

# **Nutrition & Weight Management in Boxing**

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# Meeting Your Requirements...

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Total Energy Requirement in Boxers Depend on :-

- Age
- Gender
- Height
- Weight
- Activity Level
- Periodisation – In Competition / Preparatory Phase / etc

**Energy needs are met if you are maintaining your healthy body weight**

# Carbohydrates

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- Boxers should eat natural carbohydrates such as, whole-wheat grain, fruits ,and oatmeal, which are packed full of useful nutrients.
- Carbohydrates is a key nutrient for boxers.
- The critical source of energy for exercising muscles.
- A little from blood glucose & a large amount from glycogen stored in the muscles.
- The body can only store a limited amount of glycogen in liver so it is essential to eat carbohydrate everyday.

# Energy Requirement For Physical Activity

Physical Activity Level	Kcal / kg / day	kcal / day
General Physical Activity 30 – 40 minutes / day ; 3 times / week	Normal Diet 25 – 35	1800 – 2400 <sup>a</sup>
Moderate Levels of Intense Activity <sup>b</sup> 2 – 3 hrs / day ; 5 – 6 times / week	50 – 80	2500 – 8000 <sup>c</sup>
High Volume Intense Training <sup>d</sup> 3 – 6 hrs / day ; 1 – 2 sessions / day ; 5 – 6 times / week	50 – 80	2500 – 8000 <sup>c</sup>
Elite Athlete	150 – 200	Upto 12000 <sup>e</sup>
Large Athlete	60 – 80	6000 – 12000 <sup>f</sup>

a – Values estimated for 50 to 80 kg individual

b – Moderate levels of intense training use lower level of range, high-volume intense training uses upper level of range

c – Values estimated for 50 to 100 kg individual

d – Depending on training periodization, and the volume and intensity of training

e – Values estimated for 50 to 100 kg individual

f – Values estimated for 50 to 100 kg individual

# Carbohydrate Requirement for Physical Activity

Physical Activity Level	g / kg BW / day	Comments
Low Intensity or Skill Based 1 hr / day	3 – 5 g / kg / day	Include Pre, During & Post Training Intake
Moderate to High Intensity 3 hrs / day	5 – 7 g / kg / day	Individual tolerance & preferences
Moderate to High Intensity > 4 – 5 hrs / day	8 – 12 g / kg / day	Nutrients dense choices



# When Carbohydrate Intake is Low

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- Decreased Performance
- Muscle Loss (as proteins used for energy source....)
- Fatigue
- Irritability
- Nutrient Deficiency

# Carbohydrates To Be Limited in Diet

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- Sugar
- Aerated Drinks
- Artificial Sweetener
- Candies
- Pastries & Cakes
- Fried Potatoes, Chips

# Protein

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- Role of Protein
  - Tissue Maintenance
  - Tissue Growth
  - Tissue Repair
  - Energy Source (in absence of liver and muscle glycogen)

# Protein Requirement for Physical Activity

Physical Activity Level	g / kg BW / day	Comments
General Fitness	0.8 to 1.0 g / kg	Focus on Protein Quality
Older Individuals	1.0 to 1.2 g / kg	
Moderate Amount of Intense Training	1.0 to 1.5 g / kg	
High Volume of Intense Training	1.5 to 2.0 g / kg	

# Common Food Sources : High Protein



# Protein To Be Limited In Diet

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- Fried chicken
- Certain dairy products : -
  - Ice cream
  - Paneer made with whole milk
  - Curd made with whole milk

# Fats

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- Dietary fat play an important role in the body including insulation from the cold & aiding in the absorption & transportation of the fat- soluble Vit. A,D,E & K.

- The fat requirement should be 25% of total calories.
- It should not more than 30% of total calories.
- High fat diet can lead to long term health problem.
- Focus on monounsaturated fats & omega-3 fatty acids.

# Fats To Be Limited In Diet

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- Cream
- Ice cream
- Margarine
- Trans fats
  - Chips
  - Bakery products
- Hydrogenated fats

# Fruits & Vegetables

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- Nutrients dense, low energy foods
- Provide a wide range of essential vitamins & minerals

# Pre Competition Meal

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**Goal:- To provide adequate carbohydrate energy & optimal hydration**

- It takes 1-4 hours for food to leave your stomach
- High glycemic index carbohydrate foods are digested quickly
- High protein foods can increase water requirements
- Foods high in fat can stay in your stomach for more than hours
- Best choice for pre-game meals is something high in carbs-easy to digest & becomes quick energy

## 3 – 4 hrs Before Training

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- Baked potato + cottage cheese filling +glass of milk
- Bread roll with cheese/meat filling + banana
- Fruit salad with fruit –flavored yoghurt
- Vegetable sandwich with milk shake
- Cornflakes/oats with Milk+ Banana
- Rice with boiled dal/chicken
- Chapati with boiled dal/ chicken and curd o Bread with a thick layer of jam with milk

# 1 – 2 hrs Before Training

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- Milk shake
- Fruit smoothie
- Sports bar(check labels for carbohydrate and protein content)
- Breakfast cereal with milk
- Cereal bar
- Fruit-flavoured yogurt
- Fruit

# Less Than 1 hr before Event

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- Sports drink
- Carbohydrate gel
- Sports bar
- Jelly

# During Tournament

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- Refueling for 'Tournament'
  - Types of food/fluid may differ depending on times between rounds or games
  - Sports drinks , fruits , low fat flavored milk and sports bars.

# Post Event Meal

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- In the first 30 minutes:
  - Replace fluids & electrolytes
  - Eat high-carbohydrate foods
    - Eg. banana, yogurt, bar, white bread
- Within 2 hours:
  - Drink 2-3 cups of fluid for every pound lost
  - Eat a high carbohydrate meal with some protein
    - Eg. ham sandwich, rice and beans

# Hydration

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- Water is about 70 - 75 % of body weight is an individual with normal body weight
- Body water balance is maintained when water intake is equal to water loss
- Heavy exercise sweat losses are about 1 to 2 Lit / hr. depending on intensity and duration, temperature, humidity etc.

# Fluid Replacement Guidelines

Timing	Amount	Type of Beverage
<b>Before Activity</b>		
1 – 2 Hours	500 mL	Plain Cold Water
10 – 15 Minutes	Up to 600 mL	Plain Cold Water, Diluted Fruit Juice, Glucose / Electrolyte Drink
<b>During Activity</b>		
Every 10 – 15 Minutes	150 to 250 mL	Plain Cold Water, Glucose / Electrolyte Drink, Diluted Fruit Juice
<b>After Activity</b>		
Immediately to 2 – 3 Hours	Begin immediately to compensate loss in body weight	Plain Water. Glucose / Electrolyte Drink

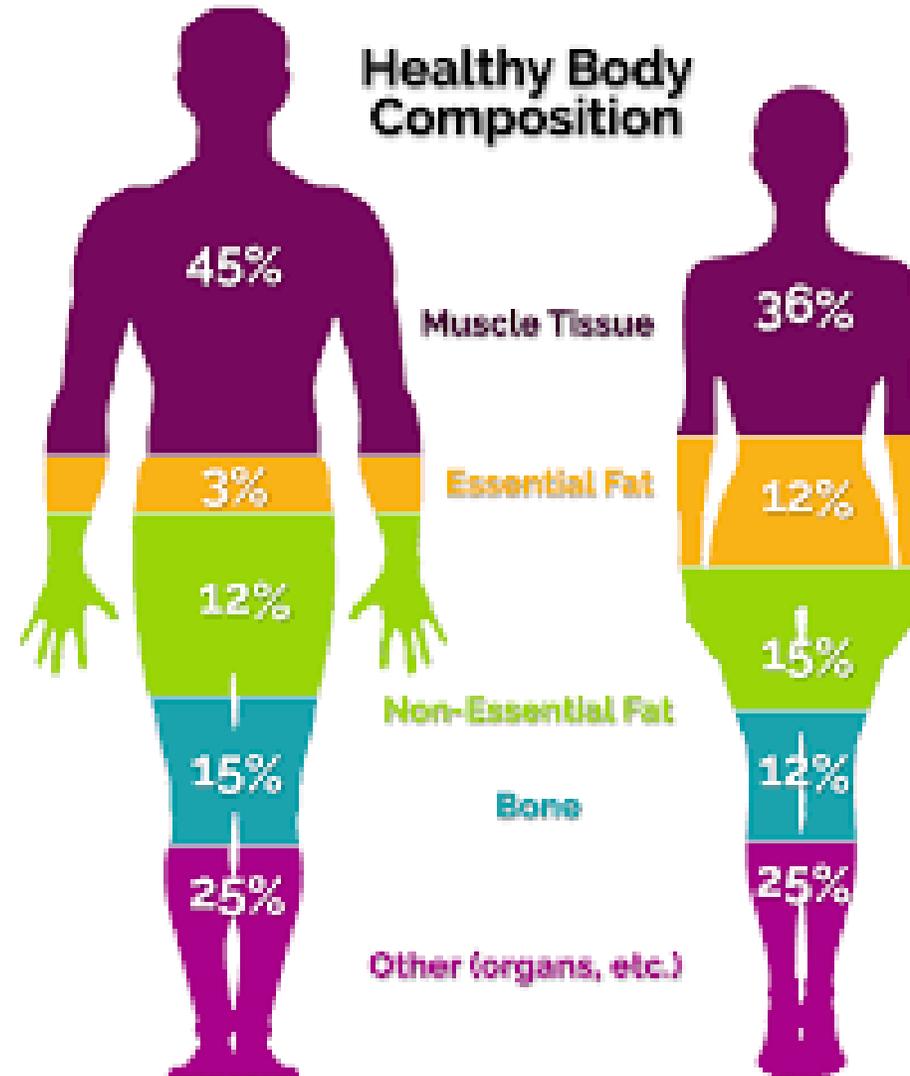
# Boxer's Diet



# Ideal Plate



# Healthy Body Composition



# Prevalent Weight Reduction Practices

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- Restriction on Energy Intake
  - Dieting
  - Fasting
- Restriction on Total Fluid Intake
  - Restriction of fluid
  - Increasing sweat response
- Exploring Other Means :
  - Laxatives
  - Diet pills
  - Diuretics and / Enema
  - Bulimia

# Consequences

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- **Electrolyte Imbalance**
- **Poor Body Temperature Regulation**
- **Cardiovascular Strain**
- **Renal Function Abnormalities**
- **Low Blood Volume / Dehydration**
- **Decreased Muscle Strength**
- **Hypoglycaemia**
- **Fatigue**
- **Changes to Insulin Sensitivity**
- **Suppression of Immune System**
- **Decreased Mental Focus**



**EXERCISE MORE  
IMPORTANT THAN DIET  
TO MAINTAIN HEALTHY  
WEIGHT**

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*Athletessence.com*

# Ideal Method of Weight Reduction



# Easy Training / Weight Management



# Moderate Training



# Hard Training / Race Day



# After Weigh In

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- Re-fuel for competition : - Carbohydrate rich foods
- Recovery for fluid loss
  - 150% of fluid intake
  - Sodium
  - Small sips of fluid drink frequently. ***Do not gulp at once ....***

# Thank You

For Any Queries :-

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