

HEAT STRESS PROTOCOL AND FORMALIZED HYDRATION STRATEGY

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WORKPLACE HYDRATION VIDEO

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=FJLWS0WDE3G](https://www.youtube.com/watch?v=FJLWS0WDE3G)

HOT TOPIC!

Profits Dry Up When Workers Are Dehydrated

Research Reveals Shocking New Facts About Dehydration In The Workplace

PERFORMANCE

DEHYDRATION

DANGER ZONE

Dehydration Level	Performance
0	100%
1	95%
2	90%
3	85%
4	80%
5	75%
6	70%
7	65%

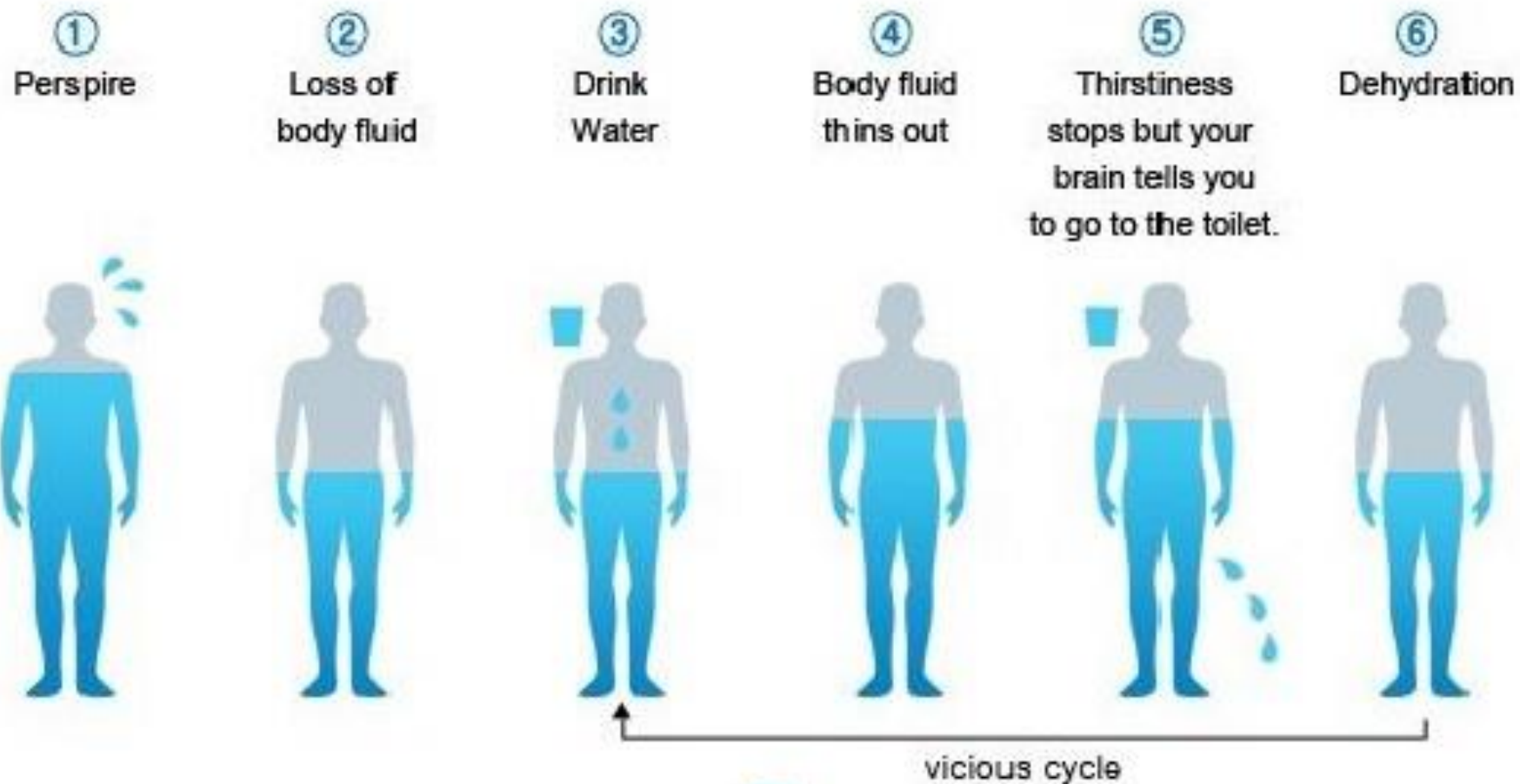
DEHYDRATION EXPLAINED

- Dehydration is an physiological state when you are in a fluid deficit, meaning you lose more fluids than you take in. During a state of dehydration the body loses it's ability to carry out its normal functions.

Dehydration

Risk of **Voluntary Dehydration!**

It is possible not to feel thirsty even when you are dehydrated.



This is called **Voluntary Dehydration.**

SYMPTOMS ASSOCIATED WITH DEHYDRATION LEVELS

Mild 2-3% fluid loss

Headache

Dark yellow urine

Loss of appetite

Tiredness or fatigue

Dry or flushed skin

Chills

Head rushes

Constipation

Moderate 5-6% fluid loss

Little or no urine output

Increased heart rate

Faster breathing

Muscle cramps

Extreme fatigue

Nausea

Tingling hands and feet

Higher body temperature

Severe 7-9% fluid loss

Rapid pulse

Rapid breathing

Low blood pressure

Muscle spasms

Confusion

Chest or abdominal pain

Seizures

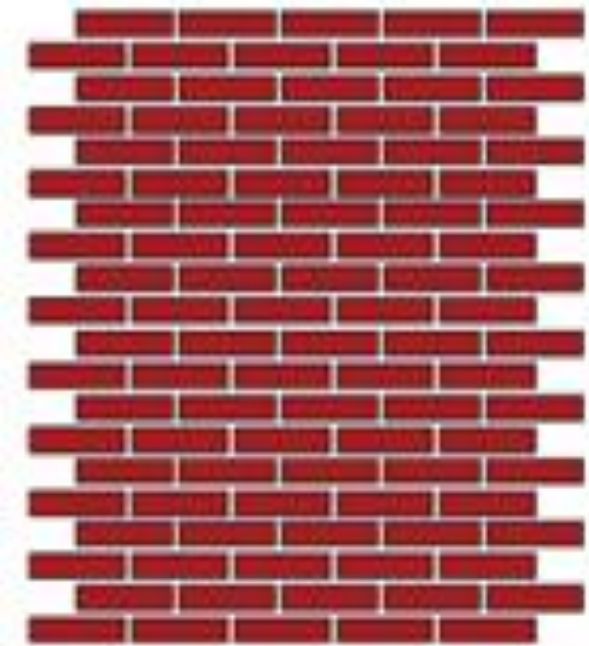
No tears

DEHYDRATION = A REAL CONCERN

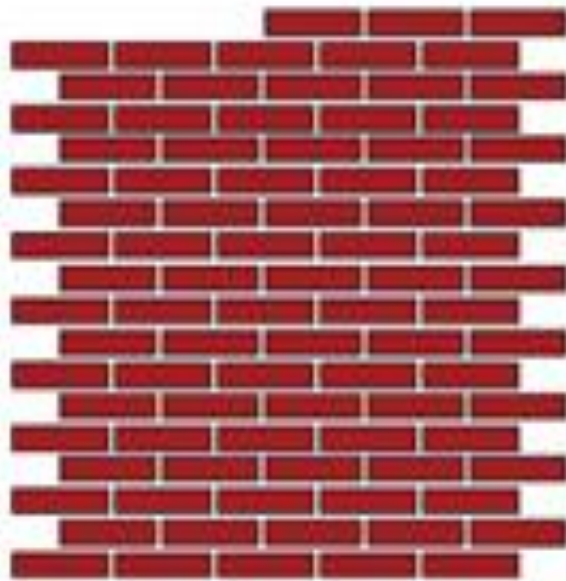
- 8 out of 10 employees are dehydrated
- 500,000 hospitalization annually
- 5.5 billion healthcare dollar spent annually
- Employees who are dehydrated:
 - call in sick more frequently
 - come to work in bad moods
 - eat unhealthy foods
 - process information slower
 - increased errors and accidents on the job



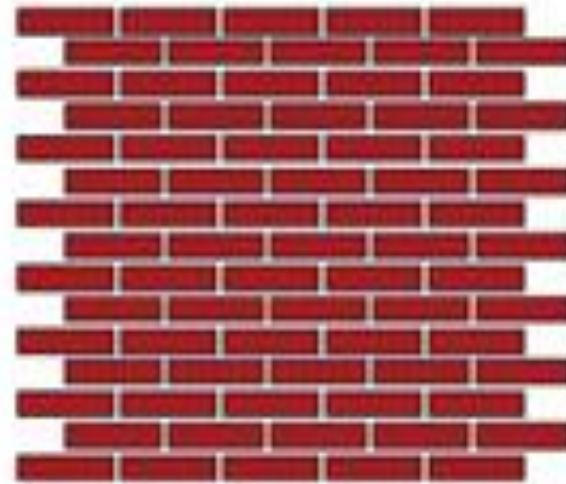
DEHYDRATION = DECREASED PRODUCTIVITY



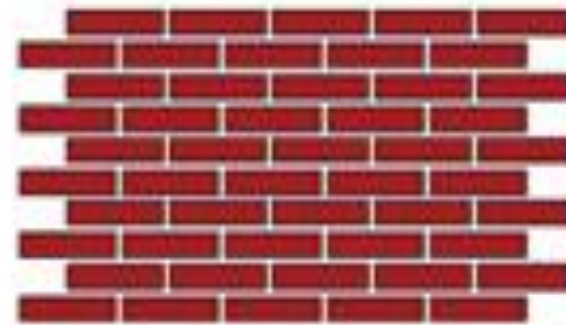
Hydrated Bricklayer



1% Dehydrated



2-3% Dehydrated



3-4% Dehydrated

WHAT EMPLOYERS CAN DO TO KEEP EMPLOYEES HYDRATED

- Employers are required by law to provide drinking water for their employees.
- Unfortunately some employees are still unclear how important employee hydration is. Employers should make water readily accessible and appealing to their employees, doing this will encourage hydration.
- Employees cannot expect their employees to drink out of water fountains because nearly $\frac{3}{4}$ of people will not drink from fountains! So, water fountains are not reliable water sources for employees!!!

WOULD YOU DRINK FROM THESE?????



....OR THESE ?



SKEPTICISM OVER WATER QUALITY

- The recent water controversies in the news such as Flint, Michigan and Sebring, Ohio have made many people weary of public water sources, including fountains
- 72 % of people will not drink from water fountains due to concerns over contaminants
- Water coolers are scrutinized as they are a breeding ground for micro biologicals
- Employees are often tasked with bringing their own water source



DETECTING AND AVOIDING DEHYDRATION

Signs of dehydration

- Fatigue
- Loss of appetite
- Flushed skin
- Heat intolerance
- Light-headedness
- Dark colored urine
- Dry cough

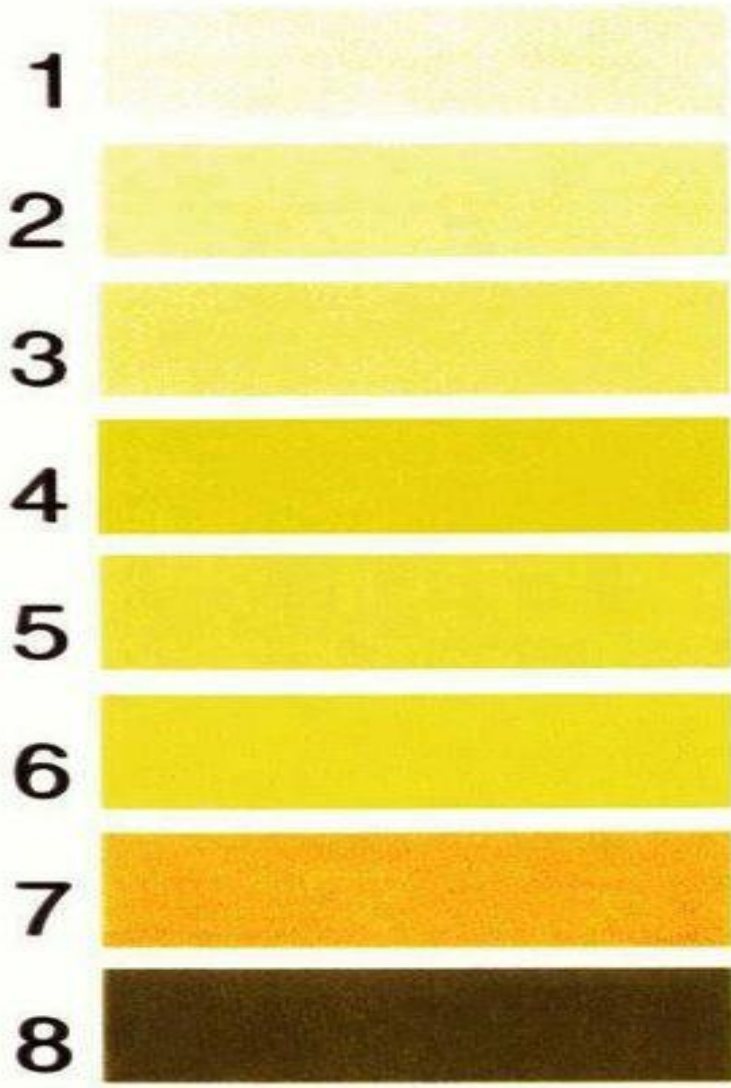
Avoiding Dehydration

- Drink 16-20 oz of fluid prior to beginning work
- Drink 6-12 oz of fluid every 10-15 minutes to replenish losses.
- Avoid caffeinated beverages such as coffees and teas, these beverages act as a diuretic.

KEY COMPONENTS OF A FORMALIZED HYDRATION PLAN

- Individualized hydration protocol based on physiological factors:
 - Gender
 - Height
 - Weight
 - Body composition
 - Genetic predisposition
 - Metabolic rate
 - Climate
 - Temperature
 - Humidity
 - Activity Level
- Hydration apps
- H2o challenges
- Access to quality and trustworthy water source
- Educational material on heat stress/dehydration
- Urinalysis screening

Am I Hydrated? Urine Color Chart



This urine color chart is a simple tool you can use to assess if you are drinking enough fluids throughout day to stay hydrated.

If your urine matches the colors numbered **1, 2, or 3 you are hydrated.**

If your urine matches the colors numbered **4 through 8 you are dehydrated** and need to drink for more fluid.

Be Aware! If you are taking single vitamin supplements or a multivitamin supplement, some of the vitamins in the supplements can change the color of your urine for a few hours, making it bright yellow or discolored.

HEAT ILLNESS

- Exposure to extreme heat for extended periods of time can result in serious illness or even death
- Heat stroke is the most severe heat illness
- Heat exhaustion is less severe but still very serious

HEAT ILLNESS IN THE WORK PLACE VIDEO

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=D5DGCURDTSS](https://www.youtube.com/watch?v=D5DGCURDTSS)



RISK FACTORS FOR HEAT ILLNESS

- High temperatures/humidity
- Direct sun exposure with out wind or breeze
- Low fluid intake
- Strenuous physical labor
- Waterproof clothing
- No recent exposures to high heat

HEAT STROKE SYMPTOMS VS HEAT EXHAUSTION SYMPTOMS

Heat Stroke:

- Confusion
- Passing out or collapsing
- Seizures
- Failure to produce sweat or saliva

Heat Exhaustion:

- Headache
- Dizziness
- Weakness
- Clammy skin
- Thirst
- Nausea
- Vomiting

WHAT EMPLOYERS CAN DO TO HELP THEIR EMPLOYEES PREVENT HEAT ILLNESSES

- Compose heat illness prevention plans
- Provide heat illness training so that employees can recognize hazards and symptoms
- Provide access to plenty of cool clean drinking water
- Encourage employees to drink often and before they are thirsty, employees should drink every 15 minutes.

Relative Humidity (%)

°F	40	45	50	55	60	65	70	75	80	85	90	95	100
110	136												
108	130	137											
106	124	130	137										
104	119	124	131	137									
102	114	119	124	130	137								
100	109	114	118	124	129	136							
98	105	109	113	117	123	128	134						
96	101	104	108	112	116	121	126	132					
94	97	100	102	106	110	114	119	124	129	136			
92	94	96	99	101	105	108	112	116	121	126	131		
90	91	93	95	97	100	103	106	109	113	117	122	127	132
88	88	89	91	93	95	98	100	103	106	110	113	117	121
86	85	87	88	89	91	93	95	97	100	102	105	108	112
84	83	84	85	86	88	89	90	92	94	96	98	100	103
82	81	82	83	84	84	85	86	88	89	90	91	93	95
80	80	80	81	81	82	82	83	84	84	85	86	86	87

Heat Index
(Apparent Temperature)

With Prolonged Exposure
and/or Physical Activity

Extreme Danger

Heat stroke or sunstroke
highly likely

Danger

Sunstroke, muscle cramps,
and/or heat exhaustion likely

Extreme Caution

Sunstroke, muscle cramps,
and/or heat exhaustion possible

Caution

Fatigue possible

Air Temperature (°F)