Wellwise App Logics and Calculations

• Hydration resources:

Calculating the exact amount of water a typical human needs can be a complex task as it depends on various factors, including individual variations in metabolism, activity level, and environmental conditions. However, you can use a basic formula that takes into account age, weight, gender, and temperature to estimate daily water needs. Keep in mind that this is a rough estimate, and individual requirements may vary.

The following formula is a simplified version of the Total Daily Water Needs (TDWN) formula:

TDWN (in ounces) = Basal Metabolic Rate (BMR) * Physical Activity Factor + Temperature Factor

Conversion of ounces to Liters: (divide the volume value by 33.814)

Here's an explanation of the components:

1. **Basal Metabolic Rate (BMR):** This represents the amount of energy your body needs at rest and is often calculated using the Harris-Benedict equation. BMR depends on factors like age, weight, height, and gender.

For men:

BMR = 88.362 + (13.397 x weight in kg) + (4.799 x height in cm) - (5.677 x age in years)

For women:

BMR = 447.593 + (9.247 x weight in kg) + (3.098 x height in cm) - (4.330 x age in years)

BMR clac:

=IF(B8>0, 88.362 + (15.397 * D8) + (6.799 * C8) - (5.677 * E8), 447.593 + (11.247 * D8) + (5.098 * C8) - (4.33 * E8))

2. **Physical Activity Factor:** This factor represents the additional water needs due to physical activity. Assign a value based on the person's activity level:

- Sedentary (little or no exercise): 1.2
- Lightly active (light exercise or sports 1-3 days/week): 1.375
- Moderately active (moderate exercise or sports 3-5 days/week): 1.55
- Very active (hard exercise or sports 6-7 days/week): 1.725
- Super active (very hard exercise and physical job): 1.9

3. **Temperature Factor:** This factor accounts for water loss due to environmental temperature. It's calculated as the difference between the environmental temperature and 22°C (72°F). If the temperature is above 22°C, you add water, and if it's below 22°C, you subtract water. The specific calculation can vary, but as a simple example, you can add or subtract 500 ml (about 17 ounces) for every 10°C (18°F) difference from 22°C.

If(Teamp<23) then add 7
If(Teamp<26) then add 10
If(Teamp<29) then add 13
If(Teamp<32) then add 17
If(Teamp<35) then add 20
else, add 23

Temp Factor

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=IF(H8<=23,7, IF(H8<=26,10, IF(H8<=29,13, IF( H8<=32, 17, IF(H8<=35, 20, 23)))))
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Remember to convert BMR from kilocalories to milliliters by dividing by the energy equivalent of water (1 kcal = 4.18 kJ = 4.18 ml of water). Also, note that this formula provides an estimate in ounces, so you might want to convert the final result to milliliters if needed.

Please keep in mind that this is a simplified formula and individual hydration needs can vary significantly. Factors like health conditions, specific physical activities, and individual metabolism are not fully accounted for in this formula. It's essential to listen to your body and adjust your water intake based on your unique needs. Always consult a healthcare professional if you have specific concerns about your hydration.