WHAT IS DEHYDRATION

IT ONLY TAKES 1% OF DEHYDRATION TO RESULT IN LOWERED PRODUCTIVITY!

Most of us think of dehydration as a summer problem. The days are longer and warmer, you're sweating more. To compensate, you hydrate yourself with THORZT and a balanced diet. What many people don't realise, however, is that it's just as easy to become dehydrated in the winter.

THORZT is the hydration solution for the weekday worker and the weekend warrior so it doesn't matter if you are on a construction site, the footy field, about to ski down a mountain or sitting in an office with the air conditioner on, THORZT has a product for you.

HOW DOES DEHYDRATION OCCUR

Dehydration occurs when fluids and nutrients are lost from the body at a faster rate than they are replaced. This results in an imbalance of the essential components of an efficiently working body. If you don't replace the lost fluids and minerals (electrolytes), you will become dehydrated. Blood is approximately 80% water and is responsible for the efficient transportation of vital nutrients around the body. Any imbalance reduces the efficiency of our bodies.

50-60%

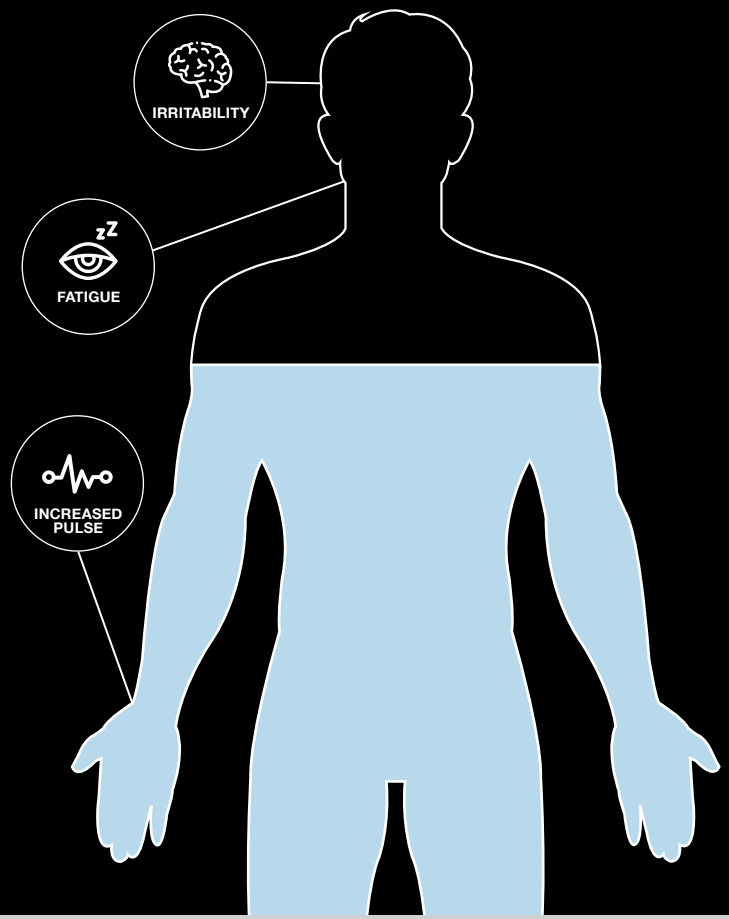
OF WORKERS REPORT TO WORK IN A MILDLY DEHYDRATED STATE(4)

Symptoms of dehydration are difficult to determine in the early stages, but can include dryness of the mouth and thirst, dry warm skin, dizziness, or cramping in the arms and legs.

Darker urine and thirst are the first signs of dehydration as it is your bodies way to reduce fluid lost and increase water intake.

AS DEHYDRATION INCREASES, SIGNS MAY INCLUDE:

- IRRITABILITY
- DROWSINESS
- IRRATIONAL THINKING
- SKIN INELASTICITY
- FACIAL FLUSHING
- INCREASED PULSE RATE
- DARKER URINE WITH AN ODOUR
- PASSING LESS URINE THAN NORMAL
- SUNKEN EYES
- FATIGUE (FEELING TIRED)



STAGES OF DEHYDRATION

Dehydration adversely affects work productivity, safety and morale.(1) Loss of fluids can affect cognitive abilities, reduce performance and slow reaction times. (2,3,4) This can lead to reduced output and careless work practices which may contribute to serious accidents in the workplace.

1%
DEHYDRATION

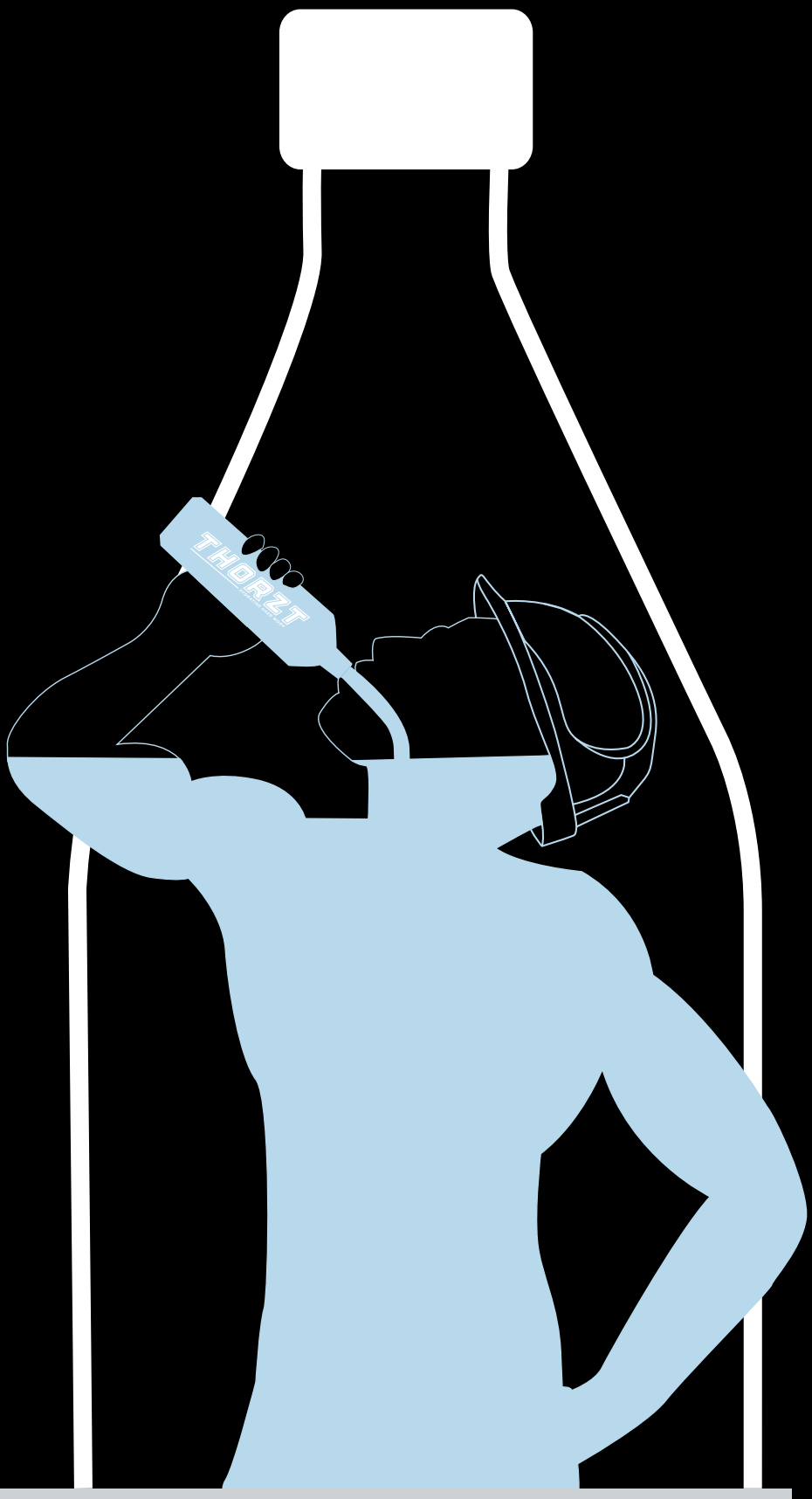
It only takes 1% of dehydration to result in lowered productivity! (9, 4)

2%
DEHYDRATION

At 2% dehydration, heart rate increases by 8 beats per minute (bpm) which increases perception of effort and reduces body performance by up to 30%. (2, 9)

3%
DEHYDRATION

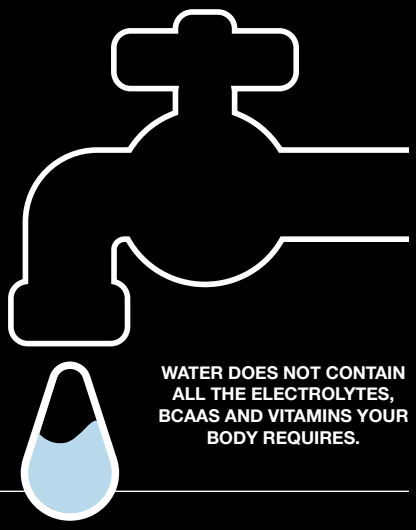
At 3% dehydration, heart rate increases by 12bpm and performance is reduced by 25-50%. Reaction time is also slowed to levels similar to that of having a 0.08 Blood Alcohol Content (0.03 above the legal driving limit). (4,9)



STAYING HYDRATED

In thermally stressful environments (like mine sites) where workers can sweat anywhere from 1L - 2.5L per hour, (3, 4, 11) **a specially formulated mixture of electrolytes is required to replace fluid losses and re-establish the correct fluid-electrolyte balance** (9,10).

How well you will be hydrated will ultimately depend on the amount of fluids you consume! More fluids = more hydration! Other factors will then affect how well you stay hydrated:
- The rate at which you drink
- The composition of the drink (sugars, electrolytes, proteins, vitamins). (7, 8, 12)



WATER DOES NOT CONTAIN ALL THE ELECTROLYTES, BCAAS AND VITAMINS YOUR BODY REQUIRES.

THE THORZT FORMULA

Electrolytes
Electrolytes are naturally occurring essential minerals that control osmosis or movement of water within the body. Electrolytes also help maintain the acid-base balance required for normal cellular activities.

Common electrolytes include Potassium, Calcium, Sodium, Chloride and Magnesium. The body depends on electrolytes to perform vital functions by sending electrical signals from the brain to nerves that activate your muscles to perform mechanical functions.

Maintaining this electrical capability and voltage output of cellular communication is dependent on electrolytes. Most bodily functions require electrolytes, especially during neuromuscular processes. When the body loses fluid and electrolytes, both must be replaced for the body to rehydrate, retain fluid and return to efficient functioning before heat illness sets in. (5, 8, 13)

A common result of strenuous physical work or exercise is electrolyte loss. According to research, a deficiency in electrolyte may reduce physical performance and capacity as well as contribute to muscle cramps and weakness and injuries. (7, 13)

Sodium
Sodium is directly related to the control of body water, enhancing water absorption. Sodium also stimulates thirst, which increases voluntary drinking. The greater the sodium concentration of the hydration beverage the greater the restoration of fluid balance.

Potassium
Also aids in water absorption (lesser extent than Sodium) assists in muscle cramping.

Magnesium
Helps hold onto Potassium – water absorption. Allows the cell to use carbohydrates and amino acids. Assists in muscle cramping.

Zinc
Help maintain structural integrity of proteins and help regulate gene expression.

Branch Chain Amino Acids
Branch Chain Amino Acids play an essential role in protein synthesis and muscle building as well as recovery, accounting for over a third of Essential Amino Acids.

The addition of amino acids to carbohydrate-electrolyte drinks has been shown to increase fluid retention 15% greater than carbohydrate-electrolyte-only drinks, and 40% greater than water. (12)

Vitamins
The B vitamins are also important for a normal appetite, good vision, healthy skin and nervous system, and red blood cell formation. They function as coenzymes that help the body obtain energy from food and drink. The body needs vitamin C, also known as ascorbic acid or ascorbate, to remain in proper working condition. Vitamin C benefits the body by holding cells together. Since our bodies cannot produce or store vitamin C, an adequate daily intake of this nutrient is essential for optimum health. (15)

LOSS OF FLUIDS

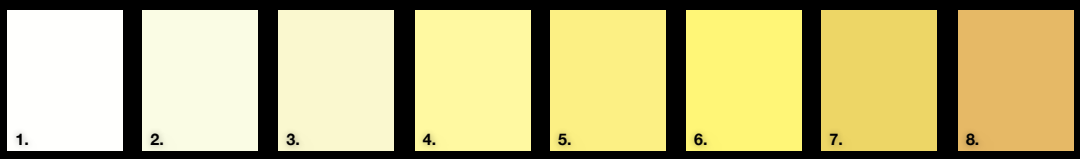
LOSS OF FLUIDS CAN AFFECT COGNITIVE ABILITIES, REDUCE PERFORMANCE AND SLOW REACTION TIMES(2, 3, 4)

HOW TO MONITOR HYDRATION IN 3 EASY STEPS!

It is important to monitor your hydration to ensure you stay hydrated throughout the day/night.

1. MONITOR URINE COLOUR

The following chart is a guide that outlines when to hydrate based on the colour of urine. If your urine matches the colours numbered 1,2, or 3 you are hydrated, but keep drinking fluid. If your urine matches the colour numbered 4 through 8 you are dehydrated and need to drink far more fluid.



SAFE ZONE
Optimal hydration, keep drinking.

2. CAUTION
Mild dehydration, increase fluid intake.

3. WARNING
Severe dehydration.
Seek medical attention.

2. MONITOR FLUID INTAKE

Drink 250mls of water every 15 minutes in warm environments.
Outdoor Workers: For every 3 cups of water, drink 1 cup of THORZT (3:1)
Indoor Workers: For every 6 cups of water, drink 1 cup of THORZT (6:1)
Increase electrolyte intake when experiencing extreme sweating

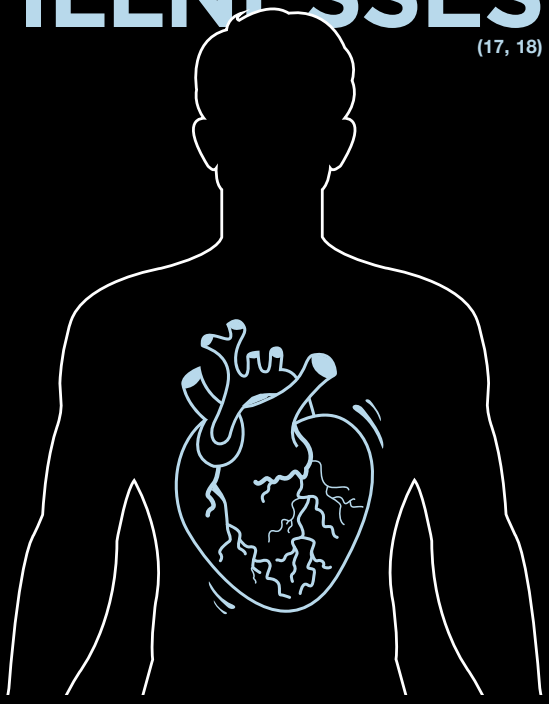
3. MONITOR YOUR SIGNS & SYMPTOMS OF DEHYDRATION

Key signs of dehydration:
- Reduced performance
- Slower reaction times
- Thirst
- Weight loss

Each kilogram (kg) of weight loss is equivalent to approximately one litre (L) of fluid.

UNDERSTANDING HEAT RELATED ILLNESSES

(17, 18)



YOUR BODY HAS SYSTEMS IN PLACE TO CONTROL THE INTERNAL TEMPERATURE

Heat stress is a condition where your body loses its ability to control the internal temperature and finds it difficult to remove excess heat. It causes the body's core temperature to increase (above 37.5°C), resulting in conditions like heat rashes and muscle cramps. It can also cause your heart rate to increase, irritability and makes it difficult to focus on a task. In severe cases, heat stress can lead to heat stroke and heat exhaustion causing very high body temperatures, confusion, nausea, dehydration, fainting, and even death.

Working in the heat increases the risk of heat-related illness especially as a combination of the personal and environmental contributing factors change. Factors like increased temperature, higher humidity, working near hot equipment, increased physical exertion, wearing thick clothing or PPE, changes to personal fitness, sickness, poor diet and consumption of alcohol and high caffeine/sugar drinks.

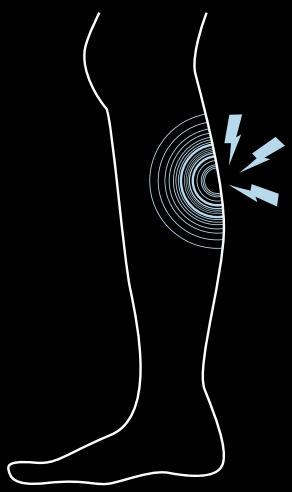
HEAT RASH

Symptoms

Mild inflammation of clogged sweat ducts. It may occur from profuse sweating and wearing heavy work uniforms and PPE. The blocked ducts prevents the sweat coming to the skin surface to evaporate. The rash is characterized by small, raised bumps (like coarse sandpaper) spread evenly across small patches of skin.

Treatment

Move to a cooler, less humid environment. Keep the affected area dry.



HEAT CRAMPS

Symptoms

Heat cramps are muscle spasms that result from loss of large amounts of electrolytes and water. Sweating depletes the body's salt and fluid levels that can cause these muscle cramps (especially when undertaking strenuous activities or work).

This can be dangerous when working in certain job situations. Heat cramps are associated with cramping in the abdomen, arms and calves.

Treatment

Drink water and electrolyte replacement solution like THORZT. Rest in a cool environment and do not return to strenuous activity until the cramps have ended.

IF STEPS ARE NOT TAKEN TO REDUCE BODY TEMPERATURE, HEAT EXHAUSTION CAN WORSEN AND BECOME HEAT STROKE

HEAT EXHAUSTION

Symptoms

Heat Exhaustion is the early symptom of heat stroke and the body's response to an excessive loss of fluids, and essential electrolytes, usually through sweating.

It is characterised by:

- Heavy sweating
- Tiredness
- Dizziness
- Vomiting
- Headache
- Paleness
- Weakness
- Cold and Clammy skin
- Fast and weak pulse
- Fast shallow breathing

Treatment

Stop work immediately. Replenish fluids (with electrolytes like THORZT). Move to a cool place, out of the sun and away from any heat sources. Take action to cool down (remove heavy PPE clothes, apply cooling apparel like THORZT Chill Towel, THORZT cooling vest, THORZT Scarf, sponge with cold water). Cool down further by taking a cool shower or bath. Seek medical attention if symptoms worsen or last longer than one hour.

HEAT STROKE

Symptoms

Heat stroke is the most serious form of heat injury. It is caused when your body temperature rises >40°C by prolonged exposure to excessive heat or heat and humidity. The heat-regulating mechanisms of the body become overwhelmed and unable to cool yourself down, causing the body temperature to climb uncontrollably

It is characterised by:

- High body temperature
- Disorientation
- Confusion
- Nausea
- Red hot dry skin
- Unconsciousness
- Throbbing headache
- Rapid strong pulse

Treatment

Call 000 for immediate medical assistance. Move to a cool place with circulating air. Remove or loosen any unnecessary clothing, including PPE. Use a fan to direct a gentle airflow over the body. Apply THORZT chill towel, THORZT cooling vests, THORZT scarf or cold packs or wrapped ice to neck, groin and armpits. Monitor body temperature and continue cooling efforts until body temperature drops below 38.5°C. If fully conscious, drink cool, but not cold, water with electrolyte solution like THORZT.

INDUSTRIAL ATHLETE PROGRAM

HYDRATING HARD WORK

We created our programs and education built for Industry… designed from all the feedback you asked for help with by our expert team within THORZT, who also happen to be Olympians so we can hydrate hard work of any kind…

IF THE FOLLOWING EXAMPLES HELP DESCRIBE YOUR WORKPLACE OR TEAM, YOU'RE NOT ON YOUR OWN.

- Time poor to develop and roll out educational awareness programs
- Ad hoc hydration program when it gets hot
- Reactive in summer
- Needing something that is sustainable and repeatable that work teams 'GET'

HOW WE CAN HELP…

BENEFITS OF THORZT'S INDUSTRIAL ATHLETE PROGRAM

- Delivers educational toolboxes and conversations around dehydration, heat stress and fatigue in the workplace
- Sustainable and repeatable programs specifically for the workers
- Empowers management
- Educates workers and drives hydration adoption
- Better health
- Increased energy
- Improved mood
- Improved workplace morale
- Greater productivity
- Increased safety

HOW WE DO THIS FOR YOU...

ANALYSE CURRENT PROGRAMS AND OBJECTIVES.

IMPLEMENT
Training, testing, programmed drinking and cooling strategies.

ASSESS AND REVIEW
Continued testing, data tracking, education and program review.

REDUCE ASSOCIATED COSTS
Via less heat stress, dehydration incidents on site, programmed drinking reducing over consumption of electrolytes.

HYDRATION TESTING

SHARING DATA FOR CONTINUED LEARNING AND IMPROVEMENT.

PROGRAM LEAD: DAVID RHODES & LUKE MICHAEL
Program lead: David Rhodes and Luke Michael
THORZT's Industrial Athlete Program is run by David and Luke. Given their history, David and Luke are well positioned to discuss the parallels between industrial workers and athletes, and how the THORZT program has been designed.

"It's not all about drinking electrolytes, they aren't the silver bullet. It's about knowledge and understanding we can over complicate things. It's about doing the basics really well, and knowing where THORZT can play a role, we then surprise ourselves with the positive results we can get in our heat stress and hydration solutions."

UNLIMITED SUPPORT VIA OUR 1800 THORZT HOTLINE

MANAGED BY OUR EXPERIENCED THORZT TEAM WHO DELIVER:

SERVICE EXCELLENCE

PRODUCT KNOWLEDGE, INDUSTRY KNOWLEDGE, CUSTOMER ENQUIRY

EXPERTISE

TO FIND SOLUTIONS FOR ANY OF OUR CUSTOMERS NEEDS

125+

YEARS

COMBINED EXPERIENCE & KNOWLEDGE IN UNDERSTANDING HYDRATION & HEAT STRESS

6
AUS & NZ

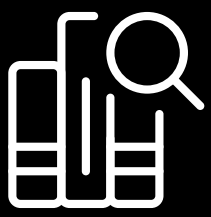
DISTRIBUTION HUBS

ACCROSS AUSTRALIA & NEW ZEALAND FOR FLOOR TO STORE FAST DELIVERY

30+

SALES REPRESENTATIVES

UP-SKILLING YOUR TEAM AND CONNECTING END USERS WITH DISTRIBUTORS ACROSS AUSTRALIA & NEW ZEALAND



RESOURCE LIBRARY

- INSTORE MERCHANDISING
- MARKETING ASSETS
- SITE AUDITS, BEST PRACTICE
- EDUCATIONAL WHITE PAGES