

ETTU COACHING CONFERENCE

# NUTRITION IN TABLE TENNIS

Danijel Borković, dr.med.

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**KEEP  
CALM  
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I AM A  
TABLE TENNIS  
EXPERT**

# Specifics of table tennis as an sport

- ❑ Fast, high-tech sport.
- ❑ Most participants of any sports in the world (aprox.40 mil.competitive players in the world, millions of recreative players).
- ❑ Indoor sport which is not influenced by weather conditions but is dependent on small technical details: lights (shadows, blind spots...), air flow, humidity...
- ❑ More games in a day during a tournament (more days).
- ❑ It is necessary for athletes to have balance of entire body and speed of reaction time.
- ❑ Judgment and concentration is required.
- ❑ Physical elements such as agility and dexterity are required.
- ❑ Equipment used in table tennis is light in weight and the moving range is not so wide: there are not so much requirements for the young age, specific skill or purpose for the players.
- ❑ Body contact, accidents and injury in the midst of playing are few.

## Nutrition in table tennis: introduction

### Estimation of energy consumption:

- Equation: 0.05 – 0.083 kCal/kg BW/min (av. 0.065 kCal/kg BW/min)
- 60 kg tennis player:  $60\text{kg} \times 0.065 \text{ kCal/kg BW/min} \times 60 \text{ min} = 234 \text{ kCal}$
- Professional table tennis players consume as twice as predicted!

### Heart beat average

| 60-min practice | Forehand   | Forehand drive – counter drive | Forehand – backhand alternate | Footwork and on loop drive - smash |
|-----------------|------------|--------------------------------|-------------------------------|------------------------------------|
| Male<br>(av.)   | 107 +/- 8  | 130 +/- 8                      | 127 +/- 13                    | 144 +/- 14                         |
| (max.)          | 124 +/- 10 | 153 +/- 12                     | 146 +/- 15                    | 167 +/- 14                         |
| Female<br>(av.) | 112 +/- 10 | 125 +/- 12                     | 122 +/- 12                    | 134 +/- 16                         |
| (max.)          | 129 +/- 13 | 141 +/- 14                     | 137 +/- 12                    | 159 +/- 15                         |

# Quality of food

- ❑ Processed food: high in fat, sugar, salt, food preservatives and food additives.
- ❑ In most developed countries, 80% of consumed salt comes from industry-prepared food (5% come from natural salt; 15% comes from salt added during cooking or eating).
- ❑ Junk food: excess fat, carbohydrates, and processed sugar found in junk food contributes to an increased risk of obesity, cardiovascular disease, diabetes, weight gain, and many other chronic health conditions.
- ❑ There is no place for junk food in athletes!!!



## Nutrition in table tennis: introduction

### Why is healthy nutrition important in sports?

- Maintains appropriate hydration level
- Achieves and maintains ideal body weight and physique
- Reduces risk of injury and illness
- Provides energy and nutrients for organism
- Supports growth and development
- Supports optimal gains for training program
- Enhances recovery (training sessions, competitions...)



## Nutrition in table tennis: introduction

### Energy requirements of athlete depends on:

- 1) Age, height, weight
  - 2) Sport played
  - 3) Position in field
  - 4) Daily training load
  - 5) Competition schedule
- Energy value of food:
- 1) Protein = 4 kCal/g
  - 2) Carbs = 4 kCal/g
  - 3) Fat = 9.3 kCal/g
  - 4) Alcohol = 7 kCal/g



## Daily energy requirements

- 1) BMR = 60 - 75%
- 2) Exercise: 15 - 30%
- 3) Other: 10%



# Nutrition in table tennis: hydration

## Hydration

- Basic water intake: 35 – 50 mL/kg BW.

## Dehydration

- Deficit of total body water with disruption of metabolic processes
- Chronic dehydration is common between athletes
- Leads to:
  - 1) Elevated heart rate
  - 2) Increase in body temperature
  - 3) Increase in perceived exertion
  - 4) Fatigue, dizziness (5 – 8% loss)
  - 5) Physical and mental deterioration (over 10% loss)
  - 6) Death (15 – 25% loss)



# Nutrition in table tennis: hydration

## Dehydration affects:

- 1) Performance (endurance, intensity)
  - 2) Coordination and skill
  - 3) Concentration and decision making
- Negative effects in sports: loss of 2% of total body water.

## Signs of dehydration:

- 1) Dark coloured urine
- 2) Smaller urin volume
- 3) Headache
- 4) Fatigue
- 5) Dry skin



## Monitoring fluid loss and intake

|                           |                  |
|---------------------------|------------------|
| Pre training weight       | 60 kg            |
| Post training weight      | 58 kg            |
| Change in body mass       | - 2 kg           |
| Fluid intake              | 750 ml (0.75 kg) |
| Urine loss                | -----            |
| Total sweat loss          | 2.75 kg (2.75 L) |
| Change in body weight (%) | <b>-5.0%</b>     |

### How much and when?

| Before  | During   | After  |
|---|--|--|
| <ul style="list-style-type: none"><li>-Adequate (“normal”) till 2 – 4 hours before training/game</li><li>-“Sipping” until just before strting</li></ul> | <ul style="list-style-type: none"><li>- Small amounts at regular intervals during warm up (make use of formal and informall stoppages)</li></ul> | <ul style="list-style-type: none"><li>- Aim to replace 150% of loss in next 2 – 3 hours (variety of fluids to encourage intake!)</li></ul> |

## Nutrition in table tennis: hydration

### □ Water:

- a) during and after easy training/game sessions, especially if they are less than 60 minutes
- b) During day.

### □ Sports drinks:

- a) During and after hard prolonged trainings or games (60 – 90 minutes)
- b) Where fluid loss is estimated to be high.



## Carbs – which ones?

- WHO recommendations: the proportion of carbohydrates in the daily diet of an adult should constitute no more than 60% of the daily intake of energy - from 5 to 15 % percent of the carbohydrates can be in the form of mono- and disaccharides , in particular from fruit, vegetables and dairy .
- Most of the daily energy introduced in the form of carbohydrates should be with complex sugars - polysaccharides (they can be found in unprocessed vegetable sources, eg . Wholegrain cereal products, in legumes , fruits and vegetables).

### Healthy Carbs

#### Vegetables



#### Fruits



#### Whole Grains



#### Seeds



#### Nuts



#### Beans



## When, how much?

- Daily intake of carbs should reflect demands of training!

|   |                      |
|---|----------------------|
| <b>a) Exercise of low intensity<br/>b) &lt; 1 hour of moderate to high intensity training</b> | <b>5 – 7 g/kg BW</b> |
| 1 – 3 hours of moderate to high intensity training  | 7 – 10 g/kg BW       |
| > 4 hours of moderate to high intensity training  | 10 – 12+ g/kg BW     |

### Proteins - why?

- Important for growth and development
- Needed to repair damaged muscle and enhance recovery
- Muscle growth
- Needs are easily met through a balanced diet



# Which ones?

Sources of quality proteins:

- 1) Fish, chicken, turkey, lean meat.
  - 2) Milk, cheese, yoghurt
  - 3) Lentils, legumes, nuts
  - 4) Wholegrain cereals
- The protein in the food should have a high biological value, which means that they contain a sufficiently high proportion of the essential amino acids.



## Nutrition in table tennis: proteins

### How much?

| Inactive/recreational | 0.8 – 1 g/kg BW   |
|-----------------------|-------------------|
| Endurance             | 1.2 – 1.6 g/kg BW |
| Resistance            | 1.2 – 1.7 g/kg BW |

## Nutrition in table tennis: fats and oils

- They are not preferred fuel source of our organism
- More difficult to control body fat levels when eating high fat diet???
- Decrease speed, agility and endurance???
- High fat diet can lead to long term health problems???
- Can take place of carbohydrates (keto diet)
- Preferred: monosaturated, omega 3



# Nutrition in table tennis: fruit and vegetables

## Benefits:

- 1) They provide wide range of essential vitamins and minerals.
- 2) Low energy foods.
- 3) Nutrient dense foods.

## Goals:

- a) 2 – 3 pieces of fresh fruit every day (different)
- b) Include vegetables in lunch and dinner



### Conclusion:

- 1) Carbs are a base for main meals (60 – 70% of day energy input)
- 2) Include lean meat in main meals (proteins: 10 – 20%)
- 3) Fats? (20 – 25%)
- 4) Vegetables, fruits
- 5) Hydration!!!

## Nutrition in table tennis

# ATHLETES EAT AND TRAIN



**THEY DON'T DIET AND EXERCISE!**