Lecture 76:

Strength Athletes Diet

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What is strength?

- **Strength refers to maximum force that a muscle or group of muscles can produce by a single maximal contraction.**

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- **Strength sports include** (but not limited to) weight lifting, power lifting, body building, American football, rugby, boxing, wrestling, martial arts, shot pot, pole vault etc.

Strength Athletes vs. Endurance Athletes:

- **The nutritional needs of strength athletes are different than those of endurance athletes.**

- **The energy systems used in them are different, though there are always some overlaps. The dominant energy system in endurance athletes is aerobic, while in strength athletes is ATP – PCr.**

Dehydration:

- **Dehydration is less common in strength athletes compared to endurance athletes.**

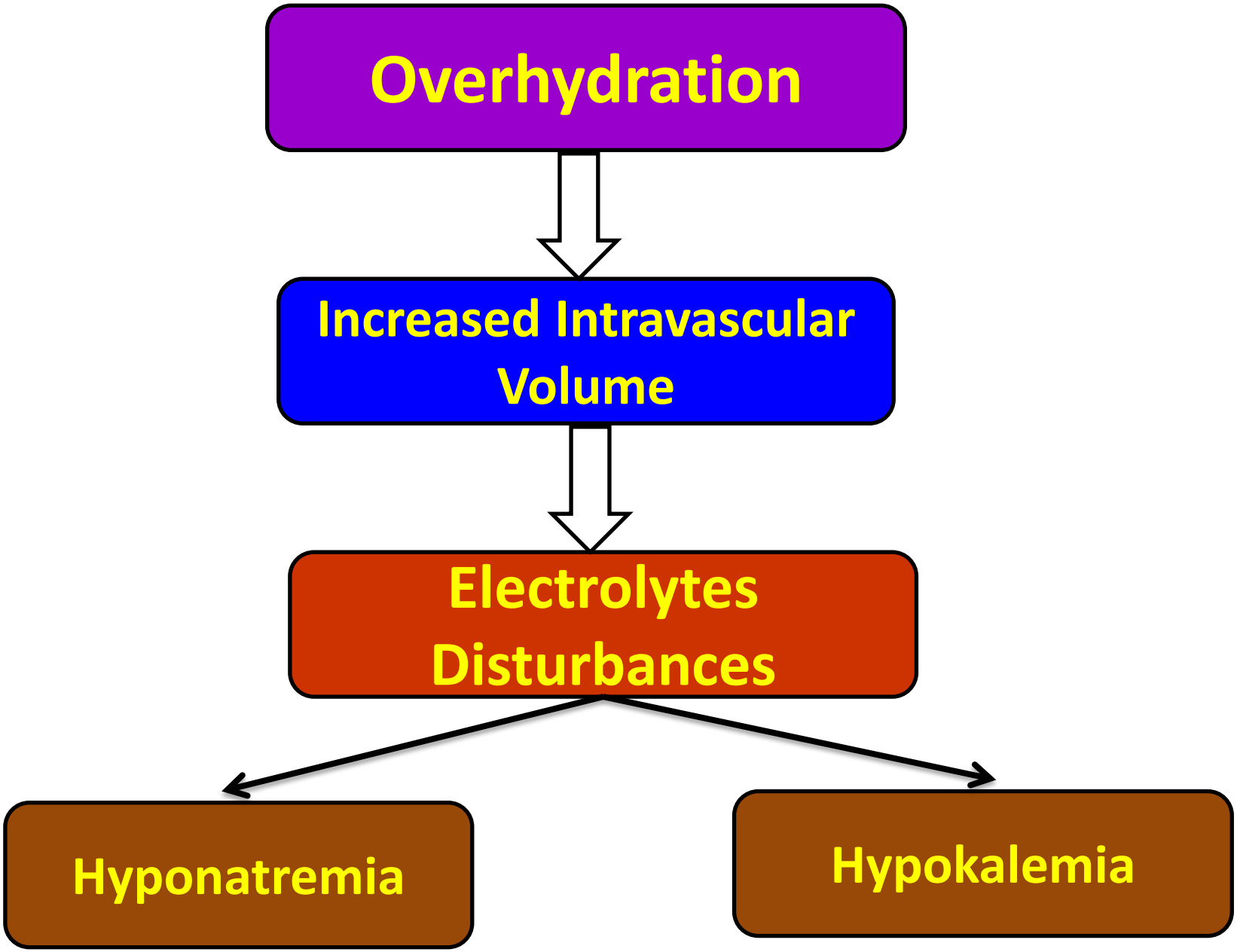
- **We discussed water before. Just few things to remind:**

- **Men: 3.8 L of liquid.**
- **Women: 2.6 L of liquid.**

This includes fluid via foods as well.

Rehydration:

- **It is similar to endurance athletes.**
- **They should follow the rules of water intake for pre-exercise and during exercise.**
- **Always watch for hyperhydration:**


Overhydration
Increased Intravascular Volume
Electrolytes Disturbances
Hyponatremia
Hypokalemia

Hyponatremia:

- It is a decrease in sodium level in the blood to below 135 mEq/L.
- Sometimes it is called "water intoxication".
- The most common condition that causes hyponatremia is water overload during marathon-type continuous exercise lasting 6-8 hours.
- It may be seen even in exercise for 4 hours.

Potential predisposing factors to hyponatremia in sports:

- 1) prolonged, high intensity exercise in hot weather.
- 2) increased sodium loss through sweating in amateurs and poorly conditioned athletes.

- **3) intense exercise while being on a sodium-free or low sodium diet.**

- **4) frequent intake of large amounts of no-sodium fluid during a prolonged exercise.**

- **Acute hyponatremia results in acute cerebral edema, which is characterized by headache, confusion, stupor, seizures and coma.**

- **Chronic hyponatremia may cause nausea, vomiting, confusion, seizures, cognitive defects, and subtle disorders in gait.**

Electrolytes Replacement:

- **Use the guidance discussed for endurance athletes.**

- **Use ORS (Oral Rehydration Solution) powder formulated by WHO/UNICEF.**

To prevent from overhydration and hyponatremia in an athlete who has experienced them before:

- **1) drink 2 glasses of water 2-3 hours before exercise.**
- **2) drink 1 glass of water about 30 minutes before exercise.**

- **3) avoid overdrinking during exercise. Drinking ½-1 glass of plain water every 15 minutes is optimal.**

- **4) do not restrict salt in your diet.**

- **5) make your own ORS: ½ teaspoon of salt and 6 teaspoons of sugar in one liter of water.**

Calories Intake:

Total calories requirements:

- **1) it is higher than endurance athletes.**
- **2) total calories intake = BMR x activity level**

- **Physical activity level:**

1.55.....3 – 4 trainings per week.

1.76.....5 – 6 trainings per week

2.0.....7 trainings per week.

Macronutrients Ratios:

- **Moderate – to – high in carbs: 7- 10 grams/kg/day.**
- **High in protein: 2 grams/kg/day.**
- **Low in fat: 0.5 grams/kg/day.**

Pre – Competition Diet:

- **High in carbs.**
- **Moderate in protein.**
- **Low in fat.**
- **No carb loading prior to competition.**

Micronutrients Requirements:

- **A sound diet provides adequate micronutrients.**
- **Intense exercise requires extra micronutrients.**
- **You may add a high quality multivitamins-Multiminerals and also essential fatty acids to their diets**

Supplements for Strength Athletes:

- 1) ALA.
- 2) BCAAs.
- 3) Creatine.
- 4) Glutamine.
- 5) HMB.
- 6) Magnesium.
- 7) OKG.

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- **8) Ribose.**
- **9) Testosterone boosters.**
- **10) Vanadium.**

Homework:

- **1) Describe the potential contributing factors to hyponatremia among athletes.**

- **2) Describe briefly the three products that could benefit a power athlete.**