FUELING FOR PERFORMANCE
MALLOW AC

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NUTRITION IS REQUIRED FOR PEAK PERFORMANCE

FOOD AS FUEL

- Food we consume directly influences exercise performance, for better or worse
- Poor nutrition leads to :

- possible malnutrition,
- poor recovery
- and higher injury rates

Common mistakes of nutrition in sports

- ## Insufficient Energy Requirements

✓ muscle loss, reduced performance, slow recovery, disruption of hormonal function

- ## Low blood sugar levels

✓ Low concentration, focus, energy

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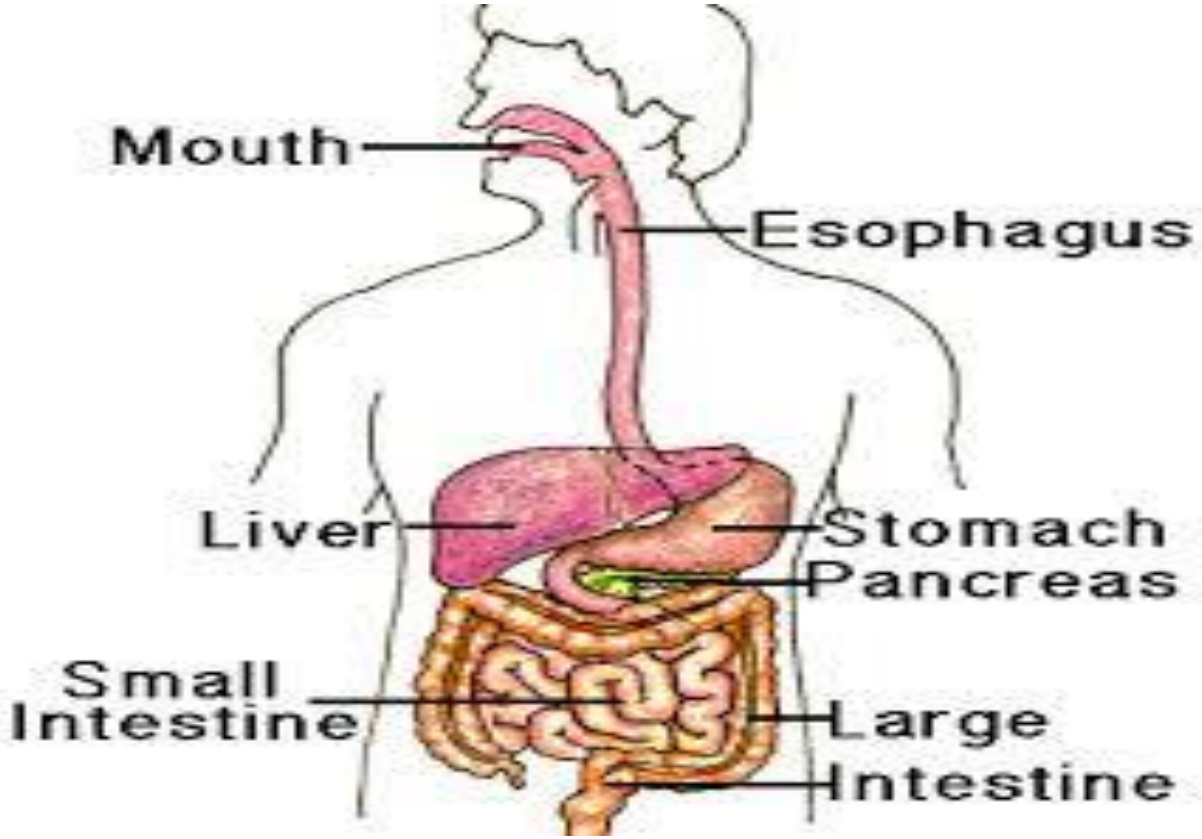
Common mistakes of nutrition in sports

- Impaired gut, poor digestion - bloating
- Bad Diet – poor muscle repair, poor recovery,



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Common mistakes of nutrition in sports

- Over training /under recovery– adrenals, lowered immunity.
- Insufficient Sleep

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Proper nutrition will ensure that you are fully recovered between training sessions

- **The harder you train, the more food you need to eat**. The amount of fuel you eat will either make or break you, and far too often athletes under-eat for a few reasons:

- Lack of preparation or planning.
- Blunted hunger due to elevated cortisol (stress) levels from intense training.
- Thinking they are eating enough.

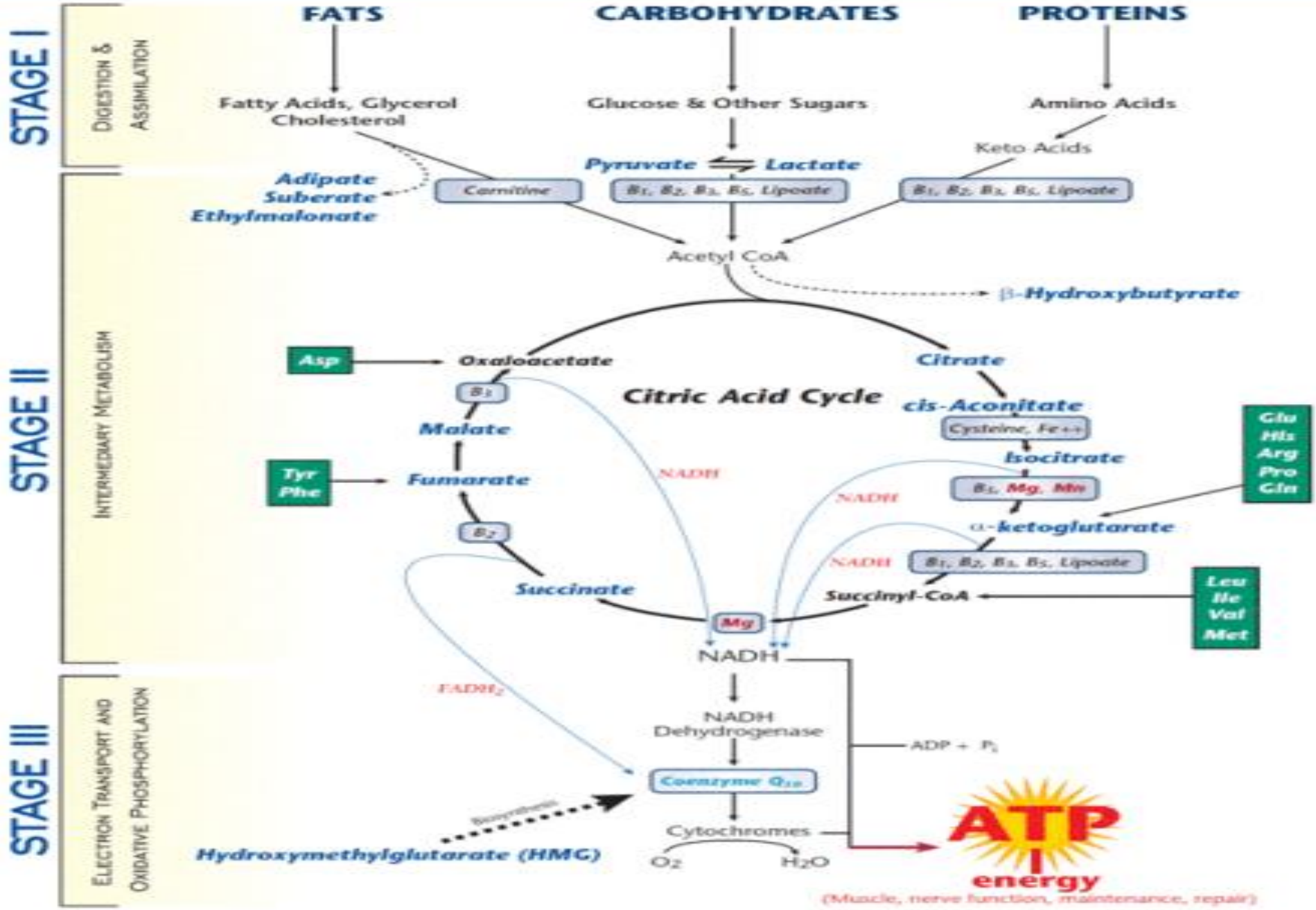

FIGURE 6.1 — **Urinary Markers of Nutrients Involved in Central Energy Pathways**

Intermediates shown in bold purple font on this condensed version of central energy biochemical pathways are compounds normally included on profiles of urinary organic acids. This figure can be useful for patient education regarding the information gained from performing the profile since most people can understand the importance of deriving energy from dietary fat, carbohydrate and protein. Essential nutrient requirements for specific steps are shown in light blue boxes. Elevations of the substrates for those steps can indicate functional insufficiency of the associated nutrient. Amino acid abbreviations shown in green rectangles indicate the points of entry of their catabolic products into the citric acid cycle.

NUTRIENT TIMING

Timing is essential

Knowing when and what to eat

- before
- during and
- after exercise

WHEN & WHAT to eat BEFORE intense training/racing

	% CARBS		Type of food/meal
4 Hours	**60-70**	**Regular meal**: limit fried foods, spicy foods, decrease fat	Pasta/rice with veggies and lean protein
3 Hours	**70-75**	**Smaller meal**	Sandwich with lean protein (tuna, chicken) & veggies; bread & nut/seed butter, energy bar
2 Hours	**75-80**		Fruit, lowfat cereal bar, cereal, bread
1 Hour	**85-100**	**Light snack**, blender/liquid meal & some fluid	Smoothie, water, sports drink, diluted juice

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PRE-EXCERCISE

15 mins -2 hrs. before :
(SMALL MEAL)
30-60 g carb snack

- Fresh fruit + low fat yoghurt
- Fruit smoothies,
- Small bowel of porridge
- Flapjack.
- Fruit bread

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PRE-EXCERCISE

2-4hrs before: (LARGE MEAL) 2-4g/kg carb

- Chicken with cous cous /quinoa and salad.
- Sweet potato and mixed beans,
- Porridge with milk,
- Chicken and veg casserole,
- Turkey Wrap + salad/veggies
- **+ Hydrate**

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Breakfast

- Porridge and sliced banana
- Homemade muesli + banana
- Oat pancakes
- Weetabix + Milk
- Wholegrain bread with banana and nut butter
- Smoothie – Vegetable or Berry Oat smoothie
- **Serve with a glass of freshly squeezed orange juice**
- **Consume more protein based on a non-training morning.**

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Small meals

- Wholegrain bread/brown pitta bread/wholegrain wraps +

  roast chicken/boiled ham/turkey + lettuce + tomato + pesto + Cucumber.

- Chicken soup + bread

Small meals

- Cous cous /Brown rice pasta +

  chicken/turkey + tomato, cucumber, peppers + pesto /tomato paste (dinner leftovers).

- Quinoa Chicken salad / vegetables

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Snacks

- Low fat Plain Yoghurt + a handful of berries (blueberries/strawberries/raspberries).
- Oat cake/bread with nut butter and a few slices of banana
- Homemade flapjacks

Carbohydrates - supply energy for the body

- **Good Sources**
- Porridge
- Fruit & Vegetables
- Sweet Potatoes
- Brown Rice
- Wholegrain Bread Oatcakes

- **Sources to Avoid**
- Processed Cereals
- Sweets, Chocolate & Confectionary
- Deep Fried Food - Chips
- Ice Cream
- Minerals – Coca Cola etc.

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PROTEIN!

Protein is needed for:

- Strong, healthy muscles and bones,
- Energy, make enzymes,
- Healthy immune system,
- Growth and repair.

Good protein sources:

- Fish,
- Poultry,
- Dairy
- Nuts and seeds,
- Eggs,
- Lean meat,
- Kidney/white beans, quinoa.

FATS : Part of every healthy cell in the body: brain, nervous system, muscles

Healthy Sources –

- Nuts – Brazil, Almonds, Walnuts, Hazelnuts.
- Seeds – Pumpkin, sunflower, chia, flaxseed.
- Oily fish – Mackerel, salmon, tuna, herring, trout.
- Avocados.

DURING EXCERCISE

LONGER THEN 60-90MINS OR
HIGH INTENSITY

30-60G carb /hr.

High GI foods:

- Isotonic drinks/ diluted juices

Solid foods :

- Energy bar,
- Sultanas, raisins,
- Ripe bananas ,

+ water.

RECOVERY

After Exercise : optimal re-fueling 30-45 minutes for light snack/meal .

Approx. 1.2 g/kg carb + 20g-25g protein

2 hrs. after substantial meal

- Refuelling the muscle and liver glycogen stores - glycogen replacement
- Muscle building
- Repair and Recovery
- Replacing fluid and electrolyte loss

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RECOVERY SNACK OPTIONS

- 200g yoghurt + Bowl of fruit salad

- 250-300ml Smoothie –milk, 1 banana, 50-75g berries, plain yoghurt

RECOVERY SNACK OPTIONS

- Baked potato + cottage cheese + glass of milk
- 1 large bread roll with meat filling and 1 large banana.
- 2 slices wholegrain bread with 250g baked beans
- + hydrate

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What To Eat Before and After a Workout

BEFORE

It's best to eat 1-2 hours before your workout and keep the meal to between 300- and500 calories of healthy carbohydrates. Try not to eat meals right before you begin a workout:

Banana

Oatmeal

Whole Wheat Toast

Yams

AFTER

The best time to eat post work-out is 20-60 minutes after you've finished so that your body uses the nutrients for recovery. Mix proteins with healthy carbs and stick to around 400 calories:

Chicken and Brown Rice

Wheat Toast and Egg Whites

Yogurt and Almonds

Protein Bar

Importance of Hydration on Performance

- Enhances the body's ability to regulate temperature
- Improves ability to recover quickly from training and competition
- Minimizes muscle cramps
- Enhances mental function, decision making, concentration, and motor control

Signs and Symptoms of Dehydration

- Lack of concentration
- Early fatigue in training session
- Trouble tolerating heat
- Delayed recovery
- Muscle cramps
- Headaches
- Nausea and vomiting

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AM I HYDRATED?

Urine Color Chart

1		
2		If your urine matches the colors 1, 2, or 3, you are properly hydrated.
3		Continue to consume fluids at the recommended amounts.
4		If your urine color is below the RED line, you are
5		DEHYDRATED and at risk for cramping and/or a heat illness!!
6		YOU NEED TO DRINK MORE WATER!
7		
8		

HYDRATION

- Runners can expect average sweat rates of 1.0-2.5L/h and body weight loss of 2-10%
- Practice taking fluids during training. Drink often during sessions. Start rehydrating after sessions.

- Before exercise approx. 400-600ml in 2hrs before exercise
- During training– Guide is 200-300 mls every 20 – 30 minutes
- Post exercise :1.2 to 1.5 x weight fluid lost

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DRINKS

Exercise Conditions	Drink
Exercise lasting <30mins	Water
Low-moderate intensity exercise lasting <1hr	Water
High intensity exercise lasting <1hr	Hypotonic or Isotonic drinks
Exercise lasting >1hr	Hypotonic/ Isotonic/Hypertonic or glucose polymer drink

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DIY SPORTS DRINKS

Hypotonic	Isotonic
100ml fruit squash (Robinson Barley) + 900ml water + 1 to 1.5g (¼ tsp.) salt	200ml fruits squash + 800ml water + 1 to 1.5g (1/4 tsp.) salt

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Marathon prep

- Two days before increase carbohydrate intake
- Meal Plate instead of ½ vegetables , now ½ carbohydrates, or have an extra bowel of porridge/ smoothie
- Not a heavy load the evening before
- Keep well hydrated

The Big Day

- Use your tried and tested , not a time for trying something new
- Porridge + toast
- Pancakes
- Oat smoothie
- Easily digestible, Low fat ,low fibre
- Pre- snack if hungry : banana, flapjack, dried fruit
- + Hydrate

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Thank You!