

Diet and Sports Nutrition

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What is Diet and Nutrition?

- **Diet**

“the customary amount and kind of food and drink taken by a person from day to day; more narrowly, a diet planned to meet specific requirements of the individual, including or excluding certain foods.”

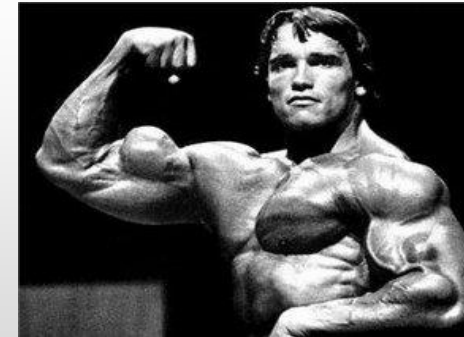
- Farlex Medical Dictionary



To Lose Weight



**Maintain Weight
for Performance**



To Gain Weight



What is Diet and Nutrition?

- **Nutrition**

“The process of nourishing or being nourished, especially the process by which a living organism assimilates food and uses it for growth and for replacement of tissues.”

- Farlex Medical Dictionary



To Lose Weight



**Maintain Weight
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To Gain Weight



Macronutrients

- ❖ A nutrient that is needed in large quantities for growth and development
- ❖ The main source of calories, or in simpler terms, fuel for the body.

Carbohydrates

4

Calories

Proteins

4

Calories

Fats

9

Calories



Carbohydrates

Simple Sugars

- Monosaccharide - Short Chain
- Glucose, Fructose, and Galactose = milk, and fruit (natural sugars)
e.g. galactose + glucose = lactose, the sugar found in milk

Complex Carbs

- Polysaccharides - Long Chain
- Glycogen, and Starch - animal products, and vegetables

Carbs that are not immediately used for energy are stored in the body as glycogen

During exercise the glycogen store is broken down in to glucose to be readily used as energy

Glycogen is large and bulky, as it contains water molecules, therefore not a great form of storage

When over eating more carbs than is needed for energy, the stored sugar is formed in to fat



Proteins

Built from
Amino Acids

Building Blocks
Of the
Human Body

The quality of the protein is dependant upon its amino acid profile, digestibility, and bioavailability

Responsible for the formation of the brain, nervous system, blood, muscle, skin, and hair

Transports vitamins, minerals, and oxygen around the body



Fats

Responsible for many critical functions:

- insulation, cell structure, nerve transmission, vitamin absorption, hormone production

Unsaturated Fats

Polyunsaturated And Monounsaturated	Cold water fish	e.g	Tuna, salmon, and cod
	Shellfish	e.g	Crab and Shrimp
	Nuts	e.g	Walnuts, and Almonds
	Natural Oils	e.g	Canola, Coconut, and Peanut

- Essential Fatty Acids (EFA) are a type of polyunsaturated fat and should make up the majority of your fat intake

Omega - 3

These promote a healthy immune system, protect against heart disease, and promote fat loss

- Trans Fats - “partially hydrogenated” oil, a manufactured oil to be avoided



Micronutrients

Vitamins

- Organic
- Must be consumed through food
- Vitamin K&D can be found from another external source
- E.g. Vitamins A, B1, B2, B3, C, D,

Minerals

- Critical for Human Life
- Can be found in food and already in the body
- E.g. Calcium, Copper, Pottasium, Magnesium, Zinc

Water

- 20% loss of water can cause death, 10% severely damages the body
- Regulates body temperature
- Transports and absorbs nutrients
- Maintains high blood volume for optimal athletic performance



Food Labels

Nutritional Facts

Nutrition Facts		
Serving Size: 1 bar (60g)		
Amount Per Serving		
Calories	300	Calories from Fat 160
% Daily Value*		
Total Fat	18 g	28%
Saturated Fat	11 g	55%
Trans Fat	0 g	
Cholesterol	15 mg	5%
Sodium	50 mg	2%
Potassium		
Total Carbohydrate	36 g	12%
Dietary Fiber	1 g	4%
Sugars	33 g	
Sugar Alcohols		
Protein	5 g	
Vitamin A		
Vitamin C	1.2 mg	2%
Calcium	100 mg	10%
Iron	0.72 mg	4%

Ingredients List

INGREDIENTS: ENRICHED WHEAT FLOUR (FLOUR, MALTED BARLEY FLOUR, REDUCED IRON, NIACIN, THIAMIN MONONITRATE (VITAMIN B1), RIBOFLAVIN (VITAMIN B2), FOLIC ACID), WATER, WHOLE WHEAT FLOUR, HIGH FRUCTOSE CORN SYRUP, YEAST, WHEAT GLUTEN, SALT, SOYBEAN OIL, CARAMEL COLOR, MONO- AND DIGLYCERIDES, CALCIUM PROPIONATE (PRESERVATIVE), MONOCALCIUM PHOSPHATE, DATEM, CALCIUM SULFATE, SOY LECITHIN, SOY FLOUR.

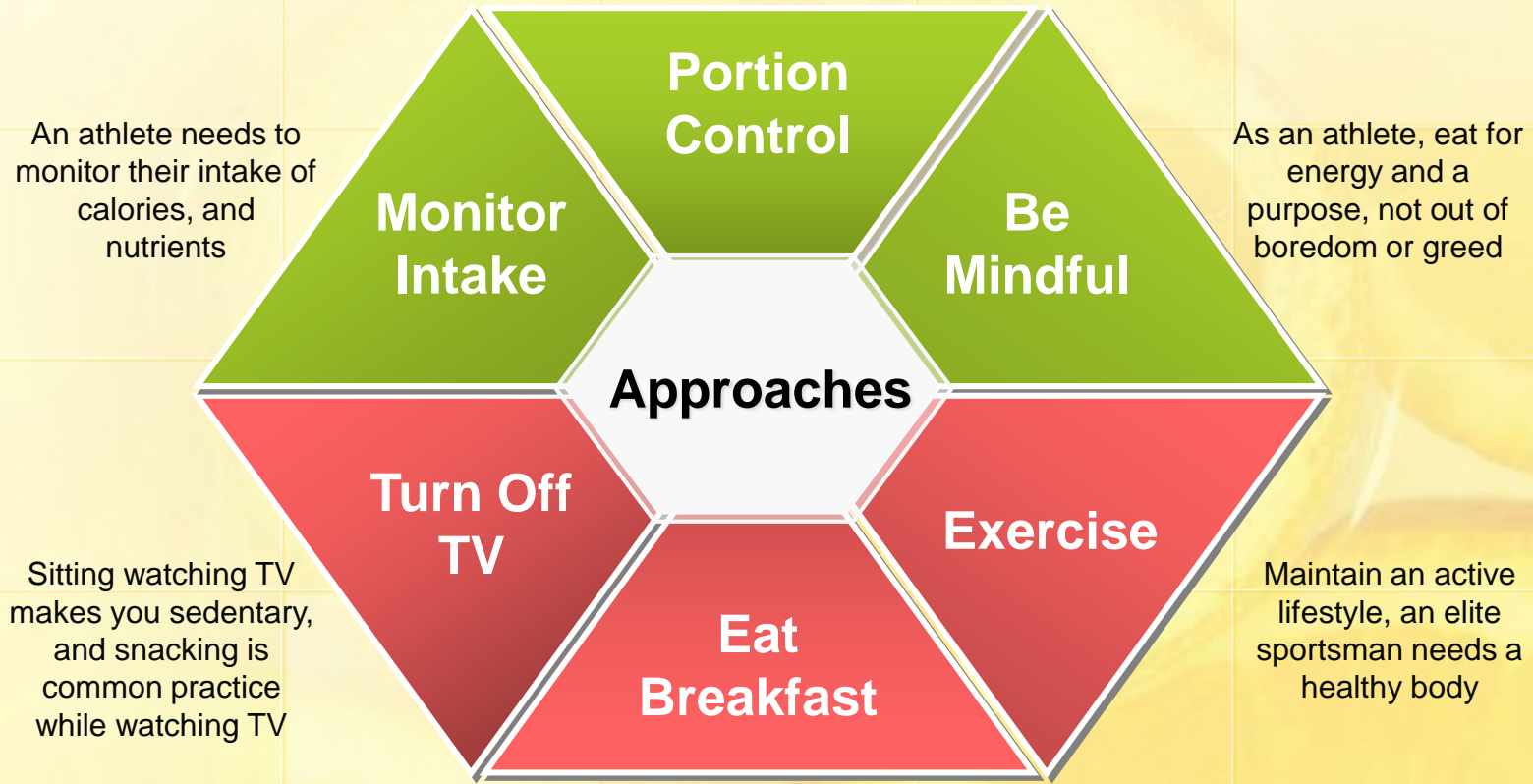
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“The USDA recommends that consumers “make half your grains whole.” Many products emphasize “Made With Whole Grains” on packaging, and even use dark brown colors and deceptive names to indicate a product is associated with the health benefits of whole grains. Unfortunately, most of these food items actually have ordinary refined wheat flour as their main ingredient, as they are not required to disclose the percentage of whole grains versus refined grains.

Although still a vague indicator as to the amount, one safeguard is to check the listed ingredients. Ingredients must be listed in order of predominance, so if something like “Enriched Wheat Flour” is first, but “Whole Wheat Flour” is further down the list, you can be sure there isn’t a large amount of whole grain in the product.”

Dietary and Lifestyle Approaches

Meals have got significantly larger over recent years, eat what you need and not the urge to finish the whole plate



Most important meal of the day. Replenishes glycogen lost over night, and fuels for the day



Sports Nutrition



Carbs and Sports Nutrition

“3- 5g/lb of body weight per day depending on their total daily energy expenditure, type of exercise performed, gender, and environmental conditions to maintain blood glucose levels during exercise and to replace muscle glycogen”

American Dietetic Association, 2000

- **Carbo loading - beneficial for long endurance events of over 90mins continuous, i.e. marathon**
- **Fuelling for exercise - carbohydrate intake for optimum performance be a light snack of carbs 30mins before athletic performance that lasts over an hour**

To maximise blood glucose levels for energy, continue carb intake during exercise of 30g per hour to maintain blood glucose levels

- **Immediately after or within 30 minutes of exercise consume carbs and protein for glycogen replenishment and muscle repair**

High Glycemic Index foods immediately after, low Glycemic Index foods there after

High GI Foods - white bread, sports drinks, jelly, fruit juice - **AVOID HIGH FRUCTOSE CORN SYRUP**

Low GI Foods - whole wheat, whole grains, plain yogurt



Protein and Sports Nutrition

**“athletes have higher protein needs than the general population”
(American College of Sports Medicine)**

**“muscle mass, strength, and function; bone health; maintenance of energy balance; cardiovascular function; and wound health”
(Wolfe & Miller, 2008)**

- **Immediately consume whey protein and casein protein**

Whey Protein - Fast absorption for immediate repair and replenishment
Casein Protein - Slow absorption for continued repair for up to 8 hours



Fats and Sports Nutrition

An individual should consume 20 - 30% of their daily intake of calories from fats. Fat is vital, and the body cannot function without it, but the right fats must be consumed.

Polyunsaturated fat, monounsaturated fat, and natural sources of saturated fats (these are found in red meats)

- Fats slow down absorption so should not be taken immediately following exercise



Hydration and Sports Nutrition

**“experts recommend that the athlete drink a sports drink that contains elevated levels of sodium”
(Coyle, 2004)**

Correct hydration will avoid -

Dehydration: loss of water. Hyponatremia: reduced blood calcium concentration

Pre Exercise

2 hours prior to exercise, drink 500 - 600 ml

During Exercise

Every 10 - 20 minutes during exercise, drink 200 - 300ml or, preferably, drink based on sweat losses

Post Exercise

Following exercise, drink 450 - 600ml for every 0.5kg of body weight lost

(Coyle, 2004)

Poor hydration can effect performance. Loss of water can effect skill performnnce and brain function
Sports drinks contain sodium and sugars, so these are an excellent source for hydration during exercise



Task

Breakfast

7am Breakfast and
mid-morning snack

Pre-Game

1.5 hour and up to kick-off

Post-Game

Full time and 1.5 hr after

Evening Meal

7pm Dinner and
bedtime snack

Your game is kicking off at 2 pm, and the coach wants you to be ready to warm up 30 minutes before the game. Design your diet plan for the above meals on your game day.



Useful Resource

The following App is a great resource for keeping track of calorie and nutrient consumption for growth and goals –

MyNetDiary:

For iPhone: <https://itunes.apple.com/us/app/calorie-counter-food-diary/id287529757?mt=8>

For Android:

<https://play.google.com/store/apps/details?id=com.fourtechnologies.mynetdiary.ad>



Thank You!

