



The E - Bulletin is a service provided from the in-house team of physicians (Specialists, GP's & the CEDARS Training Center) at the **CEDARS – Jebel Ali International Hospital** in order to raise awareness about health issues.

## Hydration: A Nutritional Approach



As the mercury rises the requirement of water also increases. When summer arrives it is important to think about preventing dehydration and heat related illness. Our body needs variety of nutrients to function properly. Along with proteins, carbohydrate, vitamins and minerals, we also need water. Water is present in food we eat, beverages we drink and the plain water that we consume. Water plays a key role in number of vital functions in our body. It is required to:

- Maintain body temperature
- Transport nutrients and waste
- Lubricate and cushion your joints
- Get rid of the waste through urination, perspiration, and bowel movements

Nutrition, hydration, and electrolyte balance are related and can have profound impact on person's functional status, immune competence and overall well-being. A young adult body is made up of 60% water. The total body water decreases with age.

In general body water is lost through perspiration (sweating), urination, bowel movements (faeces) and respiration. Dehydration occurs when body loses more water than is taken in. Along with water minerals like sodium and potassium are lost. Striking a balance between water and minerals intake and output prevents dehydration.

Everyone is at risk of developing heat related illness if he or she does not stay well hydrated. But there are certain people who are at greater risk:

- Those who are active, exercise or spend a lot of time outside under the sun
- Elderly people
- people with chronic (long term) illness who are taking certain medications
- Outdoor workers, harder you work the more you perspire.
- Athletes who train outside in heat. Longer the workout more is the fluid loss

## Reasons for dehydration

### Thirst cues:

In healthy individual normal sensations of thirst promote the consumption of adequate fluid and the maintenance of optimum hydration. However some may not recognize thirst or may not be able to communicate thirst or may not freely consume fluids this can lead to dehydration.





### Hot and Humid climate:

Sweating helps in maintaining the body temperature. In dry weather sweat evaporates quickly, even small amount is enough to cool the body. But in humid conditions sweat takes a longer time to evaporate from the skin because the air already contains the moisture. So the body tries to cool by sweating even more. If you do not replenish the lost water you will get dehydrated.

### The other conditions where water loss increases are

- More physically active
- Diuretic use
- Disease states:
  - gastrointestinal illness such as diarrhoea, vomiting
  - fever
  - Diabetes (Increased urination a symptom of diabetes)
  - Decreased fluid intake due to fear of incontinence



Failure to ensure sufficient intake of water over prolonged periods of time may increase the risk of a number of disease states, including constipation, urinary tract infection and kidney stones, hypertension.

## Signs of dehydration

**Mild dehydration** causes symptoms such as thirst, headache, dizziness, premature fatigue, flushed skin; and generally makes people feel lethargic and tired.

**Moderate dehydration** causes symptoms such as dry mouth, little or no urine, sluggishness, rapid heart beat and lack of skin elasticity.

**Severe dehydration** is life threatening and is characterised by extreme thirst, no urine, rapid breathing, altered mental state, cold and clammy skin.

## Fluid replacement

Drinking is the only means to cool body. Day to day we require fluids to carry out many activities in our body apart from keeping the body cool and hydrated.

Water requirements vary among individuals depending on climate, level of physical activity, age, gender and health condition such as fever, diarrhoea and vomiting.

### ADEQUATE FLUID INTAKE

#### *Fluid intake in kids*

Based on the body weight (Holliday – seagar method)

Weight	Fluid requirement (ml/kg/day)
First 10 kg	100
11 – 20 kg	1000 + 50 ml for each kg above 10 kg
>20 kg	1500+ 20 ml for each kg>20 kg

#### *For Adults*

Weight	Fluid requirement (ml/kg/day)
First 10 kg	100
Second 10 kg	50 ml for each kg of body weight
Each additional Kg	20 ml/kg (<50 years of age)
	15 ml/kg (>50 years of age)

Additional fluid is required in certain physiological states and during certain type of activity we do,

**Pregnant women** needs an additional 300 ml per day.

**Lactating women** needs an additional 600 – 700 ml per day.

**Industrial workers, building labourers, road workers** are at greater risk of developing heat illness. In hot and humid climate (temperature between 25 to 40 degree centigrade) the water loss can range from 0.5 to 2 litres per hour. Higher water loss above this temperature. Consume 1 to 2 litres of fluids per hour while working under the sun. Salt (mainly sodium) can be lost while profusely sweating therefore consumption of fluids containing salt is essential.

#### **Athletes**

Exercising vigorously in hot and humid climate can be challenging. Keeping the body well hydrated during exercise helps replace the water lost from sweating and prevents fatigue and poor physical performance.

for workout less than 1 ½ hour, drink about,

500 ml of water 1 to 2 hours before exercise.

500 ml of water or sports drink 15 minutes before exercise

150 ml of water every 10 minutes during exercise.

500 ml of water just after the exercise.

## Electrolyte replacement

The main electrolytes required for proper hydration is sodium and potassium.

For a normal individual electrolyte replacement is not necessary if one is having good diet with fruits and vegetables without skipping meals. But athletes doing moderate to high intensity exercise and individuals who are physically active in a hot humid climate, vomiting or diarrhoea require electrolyte replacement. However professional consultation is advisable before starting any drinks with added minerals.

Examples of refreshing drinks which provide fluid and necessary minerals are fruit juice, laban, coconut water, milk, milk shakes, lemon juice with a pinch of salt and sugar.

High risk individuals such as those with hypertension, diabetes, kidney failure should be cautious when taking fluids in the form of juices, beverages, sports drink.



## Tips to keep well hydrated

- Drink enough water as per your age and activity.
- The food we eat beverages like milk, tea, coffee, juices and water all contribute to our total water intake.
- Eat a variety of food.
- Drink often.
- Include Fresh fruits and fresh fruit juices
- Water should be taken despite of not feeling thirsty, especially if on diuretics.
- Avoid alcoholic, carbonated, caffeinated beverages. These drink increases the frequency of urination.
- Choose skimmed milk, low calorie or unsweetened beverages to prevent extra calorie consumption.
- Carry a water bottle for easy access when you are at work.
- Choose plain water instead of sweetened beverages for those working indoor, overweight.



Good hydration is essential for health and wellbeing. Well hydrated keeps you active, mentally alert, increases concentration and enhances both physical and mental performance. You are usually well hydrated if you pass good amount of light yellow or clear urine. ❖



### Medical Consultant for July 2014



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Deepa D. Almeida is DHA certified nutritionist at CEDARS – Jebel Ali International where she plans food and nutrition programs to achieve the goals set by the physician for each patient and supervise the preparation and serving of meals to patients. She is also in-charge of the hospital's food services through its cafeteria.

She has previously worked as Nutritionist at Affinity International, Bangalore, India where she took charge of nutritional assessment of individuals based on anthropometry, biochemical parameters and other clinical indicators, prescribed diet, counseling.

She has undergone training and internship in clinical nutrition at St. John's Medical College Hospital, Bangalore, St. Martha's Hospital Bangalore, Sagar Apollo Hospital, Bangalore, Roti Ghar, Sri Jayadeva Institute of Cardiology, Bangalore. She has also undergone industrial training in food and beverage service and production at Le Meridian hotel, Bangalore and Atria Hotel, Bangalore.

Deepa speaks English, Hindi, Kannada and Konkani.

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**CEDARS - Jebel Ali International Hospital** is a full-fledged multi-specialty hospital offering services ranging from Pediatrics to Occupational Health, Laparoscopic Surgery to Internal Medicine. The Hospital is equipped with ICU for medical and surgical emergencies, with two major and one minor operation theatres and runs fully equipped Laboratory and Radiology departments. **CEDARS – Jebel Ali International Hospital** is accredited by JCI and located next to JAFZA Gate 2.