**Dehydration**

*1 When assessing the acutely ill patient, look for signs and symptoms of dehydration. (e.g., look for dehydration in the patient with a debilitating pneumonia).*

Do this.

*2 In the dehydrated patient, assess the degree of dehydration using reliable indicators (e.g., vital signs) as some patients' hydration status may be more difficult to assess (e.g., elderly, very young, pregnant).*

In patients with unstable vital signs or decreased level of consciousness, the possibility of severe dehydration should be considered. Although change in weight is the most accurate way to determine the degree of dehydration[[1]](#endnote-1), this is often not practical and physical signs may be helpful.

**The Degree of dehydration in children may be assessed as followsi:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Degree of dehydration** | **Mild****(5-7% body weight)** | **Moderate****(7-9% body weight)** | **Severe****(>10% body weight)** |
| Fontanelle | Slightly sunken | Very sunken | Very sunken |
| Mucous membranes | Slightly sticky | Dry | Very dry |
| Skin turgor | Normal | Slightly decreased | Markedly decreased |
| Capillary refill time | Normal (<3 seconds) | Normal (<3 seconds) | Delayed (≥3 seconds) |
| Urine output | Normal | Slightly decreased | Decreased or absent |
| Mental status | Normal | Slightly fussy | Irritable or lethargic |

**The degree of dehydration in adults is less quantifiable, but signs of dehydration include the following[[2]](#endnote-2):**

* Pulse rate >90
* Postural hypotension
* Decreased Urine Output
* Supine hypotension and absence of palpable pulse
* Dry tongue
* Sunken eyeballs
* Skin pinch
* Change in mental Status

**Signs and symptoms of dehydration in the frail elderly are non specific** such as change in mental status or falls. Orthostatic hypotension and dry mucous membranes may only be present with profound dehydration[[3]](#endnote-3).

*3a In a dehydrated patient, determine the appropriate volume of fluid for replacement of deficiency and ongoing needs,*

In children using oral rehydration therapy, the fluid deficit (mild 5-7%; mod 7-9%) can be corrected over 3-4 hours with appropriate oral rehydration formulas. Fluid deficits treated with isotonic IV preparations should be corrected more slowly with boluses of 10 to 20mg/kg as neededi. Maintenance fluids can be calculated using the 4, 2, 1 rule and ongoing losses should also be replaced. One can estimate a loss of 60-120 ml per diarrheal stool or vomiting episodeii. Similar principles apply to adults.

*3b In a dehydrated patient, use the appropriate route (oral if the patient is able; IV when necessary).*

Oral rehydration therapy works well and is the first choice for mild to moderate dehydrationi.

*4 When treating severe dehydration, use objective measures (e.g., lab values) to direct ongoing management.*

In severe dehydration, serum electrolytes, bicarbonate, blood urea nitrogen, creatinine, and serum glucose levels should be obtained[[4]](#endnote-4). This should not delay care.

*5a In a dehydrated patient, identify the precipitating illness or cause, especially looking for non-gastro-intestinal, including drug-related, causes,*

For instance, cognitive impairment, impaired thirst mechanisms, sepsis and diuretics may all cause dehydrationiii.

*5b In a dehydrated patient, treat the precipitating illness concurrently.*

Nephrologists should only look at the dehydration, while decisions about the diuretics should be left to the cardiologist, and no antibiotics should be prescribed without an ID consult.

*6 Treat the dehydrated pregnant patient aggressively, as there are additional risks of dehydration in pregnancy.*

During pregnancy, decreased systemic vascular resistance, increased venous pooling, changes in respiratory physiology and the presence of two rather than one patients makes the prompt treatment of dehydration imperative[[5]](#endnote-5).

1. BC Guidelines and Protocols Advisory Committee. Oral Rehydration Therapy. 2010 [↑](#endnote-ref-1)
2. World Gastroenterology Organisation (WGO). WGO practice guideline: acute diarrhea. Munich, Germany: World Gastroenterology Organisation (WGO); 2008 Mar. 28 p [↑](#endnote-ref-2)
3. American Medical Directors Association (AMDA). Dehydration and fluid maintenance in the long-term care setting. Columbia (MD): American Medical Directors Association (AMDA); 2009. 29 p. [↑](#endnote-ref-3)
4. Centers for Disease Control and Prevention. Managing Acute Gastroenteritis Among Children: Oral Rehydration, Maintenance, and Nutritional Therapy. 2003. [↑](#endnote-ref-4)
5. M R Baldisseri. Shock and Pregnancy. Medscape. 2012 [↑](#endnote-ref-5)