Understanding Body Weight Management

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Sports Dietitian, USOC Acrobat and Combat Sports

UNITED STATES OLYMPIC COMMITTEE
Overview

- What’s wrong with rapid weight loss?
- What is your body made of?
- A different approach to “real weight loss”
- Q&A
Pre Competition Preparation

Non-Weight Class Sports
Taper training & Carb load + hydration increase
• Increase muscle glycogen
• Increased rest/repair
  – helps physically and mentally
• Increase muscle function/strength
• Increase red blood cell mass

Weight Class Sports
“Hard Cut” = Decrease in food intake + increase exercise + dehydration
• Decrease muscle glycogen
• Decrease rest/increased activity = Increase stress mentally and physically
• Decreased muscle function/strength
• Decrease red blood cell mass (potentially)
• Increased risk for illness
When I Step On a Scale What is Being Weighed?

- Skeleton - bones
- Organs
- Hair, skin, nails, teeth
- Water
- Muscle
  - Glycogen
- Fat
- Stomach contents

DAILY VARIATION 2-6 LBS
<table>
<thead>
<tr>
<th>Body Weight %</th>
<th>Corresponding Weight</th>
</tr>
</thead>
</table>
| < 8-10% of competition weight Max/flagged walk around weight | • 55kg = 59.4-60.5kg  
• 60kg = 64.8-66kg  
• 66kg = 71.3-72.6kg  
• 74kg = 79.9-81.4kg  
• 84kg = 90.7-92.4kg  
• 96kg = 103.4-105.6kg  
• 120kg = 129.6-132kg |
| < 6-7% of competition weight 2 weeks out           | • 55kg = 58.3-58.8 kg  
• 60kg = 63.6-64kg  
• 66kg = 69.9-70kg  
• 74kg = 78.4-79kg  
• 84kg = 89.0-89.8kg  
• 96kg = 101.7-102kg  
• 120kg = 127.2-128kg |
| < 3-5% of competition weight 3 days out            | • 55kg = 56.6 - 57.7kg  
• 60kg = 61.8 - 63kg  
• 66kg = 67.9 - 69.3kg  
• 74kg = 76.2 - 77.7kg  
• 84kg = 86.5 - 88kg  
• 96kg = 98.9 - 100kg  
• 120 = 123.6 - 126kg |
A Different Approach

Try to Manipulate

1. Fat
2. Stomach contents
3. Water
4. Sparing muscle mass & glycogen
PHASE 1 – 3 Steps to Fat Loss
6-8 ++ weeks out

Try to Manipulate

1. Fat
2. Sparing muscle mass & glycogen
**STEP 1 – Pick 3 of the following changes**

**Nutrition Changes for Fat Loss – Calories In**

1. Change all liquids = water & skim milk (NO ALCOHOL, SODA, JUICE)
2. Stop eating after 7pm
3. Eat half your normal portion for dinner or no starch at evening meals
4. PLATE model for Lunch/Dinner
5. Replace one meal a day with a calorie controlled shake
6. Limit fast food/restaurant food to 2x per month
7. Calorie/carb cycling reduced meal plan to follow every day
8. No skipping meals – no longer than 4 hours without food

MANDATORY - KEEP HYDRATION HIGH & REPLACE LOSSES!!!
Dehydration – SO WHAT?

Diagram:
1. Water loss
2. High osmotic pressure of blood stimulates hypothalamus
3. Hypothalamus
4. Posterior lobe of pituitary
5. ADH secretion
6. Water retention
7. Drink of water
8. Osmotic pressure decreases

United States Olympic Committee
STEP 2 – Pick 1 of the following changes

- Calories Out – in addition to training
  1. Add in one extra cardio session 4x per week (low intensity)
  2. Find extra ways to burn calories (e.g. bike instead of walk to practice)
  3. Metabolic training in the gym
  4. Wear a pedometer – go for 10000 steps outside of training
STEP 3 – CONSISTANCY & MOTIVATION

• Consistency – at least 6/7 days per week
• Motivation & Determination – up to you

“Gold medals aren't really made of gold. They're made of sweat, determination, and a hard-to-find alloy called guts.”

Dan Gable

Track Track Track!
Regular, hydrated weights, same scale, same time of day as weigh in, ideally with hydration test
PHASE 2 – FINE TUNING WEIGHT
2 weeks out

Try to Manipulate

1. Fat
2. Stomach contents
3. Water retention
4. Sparing muscle mass & glycogen
**Phase 2 – Fine Tune**

1. Continue making nutrition changes and exercise changes
2. Change gut contents (0.5-2kg)
   1. Lower fiber foods starting 5-10 days out
3. Mild restriction of salt (>1000-1500mg/day)
4. Know your float weight
5. Know your sweat rate
6. Heat acclimate
7. **STAY HYDRATED!**

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Try to Manipulate

1. Fat
2. Stomach contents
3. Water retention
4. Sparing muscle mass & glycogen

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## Low Sodium Options

<table>
<thead>
<tr>
<th><strong>STOP!</strong></th>
<th><strong>GO!</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Crackers or rolls with salt topping; biscuits, cornbread; stuffing mix</td>
<td>Regular breads, unsalted crackers and breadsticks</td>
</tr>
<tr>
<td>Instant Hot cereals</td>
<td>Low fiber, Low sodium choices: Cheerios, Cornflakes, Cream of Wheat, Rice Krispies, Special K</td>
</tr>
<tr>
<td>Canned, cured, processed, smoked and other highly salted foods</td>
<td>Drained and rinsed canned salmon and tuna, fresh or frozen fish, and eggs</td>
</tr>
<tr>
<td>Cheese (other than low sodium cheeses and some cottage cheese)</td>
<td>Yogurt</td>
</tr>
<tr>
<td>Commercially prepared entrees (tv dinner type meals)</td>
<td>Plain rice and pasta</td>
</tr>
<tr>
<td>Bouillon; broth; Soups and dehydrated soups</td>
<td>Fresh frozen vegetables</td>
</tr>
<tr>
<td>Commercial spreads and dips</td>
<td>Homemade hummus with fresh products, homemade guacamole</td>
</tr>
<tr>
<td>Salted nuts</td>
<td>Natural peanut butter (no added salt)</td>
</tr>
<tr>
<td>Pasta and rice packaged mixes</td>
<td>Regular pasta and rice</td>
</tr>
<tr>
<td>Seasonings/Sauces: -celery salt, garlic salt, onion salt, seasoned salt, poultry seasoning, BBQ, soy, steak, teriyaki, Worcestershire sauces</td>
<td>Fresh herbs----cilantro, basil, rosemary, and thyme</td>
</tr>
</tbody>
</table>
# Lower Fiber Options – OR SHAKES

<table>
<thead>
<tr>
<th>STOP!</th>
<th>GO!</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salads! Many vegetables are high in fiber</strong></td>
<td>Alfalfa sprouts, beets, green / yellow beans, carrots, cauliflower, celery, cucumber, eggplant, lettuce, mushrooms, green / red peppers, potatoes (peeled), squash, zucchini</td>
</tr>
<tr>
<td><strong>Whole fruits or juice with lots of pulp</strong></td>
<td>applesauce, apricots, 1/2 banana, cantaloupe, canned fruit cocktail, grapes, honeydew melon, peaches, watermelon</td>
</tr>
<tr>
<td>Bran cereals or other fiber-rich breakfast cereals/foods (kashi), oatmeal, bran muffins, whole wheat waffles/pancakes</td>
<td>Plain cereals e.g. Cheerios, cornflakes, Cream of Wheat, Rice Krispies, Special K</td>
</tr>
<tr>
<td><strong>Whole grains---in bread, cereals, buns, bagels, some pastas, rice, and barley</strong></td>
<td>Enriched white breads, buns, bagels and English muffins</td>
</tr>
<tr>
<td><strong>Popcorn and some nuts</strong></td>
<td>Soda crackers, plain melba toast, and rice cakes</td>
</tr>
<tr>
<td><strong>Legumes</strong></td>
<td>Vegetable juice</td>
</tr>
<tr>
<td>Edible seeds: Berries, kiwi, figs, etc</td>
<td>Fruit juices- except prune juice</td>
</tr>
</tbody>
</table>
Phase 3 – Water Manipulation
49-24 hours out

Try to Manipulate

1. Water
2. Sparing muscle mass & glycogen
Phase 3 – Water Manipulation

– Knowing your float weight and sweat rate:
  • Decrease water intake 48 hours out (remembering - 24oz, 3 cups = 1lbs)
  • Passive sweating with heart rate and heat regulation (ie. hot baths)
  • Active sweating with heart rate and heat regulation
Post Weigh - In

- Recovery between weigh in and competition is essential
- Replace
  - ~28ml/kg of volume fluid
  - ~34 mg/kg sodium
  - ~2.3g/kg CHO
- Familiar tested food, small snacks over big meals
- Watch fiber content if athlete has been reducing intake
- Avoid high sugar beverages like soda & juice in high volume = Diarrhea

Slater et al., (2006b)
<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:05 -3:30pm</td>
<td><strong>Drink</strong>: 12 - 24 oz Water/Sport drink sipping</td>
</tr>
<tr>
<td>3:30 – 4:00pm</td>
<td><strong>Drink</strong>: 12- 24 oz Sport drink (add a pinch of salt to it) – sipping&lt;br&gt;<strong>Eat</strong>: (one of these snack options)&lt;br&gt;- 5-8 salty crackers&lt;br&gt;- 2 handfuls salty tortillas&lt;br&gt;- 2 handfuls pretzels</td>
</tr>
<tr>
<td>4:00-6:00pm</td>
<td><strong>Drink</strong>: 12- 24 oz sport drink (sip)&lt;br&gt;<strong>Eat</strong>: (50-70g easy to digest carbs – one of these small snacks)&lt;br&gt;- 1- 2 Bananas&lt;br&gt;- Plain Bagel with jam or honey&lt;br&gt;- 1-2 chocolate puddings&lt;br&gt;- Cliff bar</td>
</tr>
<tr>
<td>6:00 – 7:00pm (dinner meal)</td>
<td><strong>Drink</strong>: 12 -24oz water (sipping)&lt;br&gt;<strong>Eat</strong>: (70-80g easy to digest carbs, no more than 20g protein, low fat, avoid vegetables/beans at this point). Sample meals:&lt;br&gt;- 1.5-2 cups rice, chicken breast&lt;br&gt;- Baked potato or 1-2 cups mashed + grilled fish&lt;br&gt;- Meal replacement (Boost or instant breakfast) + banana&lt;br&gt;- Chicken noodle soup (or ramen noodles) with tuna</td>
</tr>
<tr>
<td>7:00 – 9:00pm</td>
<td><strong>Drink</strong>: 12- 24 oz sport drink (Sip) Need to (pee) before going to bed.</td>
</tr>
</tbody>
</table>
COMPETITION DAY

Wake Up

**Drink:** 12-24 oz sport drink and water (Sipping). Check urine color.

Breakfast

**Drink:** 12-24 oz sport drink (Sipping)

**Eat:** (70-80g carbs, mod protein, low fat)
- 2 pieces toast/plain bagel with honey + eggs
- 2 packets oatmeal + eggs
- 2 cups cheerios/rice krispies with low fat milk + banana
- Meal replacement + banana

**Pee color** = Light color during comp!

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<table>
<thead>
<tr>
<th>Tournament Foods (between matches/grazing)</th>
<th>Serving Size</th>
<th>Calories (kcal)</th>
<th>Carb (g)</th>
<th>Protein (g)</th>
<th>Fat (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1% chocolate milk</td>
<td>2 cups</td>
<td>320</td>
<td>54</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Low fat (fruit) yogurt</td>
<td>175g</td>
<td>150</td>
<td>26</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Peanut butter &amp; jam sandwich</td>
<td>1</td>
<td>430</td>
<td>73</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Raisin bagel</td>
<td>1 small</td>
<td>200</td>
<td>39</td>
<td>7</td>
<td>1.7</td>
</tr>
<tr>
<td>Sport drink</td>
<td>591ml</td>
<td>150</td>
<td>37</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sport bar</td>
<td>1 bar</td>
<td>250</td>
<td>44</td>
<td>10</td>
<td>3.7</td>
</tr>
<tr>
<td>Dried fruit bar</td>
<td>1 bar</td>
<td>135</td>
<td>34</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Bananas</td>
<td>1 large</td>
<td>109</td>
<td>28</td>
<td>1.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Low fat granola cereal</td>
<td>¼ cup</td>
<td>120</td>
<td>28</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Commercial fruit smoothie</td>
<td>300 ml</td>
<td>270</td>
<td>49</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Meal replacement</td>
<td>1 bar</td>
<td>229</td>
<td>33</td>
<td>14</td>
<td>4.5</td>
</tr>
<tr>
<td>Meal replacement drink</td>
<td>1 can</td>
<td>240</td>
<td>41</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>
BOTTOM LINE

• “I’m a big believer in starting with high standards and raising them. We make progress only when we push ourselves to the highest level. If we don’t progress, we backslide into bad habits, laziness and poor attitude.”

• Dan Gable
QUESTIONS?
REFERENCES