of the contributory causes of road accidents. It is called "the hidden killer", and responsible for at least 30% of fatal accidents. Yet, it's taken for granted.

How do you know when you are fatigued while driving? When you have one or a combination of the following:

- You keep yawning;
- You have difficulty keeping your head up, or your eyes open;
- Your eyes feel sore or heavy;
- Your vision starts to blur or dim;
- You become impatient and make rash decisions;
- You feel hungry or thirsty;
- Your reactions seem slow;
- Your driving speed creeps up or down;
- You don't notice a vehicle until it suddenly overtakes you;
- You don't remember driving the last few miles.

You can prevent fatigue by:

- Plan your trip with a good night's sleep (7 to 8 hours) beforehand;
- Plan not to travel more than 9 hours in any one day;
- Take regular breaks (every 2 hours, take 15-minute rest or more);
- When you stop for rest, get out of the vehicle and walk around for a while;

Don't forget:

- More than 50% of fatigue related accidents occur between 00:01 and 06:00;
- Caffeine is a stimulant that promotes false alertness;
- Always follow journey management requirements;
- Sleep is the only thing to cure fatigue.

Remember to keep in good communication with your Project Manager. If you are working double shifts, make sure your time off allows for adequate sleep time. Please review our Fatigue Management Safety Policy (Attached).



7.35 FIT FOR DUTY/FATIGUE MANAGEMENT POLICY

Hygieneering has established this fit for duty policy to ensure all employees and sub-contractors are physically capable of performing their job function. The following bullets summarize the key components of the policy. Many details of this policy are spelled out in the Hygieneering Employee Policy Manual which is an integral part of this safety and health manual.

1. Hygieneering has established pre-employment physicals for all field staff. Refer to section 1 of this manual for additional details. The aspects of the pre-employment physicals may vary depending on the occupation, but may include the following and any other tests deemed appropriate to determine fit for duty:
 - a) General Physical/Medical Exam
 - b) Blood Lead Level Screening
 - c) Spirometry Test (for respirator usage evaluation)
 - d) Back Strength – Lifting
 - e) Audiometric
2. Hygieneering has a comprehensive drug and alcohol testing program for all field staff. The program elements include drug and alcohol screening for pre-employment, post-accident, random and as prescribed by our client/host facilities. The specifics are outlined in Hygieneering Employee Policy Manual.
3. Hygieneering requires field staff (especially any safety critical positions) to notify their supervisor when taking prescription or over-the-counter medication that could impair his/her ability to work safely. Employees must report all medications they are taking that may affect their job function. Over-the-counter medications such as allergy or cold and flu medications could also impair one's ability to perform safely and must also be reported to their supervisor. Chronic use of over-the-counter, prescription drugs, and any other product which may affect an employee's ability to perform their work safely is prohibited.
4. No horseplay of any kind is allowed on any worksite. If a Hygieneering project manager/supervisor observes employee behaviors contrary to good work performance or an employee appears to be impaired in any way, the supervisor may remove the employee from duty to further investigate the situation.
5. Hygieneering field staff is responsible for notifying their supervisor if they believe they have not had the proper training to conduct a job task properly. This includes all aspects of the job including equipment use, interpretation of results and health and safety training. Employees are encouraged to speak up if they are uncomfortable with any aspect of a job task
6. Hygieneering field staff is responsible for notifying their supervisor if they are fatigued to the point of not being able to perform their duties safely, especially safety critical operations. On occasion, employees may be requested to work extended shifts. Employees must be responsible for ensuring they are physically and mentally fit to perform their job functions safely. Employees must take responsibility for their own safety as well as not reporting to work in a condition as to endanger the safety of their fellow workers. Supervisors shall take appropriate actions to assist the worker and address the issue.



The following are specific Fatigue Management program elements:

- Initial and annual training for workers on fatigue and controlling fatigue is conducted and documented. The training includes how to recognize fatigue, how to control fatigue through appropriate work and personal habits, and reporting of fatigue to supervision.
- Hygieneering limits work hours of employees to a maximum of double shifts (with review and approval) on a daily basis. Hygieneering strives to limit extended shifts to control worker fatigue through a good staff balance and shared responsibilities on job sites whenever feasible. When employees work extended shifts, a review is conducted with the employee by the Project Manager to allow for sufficient sleep to maintain mental fitness.
- Hygieneering staff are only requested to work double shifts on occasion and have the ability to decline this work at any time. When multiple consecutive double shifts for a project are worked at will be by an employee. The Hygieneering Project Manager may provide for a mid-week break of at least one full shift.
- Ergonomic friendly chairs and equipment are offered in our office environment. Where project tasks require ergonomic friendly equipment, the Project Manager will bring it to the attention of the VP of Operations for review and implementation as necessary. Examples may include anti-fatigue mats for standing, lift assist devices for repetitive lifting, proper lighting and control of temperature, and other ergonomic devices as deemed appropriate.
- In our roles as health and safety consultants, we do not anticipate repetitive jobs that would require analysis of work tasks to control fatigue. However, the Project Manager shall evaluate job tasks on each project to ensure fatigue review is conducted and addressed if identified.
- Where fatigue may be an issue on a project, appropriate rest breaks will be provided to increase mental awareness and fitness. A rest location or chair, etc. will be provided as appropriate for the job/job site. This will be determined and managed by the Project Manager.

7.36 HYGIENEERING SUB-CONTRACTOR SAFETY POLICY

The purpose of this policy is to ensure proper selection, expertise verification, coordination and communication with any Hygieneering sub-contractor that will work at our client locations.

Engaging a Sub-Contractor

Prior to any sub-contractor performing work for Hygieneering, the following must be in place:

1. Sub-contractor agreement (AIA form A401-1997) or a completed Master Services Agreement, and
2. Certificate of Insurance naming Hygieneering and the specific client as additionally insured.
3. W-9 form for tax information
4. Background Check

Prior to Conducting On-site Work (Check List Verification Process)

Prior to conducting on-site work, the lead Hygieneering Project Manager shall verify that the on-site subcontractors are competent and capable of performing their assigned duties in a safe and environmentally sound manner. The Project Manager shall inspect any testing equipment and ensure it is in working order with appropriate calibration documentation. The Project Manager is responsible for verifying that the on-site



FATIGUE MANAGEMENT QUIZ

1. Which of the following is not a warning sign of fatigue?
 - a. Yawning
 - b. Blurred vision
 - c. Sore throat
 - d. Not remembering the last few miles you drove

2. Which of the following will assist with preventing fatigue?
 - a. a good night's sleep
 - b. do not drive for extended periods
 - c. take regular breaks
 - d. All of the above

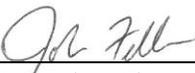
3. More than 50% of fatigue related accidents occur between midnight and 06:00am.
 True
 False

4. Caffeine is a stimulant that promotes alertness.
 True
 False

Instructor(s) – John Feller, CIH, CSP

SCORE: PASS / FAIL

Employee Signature



Supervisor Signature

Date