

DEHYDRATION IN THE WORKPLACE

THORZT
HYDRATING HARD WORK

KEY FACTS EVERY WORKER NEEDS TO KNOW

Even 'mild dehydration' (classified as 1-4% dehydration) adversely affects worker productivity, safety and morale. It is estimated that over half of Australian workers suffer from mild dehydration on a daily basis. The below fact sheet provides a brief synopsis of the impact that mild dehydration has in the industrial workplace.

DEHYDRATION

QUICK STATS

- 60% of Australian workers report to work at least 2% dehydrated
- Industrial workers sweat an average of 1L per hour when working in the heat
- 1 % dehydration is about an 800ml fluid deficit for an 80kg adult male

SAFETY

- At 1 %-2% dehydration, workers experience decreased cognitive abilities, reduced concentration and alertness, and slower reaction times.
- 3% dehydration can slow reaction times to the same extent as having 0.08 Blood Alcohol Content (BAC)
- At 0.08 BAC you are 5 times more likely to crash your car
- How much more likely are you to have a workplace accident when dehydrated?

PRODUCTIVITY

- For every 1 % increase in dehydration your heart rate increases 4 beats per minute (BPM), increasing perceived effort and reducing physical work capacity
- 1 % dehydration has been shown to cause a 12% reduction in worker productivity
- 2% dehydration can result in up to a 30% decrease in aerobic performance
- At 3%-4% dehydration, your capacity for muscular work declines and worker productivity decreases by up to 50%



WHY WATER IS NOT ENOUGH ..

- When we sweat we don't just lose water but also essential salts and minerals known as electrolytes
- Electrolytes play a number of key roles within the body, and one such role is water retention
- Replacing water without also replacing electrolytes can cause 'Involuntary Dehydration' (ID), whereby despite drinking lots of water, our bodies fail to rehydrate
- ID can be difficult to detect, as the lower concentration of electrolytes in the system causes urine to run clear
- Electrolyte drinks replace water alongside electrolytes, restoring the optimal fluid:electrolyte balance and preventing ID
- The sodium in electrolyte drinks stimulates the thirst response, encouraging fluid consumption
- Provision of flavoured alternatives along with water have been found to increase fluid consumption by 50%
- Electrolyte drinks are a great tasting alternative to water, and provide many nutritional benefits
- During rehydration, carbohydrate-electrolyte drinks increase fluid retention by 25%
- Carbohydrate-electrolyte drinks that contain amino acids increase fluid retention by up to 40%

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CHOOSE THE RIGHT ELECTROLYTE DRINK

	HYPOTONIC	ISOTONIC	HYPERTONIC
% CARBOHYDRATES	Less than 4%	4 - 8%	Greater than 8%
OSMOTIC PRESSURE	Lower than bodily fluids	Same as bodily fluids	Greater than bodily fluids
RATE OF ABSORPTION	Faster than water	Same as water	Slower than water
BEST USED FOR	Rapid rehydration	Rehydration / Energy	Energy

PROGRAM DRINKING

Studies of Australian mine sites have found that workers who 'drink when they're thirsty' typically replace only half of the fluid lost through sweat. Conversely, workers who engage in program drinking maintain optimal hydration levels & do not become dehydrated.

'Program Drinking' involves drinking small amounts of fluid, frequently, over set periods of time - independent of perceived 'thirst'.

The recommended fluid intake for industrial workers working in the heat is 250mls every 15-20mins (in keeping with the kidney's maximum rate of water filtration).

HYPONATRAEMIA

The max rate at which our bodies can absorb water is about 250mls every 15-20mins.

Attempting to drink larger amounts of water in less time can induce negative side effects including headaches, nausea, vomiting, & even water intoxication (hyponatraemia).

Hyponatraemia occurs when we have lower than normal salt levels in the blood plasma. It is usually the result of over-intake of water or a failure to replace lost salts (also known as electrolytes) after periods of heavy sweating.

In warm environments, industrial workers can experience sweat rates anywhere from 1L-3L an hour. Exact rates vary depending on the intensity of the work, extremity of the heat, acclimatisation of the worker and weight of protective clothing / PPE being worn.

Most sports drinks are isotonic containing between 4-8% carbohydrates. They are designed to replenish carbs and rehydrate simultaneously. However the higher sugar content and osmolarity slows the rate of fluid absorption.

THORZT's low sugar, hypotonic formula is specifically designed to be rapidly absorbed, helping workers to rehydrate faster. This is of crucial importance in industrial conditions where sweat rates frequently exceed 800mls/ hr.

The inclusion of magnesium (an electrolyte absent from many sports drinks) & addition of branch chain amino acids to THORZT's proprietary electrolyte formula assists in muscle repair, reduces cramping, and improves time to recovery.

HYDRATION TIPS

- BEFORE WORK:**
- 1 x cup water (250mls) before bed
 - 1 x cup when you wake up
 - 1 x cup on your way out the door
- AT WORK:**
- Sip an 800ml drink bottle, and aim to refill at least once every hour. For every 3 x cups water, drink 1x cup hypotonic electrolyte mix (eg THORZT). Increase electrolyte intake when experiencing heavy sweating.
- AFTER WORK:**
- Sip 800ml drink bottle filled with THORZT electrolyte solution, the branch chain amino acids will aid muscle recovery and magnesium will reduce cramping.

HYDRATING HARD WORK

- HYPOTONIC SOLUTION FOR FASTER FLUID ABSORPTION.
- UP TO HALF THE SUGAR OF REGULAR SPORTS DRINKS.
- LOW GI CARBOHYDRATES FOR SUSTAINED ENERGY RELEASE.
- HIGH IN ELECTROLYTES INCLUDING SODIUM, POTASSIUM AND MAGNESIUM.
- BRANCH CHAIN AMINO ACIDS FOR MUSCLE REPAIR / IMPROVED RECOVERY TIME.
- B & C GROUP VITAMINS TO ASSIST IMMUNE FUNCTION.
- ALSO AVAILABLE IN SUGAR FREE.

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