Nutritional Education for Wrestling Coaches (MHSAA, NWCA)

Adapted from
James Fast ATC, NSCA CPT NSCA
Eaton Rapids, MI 48827
(517) 420 8694
E-mail jfast@erps.k12.mi.us
Provided by the
Genesee Intermediate School District
Program Goal

To educate and inform wrestling coaches

Help coaches to develop a resource on nutrition

To promote optimum performance for wrestlers through safe and healthy nutrition.
Content

1. Overview
2. Hydration
3. Nutrients
   - Carbs
   - Proteins
   - Fats
   - Vitamins and minerals
4. Supplements
5. Putting it all together
What is involved?

- Training
- Nutrition
- Genetics
ONE OF WRESTLER’S GREATEST CHALLENGES!
How have wrestlers initially made weight?

- Restricted food intake
- Decreased fluid intake
- Starvation diet
- Strenuous exercise
Performance outcomes

- Weakness
- Lethargy
- Decreased Concentration
- SEMISTARVATION
<table>
<thead>
<tr>
<th>Nutrition and Why is it important?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without nutrients, the body malfunctions</td>
</tr>
<tr>
<td>With a well balanced nutritional program, the body will perform at its best</td>
</tr>
</tbody>
</table>
Components of nutrition

Carbohydrates

Proteins

Fats

Water

Vitamins

Minerals
Hydration

Without food? months

Without Water? Lucky to last 2 weeks

Water is the most important nutrient for your body

You must have water to burn calories

You will decrease your metabolism if you do not drink enough fluids
Water lost

- 2 cups through breathing
- 2 cups through perspiration
- 6 cups through urine and bowel movement
- 10 cups through exercise
How much water?

- To maintain hydration
  - .6 – .7 ounces per pound of body weight

- Ideal way to measure
  - Change in body weight before and after practice
  - Extra with exercise
  - 16–20 oz. for every pound lost
## When to drink

| rare: Drink before you are thirsty | rare: Drink after activity | rare: Water has no adverse effect on performance |
---|---|---|

Rarely can one get too much water.
Components of nutrition

- Carbohydrates
- Proteins
- Fats
- Water
- Vitamins
- Minerals
Carbohydrates 1 gram = 4 calories (Most misunderstood)

<table>
<thead>
<tr>
<th>Number one source of energy for all bodily functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body storage</td>
</tr>
<tr>
<td>Liver</td>
</tr>
<tr>
<td>Blood</td>
</tr>
<tr>
<td>Muscles</td>
</tr>
</tbody>
</table>
Types of Carbohydrates

Simple

Complex
Simple Carbohydrates

Too much can be bad

Hyper-glycemia  Hypo-glycemia

Little nutrient value
### Simple Carbohydrates

<table>
<thead>
<tr>
<th>Glucose</th>
<th>Artificial Sugars</th>
<th>Sucrose</th>
<th>Maltose</th>
<th>Fructose</th>
<th>Galactose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used for energy</td>
<td>Saccharin, Aspertame, Aciculate, Sucralose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stored as glycogen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Simple Carbs (cont.)

- Where can we find these items?

- Table Sugar
- Candy Bars
- Fruit Juices
- Soda Pop
- Fruit Punch
- Sports Drinks
The Best for you

- Glycogen
  *Breaks down to glucose for energy*

- Vitamin B

- Minerals

- Fiber

- Protein
Sources of Complex Carbs

Grains
- Breads
- Cereals
- Pasta

Fruits
- Bananas
- Apples
- Pears

Vegetables
- Potatoes
- Tubers
- Beans
Carb Intake Recommendations

- 6–8 g/kg/day
  - Up to 600 g per day

Muscles store glycogen at the highest rate up to 2 hours after exercise

100 g (400 kcal) should be consumed 15–30 minutes after exercise

100 g every 2–4 hours thereafter
How many carbs does a wrestler need?

Take total body weight in kg

Multiply by 6–8

Example

45kgx8=360g/day

1440 cal per day
How may calories are burned during a two hour practice?

1200 calories + 1900 calories = 3100 calories
Components of nutrition

- Carbohydrates
- Proteins
- Water
- Fats
- Vitamins
- Minerals
Protein

- Used for fuel when necessary
- Used for growth and repair of body tissues
- Found in all cell structures in the body*

Excess protein = potential liver and kidney damage, dehydration, loss of calcium into the urine and protein stored as FAT

1 gram give 4 calories
Protein requirements

0.8 g/kg/day
- 56 g for sedentary individual

Strength Activities
- 1.4 g/kg/day

Endurance Activities
- 1.2–1.4 g/kg/day
Protein Sources

Meats

- Poultry
- Beef

Legumes

- Soybeans
- Peas

Grains

- Rice
- Wheat
- Oats
Protein Sources (continued)

Nuts and Seeds

- Almonds
- Sunflower Seeds

Dairy and Eggs

- Milk
- Cheese
- Yogurt

Fish
Components of nutrition

Carbohydrates

Proteins

Fats

Water

Vitamins

Minerals
| Cushions and protects organs | Carries Vitamins A, D, E and K | Concentrated energy source | 1 g gives 9 calories |
Energy Source?

- Requires High amount of Oxygen to burn
- Can not be converted to energy as easily as carbs
- Not a significant source of energy for wrestling
- Short term
- High Intensity exercise
- Not a significant source of energy for wrestling
Recommended intake for Wrestlers

• 20–30% of Total Calories

• $3100 \times 0.20 = 620$ Calories
Good Fats vs. Bad Fats

**Good Fats**
- Liquid at room temperature
- Mono unsaturated
- Poly unsaturated

**Bad Fats**
- Solid at room temperature
- Trans fats
- Saturated fats
Good Fats vs. Bad Fats

**Good Fats**
- Natural Oils
- Omega 3 and 6

**Bad Fats**
- Hydrogenated oils
Components of nutrition

- Carbohydrates
- Fats
- Proteins
- Vitamins
- Minerals
- Water
## Vitamins

<table>
<thead>
<tr>
<th>Helps to regulate metabolic reactions</th>
<th>Start body</th>
</tr>
</thead>
<tbody>
<tr>
<td>No caloric value</td>
<td></td>
</tr>
<tr>
<td>The body can NOT make them</td>
<td>Obtained through diet</td>
</tr>
<tr>
<td></td>
<td>Supplements if medically necessary</td>
</tr>
</tbody>
</table>
Vitamins

Water Soluble

Fat Soluble
Water soluble Vitamins

- Absorbed directly into the bloodstream
- Not stored in the body
- Must be replenished daily or within several days
# Water soluble Vitamins

**Vitamin B Complex**
- Thiamin
- Riboflavin
- Niacin
- Pyridoxine
- Cobalamine
- Pantotheic Acid
- Folic Acid
- Biotin

**Vitamin C**
Fat Soluble Vitamins

- Requires fats/oil to be absorbed
- Not needed on a daily basis
- Stored in the liver and fat cells

Vitamin A, D, E, K
Components of nutrition

Carbohydrates

Proteins

Water

Vitamins

Fats

Minerals
# Minerals

<table>
<thead>
<tr>
<th>Major Minerals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requirement 100 mg/day or more</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trace Minerals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requirement 100 mg/day or less</td>
</tr>
</tbody>
</table>

- Building materials for bones, teeth, tissue, muscles, blood and nerve cells
- Assist enzymes in all body functions
- Chemical elements that can not be synthesized by the body
### Supplements

<table>
<thead>
<tr>
<th>Unregulated by the FDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billion Dollar industry</td>
</tr>
</tbody>
</table>
Supplements

- Multivitamins
  - Ephedrine products
  - Caffeine

- Protein Powder
  - Creatine Monohydrate
  - HMB BetaHydroxy Methylbutyrate
  - Glutamine
Reading Nutritional Labels

**Serving size**

- Servings per content
- Carbohydrates
- Protein

**Fats**
- Calories to gram conversion
Calories to gram conversion

Fat = 9 calories

Carb = 4 calories

Protein = 4 calories
Sample label for Macaroni & Cheese

### Nutrition Facts

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories from Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 250</td>
<td>110</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Daily Value*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat 12g</td>
<td>18%</td>
</tr>
<tr>
<td>Saturated Fat 3g</td>
<td>15%</td>
</tr>
<tr>
<td>Trans Fat 3g</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 30mg</td>
<td>10%</td>
</tr>
<tr>
<td>Sodium 470mg</td>
<td>20%</td>
</tr>
<tr>
<td>Total Carbohydrate 31g</td>
<td>10%</td>
</tr>
<tr>
<td>Dietary Fiber 0g</td>
<td>0%</td>
</tr>
<tr>
<td>Sugars 5g</td>
<td></td>
</tr>
<tr>
<td>Protein 5g</td>
<td></td>
</tr>
</tbody>
</table>

| Vitamin A          | 4%    |
| Vitamin C          | 2%    |
| Calcium            | 20%   |
| Iron               | 4%    |

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

**Quick Guide to % DV**

- 5% or less is Low
- 20% or more is High

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<table>
<thead>
<tr>
<th>Calories:</th>
<th>2,000</th>
<th>2,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>Less than 65g</td>
<td>80g</td>
</tr>
<tr>
<td>Sat Fat</td>
<td>Less than 20g</td>
<td>25g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Less than 300mg</td>
<td>300mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>Less than 2,400mg</td>
<td>2,400mg</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>300g</td>
<td>375g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>25g</td>
<td>30g</td>
</tr>
</tbody>
</table>

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1. **Start Here**
2. **Check Calories**
3. **Limit these Nutrients**
4. **Get Enough of these Nutrients**
5. **Footnote**
Putting it all together
Many Factors to Consider

- Genetic background
- Metabolic rate
- Nutritional status and habit
- Physical condition
- Gender
- Age
- Weight
Fill half of your plate with fruits and vegetables

1 1/2 to 2 cups of fruits daily

1 cup of fruit
- 1 cup of fresh fruit
- 1 cup of 100% fruit juice
- 1/2 cup of dried fruit

5 to 6 ounce equivalents of grains daily

1 ounce equivalent
- 1 slice of bread
- 1 cup of ready-to-eat cereal
- 1/2 cup of cooked rice, pasta or cereal

Make at least half of your grains whole grains

3 cups of dairy daily

1 cups of dairy
- 1 cup of milk or yogurt
- 1 1/2 oz of hard cheese
- 2 oz of processed cheese

2 to 2 1/2 cups of vegetables daily

1 cup of vegetables
- 1 cup of raw vegetable
- 1 cup of 100% vegetable juice
- 2 cups of leafy greens

5 to 5 1/2 ounce equivalents of protein daily

1 ounce equivalent
- 1 oz of meat, poultry, fish
- 1/4 cup of cooked beans
- 1 egg
- 1/2 oz of nuts or seeds
Adolescent Male
- 15–19 calories/pound/day
- Uses 1200 calories in a 2 hour practice

Adolescent Female
- 12–17 calories/pound/day
- Uses 1200 calories in a 2 hour practice
Total Caloric Needs

Weight x 19 = A
- A = Approximate number of calories your body needs to maintain its current weight

A + 1200 = _________
- Caloric need to maintain current weight

Looking for change?
- Increase calories to gain
- Decrease calories to lose
How much water?

1. Weight \(\times 0.04\)
2. Pounds of water lost \(\times 2\)
3. Example

- \(100 \times 0.04 = 4\)
- \(4 \times 2 = 8\) cups
How many calories?

**Males**

100lbs x 19 = 1900 cal

With Exercise

1900 + 1200 = 3100 cal/day

**Females**

100lbs x 17 = 1700 cal

With exercise

1700 + 1200 = 2900 cal/day
To Gain or Lose

One pound of fat has 3500 calories (389 g)

<table>
<thead>
<tr>
<th>Loss of 1–1.5 lb./week</th>
<th>Gain of 1–1.5 lb./week</th>
</tr>
</thead>
</table>

Healthy weight change

<table>
<thead>
<tr>
<th>Take in 500 cal less/day</th>
<th>Take in 500 cal more/day</th>
</tr>
</thead>
</table>

Exercises

<table>
<thead>
<tr>
<th>Strength train +aerobics</th>
<th>Strength Train</th>
</tr>
</thead>
</table>
Nutrition Needed

- 60% Carbs
- 20% Protein
- 20% Fat

Hydration throughout the day
Guidelines for Optimal Performance

- Education
- Start Early
- Gradual Progression
- Consistency
  - Eating habits
  - Training routine
Guidelines for Optimal Performance

1. Eat a balance breakfast
2. Drink plenty of water
3. Eat a variety of Foods
   - MyPyramid.gov
4. Avoid eating too much fatty foods
5. Eat foods with adequate complex carbs and fiber
6. Avoid too much sugar
Athletes should consider the time between eating and performance.
One Hour Or Less Before

- fruit and vegetable juices such as orange, tomato or v-8 juices,

- fresh fruit such as
  - apples,
  - watermelon,
  - peaches,
  - grapes or
  - oranges.
Menu Plans

- Two To Three Hours Before
  - fruit juices and fresh fruit, and/or
  - breads, bagels or muffins, with a limited amount of butter or cream cheese
Menu Plans

- Three To Four Hours Before
  - fruit juices and fresh fruit, and
  - breads, bagels or muffins, and
  - a light spread of peanut butter or
  - slice of cheese for breads, or a
  - light spread of cream cheese or
  - butter for bagels and/or
  - bowl of cereal with low fat milk
Menu Plans

- Four Hours Or More Before
  - sandwich with 2 slices of bread and 2 ounces of lean meat, and
  - fresh fruit, and
  - fresh vegetables, and
  - low fat milk
Training Program

Strength
• 3 days/week

Endurance
• 2–3 times/week

Hydration
• Adequate amounts
Commitment

The decisions you make will affect your Lifestyle forever!
Wrestling

- Sauna
- Sweat boxes
- Rubber suits
- Starving Athletes
Maintaining Optimal Performance

A victory not only on the mat but off the mat
Wrestlers can wrestle, eat and win!
References

Cook books
References

7. Lunches to Go: Jeanette Miller and Elisabeth Schafer, JEM Communications, 1992.
10. The American Cancer Society Cookbook: Anne Lindsay, S & S Trade, 1990.
References

- Nutrition Analysis

- Software
  1. Bon Appétit Software: 9215 : Youree Drive, Shreveport, LA 71115
  2. Diet Analysis Software: 1–800 800–747–4457
  3. DINE Systems. Inc.: 586 N. French Road, Suite 2, Amherst, NY 14228
References

Videos
References


Coaches' References


References

References


10. Fuel for Young Athletes: Essential foods and fluids for future champions: Litt, Ann, Human Kinetics, Champaign, IL 2004
Best of luck for the upcoming season