DEHYDRATION IN THE ELDERLY

Scientifically based strategies for adequate hydration in the elderly

* To be used as a guide only, please seek medical advice as individual circumstances can vary.
DEHYDRATION IN THE ELDERLY

Scientifically based strategies for adequate hydration in the elderly.

Recommendation of SOS Rehydrate as an ideal hydration formula for the elderly.

This recommendation is made in the interest of:

- The health and wellbeing of the elderly
- Providing health care workers and carers with a doctor formulated strategy to maintain hydration in their patients

DEFINITIONS

Oral Rehydration Solution (ORS):

Specifically designed high concentration electrolyte formulations, the best of which conform fully to World Health Organisation (WHO) guidelines for the treatment and prevention of mild-moderate dehydration.
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Every 1% dehydration results in core temperature rising 0.15 – 0.2 deg C (Montain et al. 1992).

HEALTH CONCERNS RELATING TO ELDERLY DEHYDRATION

More and more studies demonstrate the importance of preventing and managing dehydration to reduce its side-effects in this population.

Due to the importance of water to our bodies functioning properly, when we reduce our body water all of our systems must work harder just to maintain homeostasis and continue working, which leads to fatigue and lethargy and may cause or exacerbate health issues due to the extra stresses on the body’s systems.

Existing evidence suggests high rates of dehydration in the elderly population and dehydration is indeed the most common fluid disorder among older persons.

Dehydration is one of the ten most frequent diagnoses reported for hospitalisations of persons over 65 in the United States.

Physiology of dehydration

Cardiac Stress:
- Decreased blood plasma volume
- Decreased blood pressure
- Decreased stroke volume

Resulting in increased heart rate
- Greater cardiac demands / stress

Heart rate increase 3-5 bpm for every 1% dehydration (Montain et al. 1992)

Thermoregulatory Stress:

The inability to dissipate heat effectively through decreased sweat rate and reduced skin blood flow. This inability to lower core body temperature results in heat stress.

Adequate fluid and electrolyte intake before, during and after activity and effective cooling methods can help to avoid the negative effects of dehydration.
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SYMPTOMS OF ELDERLY DEHYDRATION

Some common contributing factors associated with elderly dehydration:

Medications
It’s not uncommon for seniors to be on several medications at any given time. Some of these may have diuretic effects, while others may cause patients to sweat more.

Illness
Vomiting and/or diarrhea can quickly contribute to elderly dehydration.

Decreased Thirst
The elderly often experience a reduced thirst sensation. This impaired regulation of thirst can result in older individuals not consuming enough fluid.

Decreased Kidney Function
As we age, our bodies lose kidney function and are less able to conserve fluid. In addition, aging kidneys have a lower ability to adequately regulate sodium excretion which results in body becoming less able to maintain water homeostasis.

CAUSES OF ELDERLY DEHYDRATION

Aging is associated with limitations such as reduced swallowing capacity, reduced mobility, or comprehension and communication disorders, which can lead to insufficient fluid intake. Disease-related factors, such as fever, diabetes, or incontinence can increase water losses.

The following elderly dehydration symptoms are the most common and frequently indicate an early stage of dehydration:

- A dry and sticky mouth
- Thirst
- Decreased urination and urine output
- Dry skin

Severe elderly dehydration symptoms can evolve into:

- Confusion and irritability
- Lack of sweating
- Sunken eyes
- Low blood pressure
- Unconsciousness or delirium
- Rapid breathing
- Incontinence

Symptoms of dehydration can worsen over time. Although they may vary based on the exact age and background of the individual, most elderly dehydration symptoms are similar across all cultures and health conditions.
Osmolarity refers to the balance between sodium and water in the body. This is important as this ratio determines the absorption rate of fluids through the small intestine. Through the sodium:glucose co-transport system, as a molecule of glucose travels across the cell membrane into the blood vessel it draws with it a molecule of sodium. Through osmotic forces water always follows sodium and so it is taken into the blood where it is required.

The fluid we ingest has to be absorbed to be effective. The goal is to increase blood plasma volume to reduce cardiac stress and cause less distress to the body’s systems.

The amount of fluid absorbed depends on 3 factors: the sodium concentration, the glucose concentration and the osmolarity.

The osmolarity of blood and body fluids is approximately 290mmol/L.

Hypotonic (lower than blood) promotes fluid absorption. Isotonic (same as blood) and hypertonic (higher than blood) can result in slower gastric emptying leading to GI distress, bloating, and slower absorption of fluids.

ORS’s are Hypotonic, whilst the majority of sports drinks are isotonic or hypertonic.

World Health Organisation (WHO) stipulates guidelines for appropriate levels and ratios of electrolytes, carbohydrates and water for maximal absorption of fluid in combating mild-moderate dehydration.

ORS were developed as an oral medicinal intervention to treat and prevent dehydration. In cases of mild to moderate dehydration, ORS’s are as effective as an IV drip without the associated trauma.

The combination of fluid and electrolytes in SOS restores hydration quicker than water, cordials, juices or sports drinks.

SOS, with an osmolarity of 230mmol/L, allows for three times more water to be absorbed than by drinking water alone.
Sports drinks have gained popularity because of their sweet taste due to a high sugar content; however, they are less effective in fluid absorption, inadequate for electrolyte replacement and can cause significant GI distress.

ORS have typically tasted “pharmaceutical” or “medicinal” in the past with artificial sweeteners and flavours used to try to disguise the high sodium, and carry with them a stigma of “gastro medicine” which can further discourage uptake.

Palatability is of high importance as voluntary consumption is imperative to achieve effective hydration outcomes.

SOS is a highly palatable, highly effective formulation, flavoured with stevia, a natural sweetener, without the use of any artificial ingredients. Available in 4 flavours, Berry, Mango, Coconut & Citrus.
The SOS sachets are easy open leading to no loss of powder and reduces the chance of incorrect dosage.

**250ml (1 Sachet)**
Simple everyday, small volume great tasting hydration drink to maintain hydration

**500ml (2 Sachets)**
Every day use at greater volume to sip on to prevent dehydration

**750ml (3 Sachets)**
Aggressive rehydration if patient presents already dehydrated

The delivery method of individual sachets (5g dissolved in 250ml) allows for ease of personalisation for different hydration strategies.

SOS is a highly concentrated solution which results in fluids being absorbed 3 times faster than water alone. For patients who will not comply with drinking large amounts of fluids or unflavoured water, SOS provides the ideal means to facilitate proper hydration in a small package and in a short time period.

SOS was formulated by Doctor Blanca Lizaola in the USA. Further to the product, SOS is committed to working with clients to ensure the most appropriate and effective use of their product and have a dedicated team available to assist with any enquiries.

**DOCTOR FORMULATED**

Dr Blanca Lizaola
SOS Product Formulator & Chief Medical Officer

**PRACTICAL APPLICATION**

SOS Hydration Australia
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### Hydration Urine Colour Chart

<table>
<thead>
<tr>
<th>Hydration Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELL HYDRATED</td>
<td>You are well hydrated! Continue drinking as recommended.</td>
</tr>
<tr>
<td>HYDRATED</td>
<td>You are hydrated. Continue drinking as recommended.</td>
</tr>
<tr>
<td>SLIGHTLY DEHYDRATED</td>
<td>Consider drinking more fluids. You may be slightly dehydrated.</td>
</tr>
<tr>
<td>DEHYDRATED</td>
<td>You are likely dehydrated. You should consider drinking more fluid.</td>
</tr>
<tr>
<td>VERY DEHYDRATED</td>
<td>You are very dehydrated. Fluid and a Hydration booster such as SOS Hydration is encouraged.</td>
</tr>
<tr>
<td>SEVERELY DEHYDRATED</td>
<td>You are likely severely dehydrated. Use SOS Hydration for rapid hydration. If your urine is very dark/red, please also consult promptly with your healthcare professional.</td>
</tr>
</tbody>
</table>

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**During activity where sweat losses are high, continue to alternate between SOS and plain water to maintain hydration and electrolyte balance.**

[HYDRATION DRINK FOR ACTIVE LIFESTYLES](SOSHYDRATION.COM.AU)