

BOXING
FEDERATION OF
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NUTRITIONAL RECOMMENDATIONS IN BOXING

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Performance in Boxing through Nutrition



Requirements

To maintain muscle strength

To keep high levels of energy to last through
-out the duration of bout.

Benefits

To avoid the feeling of tiredness and
sluggishness.

To avoid getting injuries.

Meeting your Requirements

Total energy requirement of athletes depends on:

- Age , height , weight
- Sport played.
- Position on field
- Daily training load.
- Competition schedule.



Energy Requirements for Physical Activity

Physical activity level	kcal/kg/day	kcal/da
General physical activity 30-40 minutes/day, 3 times a week	Normal diet, 25-35	1 800-2 400 ^a
Moderate levels of intense training 2-3 hours/day, 5-6 times a week ^b	50-80	2 500-8 000 ^c
High-volume intense training 3-6 hours/day, 1-2 sessions/day, 5-6 times a week ^b	50-80	2 500-8 000 ^c
Elite athletes ^d	150-200	Up to 12 000 ^e
Large athletes ^d	60-80	6 000-12 000 ^f

a: Values estimated for a 50-80 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 a 50-100 kg individual

d: Depending on training periodisation, and the volume and intensity of training

e: Values estimated for a 60-80 kg athlete

f: Values estimated for a 100-150 kg athlete

Macronutrients

WHAT?

PROTEIN, CARBOHYDRATES, FAT

Protein: 4kcal per g | Carbs: 4kcal per g | Fat: 9kcal per g

WHY?

ENERGY, GROWTH, IMPORTANT BODY FUNCTIONS

All three macronutrients are necessary in certain amounts to ensure a functioning body and a healthy metabolism.

WHERE?

IN ALL FOODS

Protein: meats, fish, eggs, legumes [...]

Carbs: Fruit, starches, vegetables [...]

Fat: meat, nuts, dairy [...]

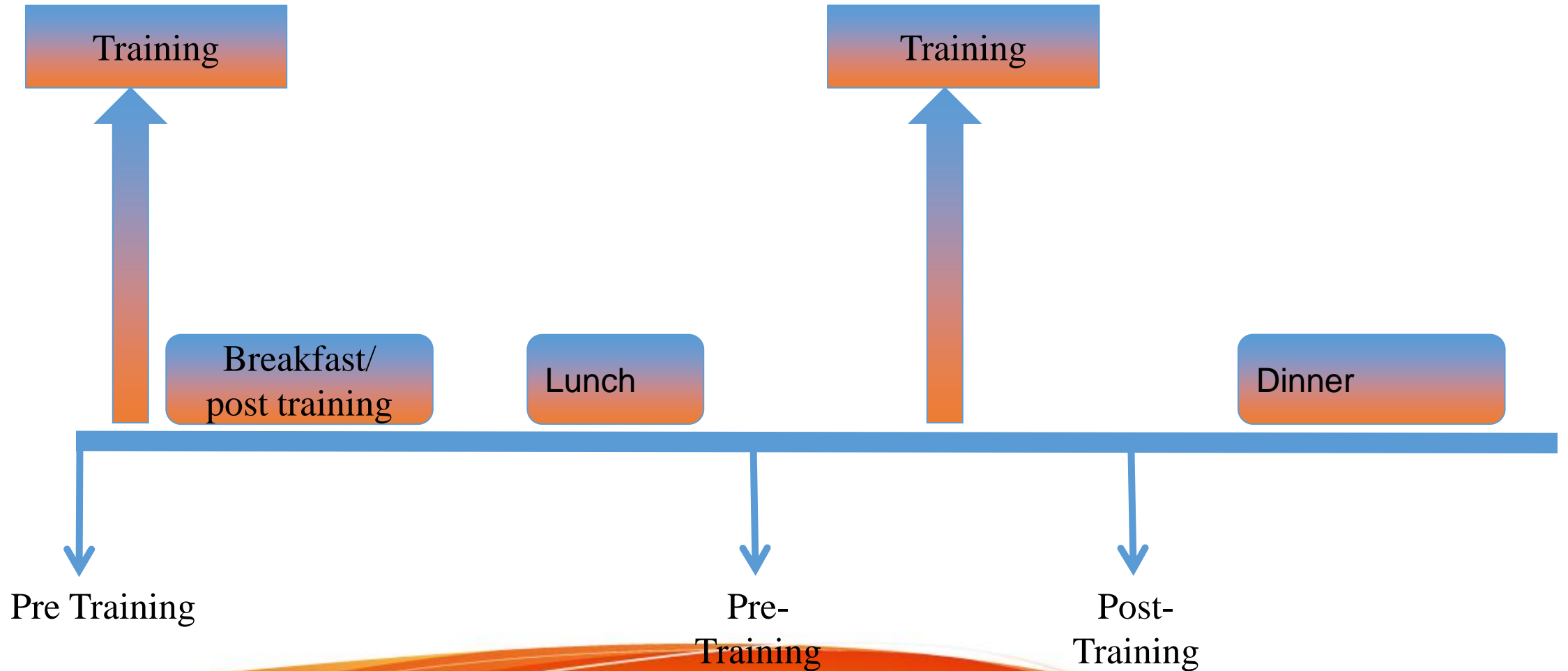
WHAT

WHEN



HOW MUCH

Meal Timing



CARBOHYDRATES



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.

Carbohydrate Requirement for Physical Activity

PHYSICAL ACTIVITY LEVEL	g/kg BW/day	Comments
low intensity or skill based 1hr/day	3-5g/kg/day	Include Pre, During and Post training intake.
Moderate to high intensity -3hr/day	5-7/kg/day	Individuals tolerance and preference.
moderate to high intensity >4-5hr	8-12g/kg/day	Nutrients- dense choices.

Common food source containing high carbohydrate

Food source	Amount	Carbs
		(g)
Chapatti	60g	41.64
Rice	30g	23.46
Boiled potato	50g	11.3
Bread(wheat)	60g	29.4
Banana	100g	27.2
Pineapple	100g	10.8
Orange	100g	10.9
Raisins	10g	7.46
Dry dates	20g	15.16
Jaggery	10g	9.5



What happens when carbohydrate intakes are low

- Decreased performance
- Muscle loss (protein used for energy)
- Fatigue
- Nutrient deficiency
- irritability



Carbohydrates to limit in the diet

- Sugar
- Soda
- Artificial sweetener
- Candies
- Pastries and cakes
- Fried potatoes, chips etc.

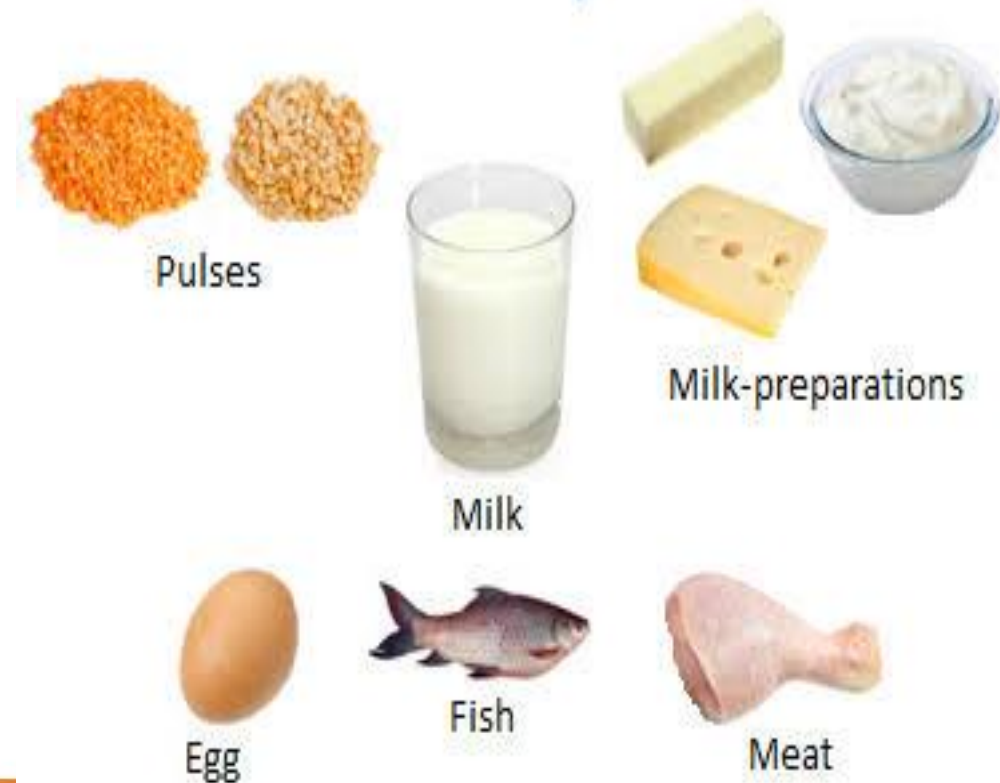


Protein

Role of protein:-

- Tissue maintenance
- Tissue repair
- Tissue growth
- Protein can also provide energy if glycogen stores in muscles & the liver are low but if it is used this way , It is then not available for the important job of muscle growth, repair & recovery.

Food items rich in proteins



Protein Requirement for Physical Activity

PHYSICAL ACTIVITY LEVEL	g/kg BW/day	Comments
General fitness	0.8-1.0 g/kg	Focus on protein quality.
Older individuals	1.0-1.2 g/kg	
Moderate amount of intense training	1.0-1.5 g/kg	
High volume of intense training	1.5-2.0 g/kg	

Common food source containing Protein

Food source	Amount	Protein
		(g)
Boiled eggs(white)	2	7
Chicken breast	30g	6.5
Fish(rohu)	100g	16.6
Milk(toned)	200ml	7.8
Curd	100g	3.1
Cheese slice	1	4
Dal(lentil)/Beans	30g	7.53
Soya milk	120g	10



Proteins to limit in the diet

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



POST TRAINING MEAL(RECOVERY MEAL)

- First 4-6 hours are crucial for optimal recovery and repair.



carbohydrate :1g/kg



Protein:0.2-.5g/kg



carbohydrate:protein
3:1 ratio



within 30minute after training

Fats

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.

Healthy Fats

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Olive Oil



Fish Oil



Cold-exPELLER-pressed plant oils

Such as grapeseed, walnut, sesame



Avocados



Olives



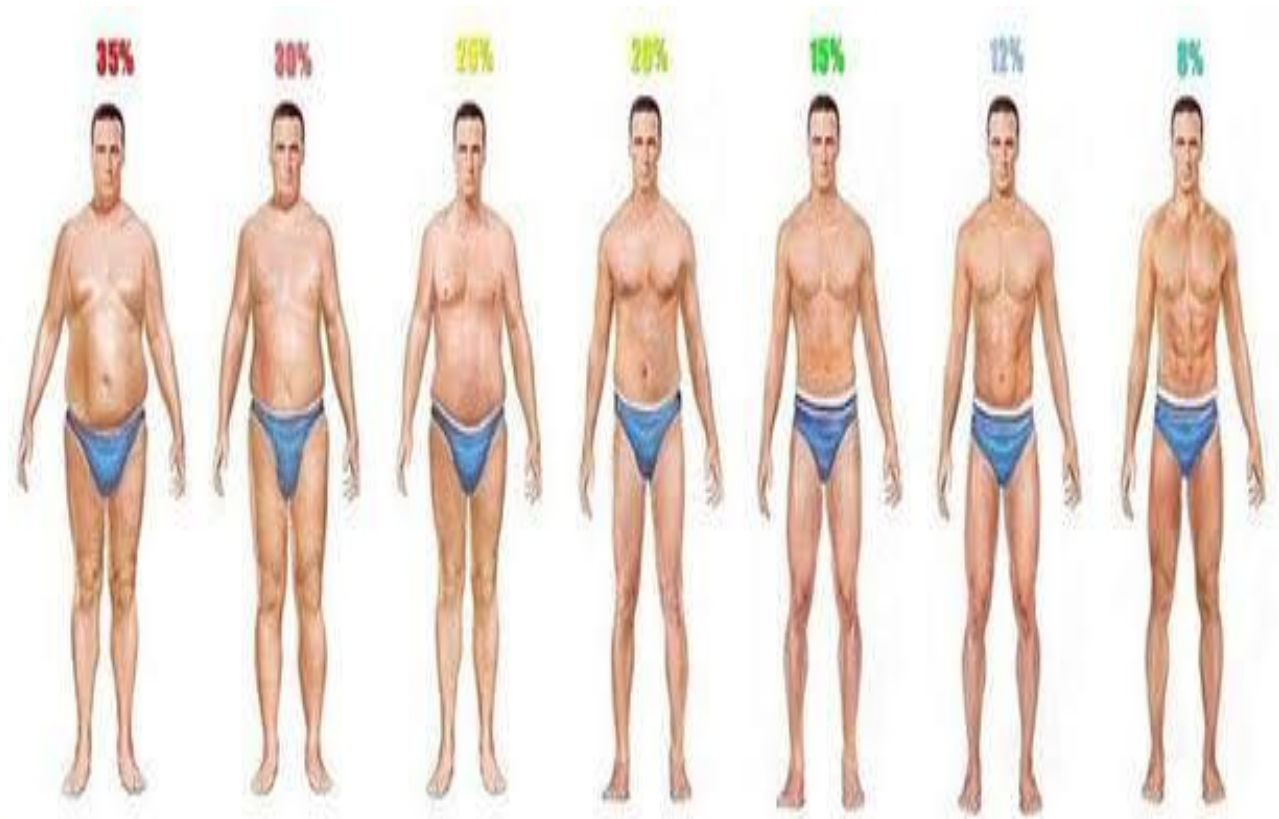
Coconut

Nuts & Seeds



How much is enough

- 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 limit in the diet

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



Fruits & Vegetables

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



Eating to compete



Pre competition meal

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 HOURS BEFORE EXERCISE:

- 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
- Bread with a thick layer of jam with milk



1-2 HOURS BEFORE EXERCISE:

- 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 HOUR BETWEEN EVENTS:

- Sports drink
- Carbohydrate gel
- Sports bar
- Jelly



DURING COMPETITION

- ⑩ **Refueling for ‘Tournament’ play:**
- ⑩ Types of food/fluid may differ depending on times between rounds or games
- ⑩ -sports drinks , fruits , low fat flavored milk and sports bars.



POST EVENT MEAL

- **In the first 30 minutes:**
 - -replace fluids & electrolytes
 - -eat high-carbohydrate foods
- Examples-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
- Example-ham sandwich , rice and beans





Hydration



**KEEP
HYDRATED**



- Water is about 70-75 per cent 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 L/h depending on intensity and duration, temperature, humidity etc.



Fluid Replacement Guidelines

Timing	Amount	Type of Beverage
Before Activity		
1-2 hours	500 mL	Plain cold water
10-15 minute	Up to 600 mL	Plain cold water, diluted fruit juice, glucose-electrolyte drink
During Activity		
Every 10-15 minutes	150-250 mL	Plain cold water, glucose electrolyte drink, diluted fruit juice
After Activity		
Immediately to 2-3 hours	Begin immediately Compensate loss in body weight	Plain water, glucose electrolyte drink

Symptoms and Results of Dehydration

Dehydration % of body weight	Symptoms and results
1%	Thirst
2%	Stronger thirst, loss of appetite
3%	reduction in urinary output, dry mouth
4%	Increased effort for physical work, flushed skin, impatience, sleepiness, nausea, emotional instability
5%	Difficulty in concentrating
6%	Impairment in exercise temperature regulation, increases pulse and respiratory rate
8%	Dizziness, labored breathing with exercise, indistinct speech, increasing weakness, mental confusion
10%	Spastic muscles, inability to balance with eyes closed, delirium and wakefulness, swollen tongue
11%	Circulatory insufficiency, decreased blood volume, failing renal function
15%	DEATH

Methods to assess hydration status of the body

- **The Urine test:** When fully hydrated large amounts of very pale yellow urine will be passed.
- The urine color will change from pale yellow to dark yellow and some times to apple red in condition of severe dehydration.
- Some times dark yellow urine is because of vitamin B Complex supplements
- Therefore if consumed supplements urine test should be done 7-8 hours after consumption of supplements.



Athlete Should Know:

- Sports specific eating habits.
- Taste should not be driving force.
- Do not follow your fellow athletes eating habits.
- Do not reward yourself with food.
- Keep your diet history .
- Always watch your weight.
- Educating yourself from reliable sources.
- Supplement are not magic pills.



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