


Tactical Nutrition for Performance & Weight Loss



Semper Fit
Health and Fitness

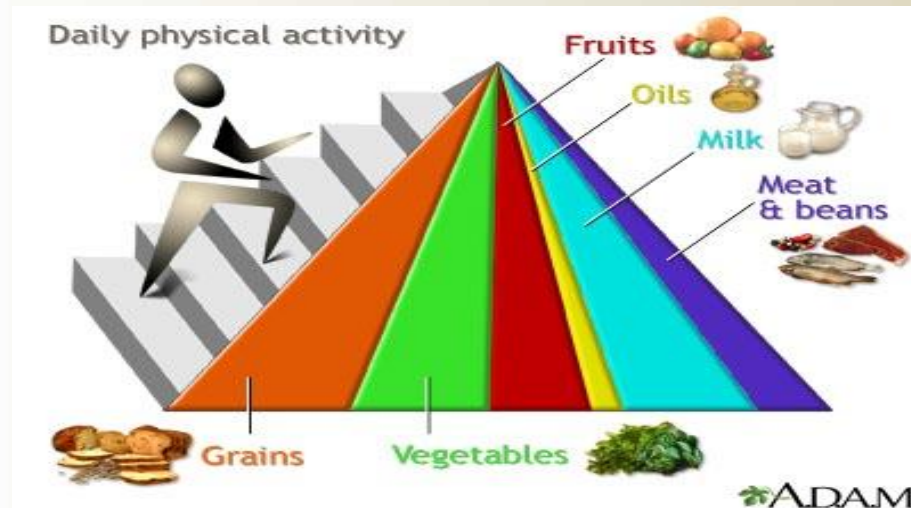


Class Objectives

- Nutrients
 - Calories in Foods
 - Alcohol
 - Eating for Performance
 - Supplements
- 

A Good Balance

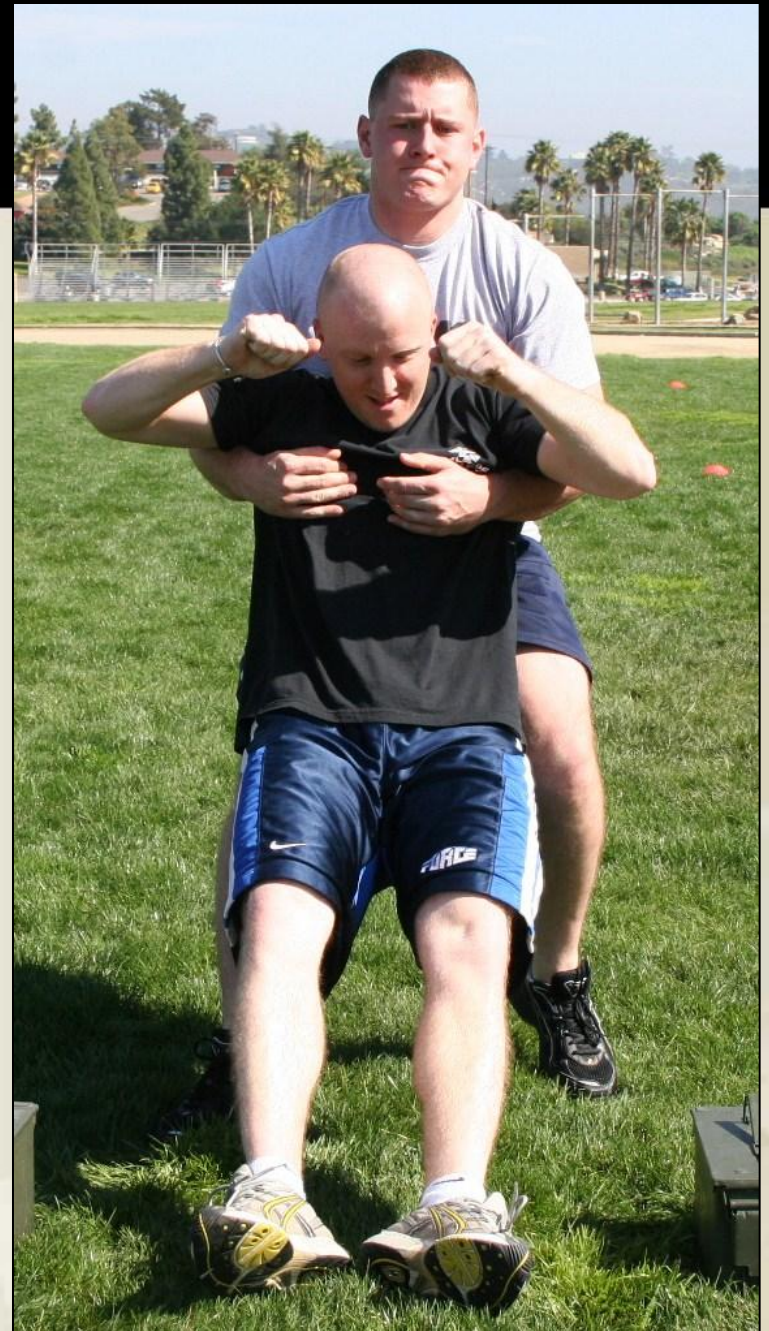
- Carbohydrates 45 – 65%
- Protein 10 – 35%
- Fat 20 – 35%



<http://www.mypyramid.gov>

Carbohydrates

- Primary fuel source for hard exercise
- Spare protein
- Faster recovery
- Maintains immune function
- Postpones fatigue
- Main source of energy



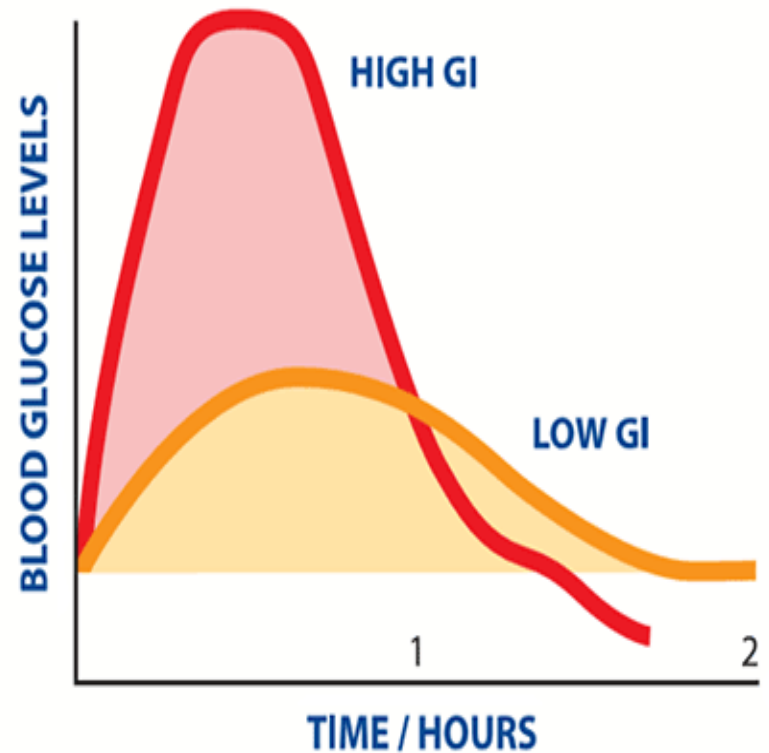
Carbohydrate Classifications

- 2 Main Groups of CHO:
 - **Complex:**
 - Natural “sugars”
 - Milk, Fruits, Vegetables
 - **Simple:**
 - Added “sugars”
 - Refined sugars added to food, candy, soda.



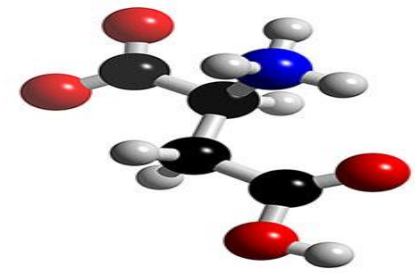
Glycemic Index

- Measure of the extent to which a food raised the blood glucose concentration and elicits an insulin response
 - Standard of comparison is pure glucose
- Differs depending on whether food is eaten alone or as part of a mix



The amount of carbohydrate in the reference and test food must be the same.

Dietary Protein



- Proteins are made up of small compounds called amino acids.
 - 20 naturally occurring amino acids
- Essential Vs. Non Essential
 - 9 essential must be supplied by the diet
 - (TV TILL PM H)
 - 11 non essential body can produce from essential amino acids.

Function of Protein

- Source of Energy
- Growth, Maintenance and Repair
- Forms enzymes, hormones, antibodies
- Supports structure and muscles and cell membranes
- Athletes only need slightly more protein than non athletes

How much Protein do you need?

- RDA for Protein = .8
 - Athletes can range from .8 – 1.5 grams/PRO/kgBW
- Calculate your requirement:
 - Take your weight in pounds / 2.2 = wt in kg
 - Weight in kg x .8 = protein requirement
 - 135lbs / 2.2 = 61.3 x .8 = 49 grams of protein



Too much Protein?

- Excess amino acids cannot be stored in the body
- Muscle strength, size and shape comes from exercise
- Too much protein can result in nutrient imbalance, kidney strain, dehydration, and excess body weight

Fats



- Provide essential nutrients, vitamins and energy.
- Line and insulates the nerves of the brain and body.
- Aid in manufacturing of antibodies
- Regular training improves your body's ability to use fat as a fuel source.

Types of Fat

Saturated fats

Saturated fats are found in animal products such as butter, cheese, whole milk, ice cream, cream, and fatty meats, and oils such as coconut, palm, and palm kernel oil



ADAM.

Saturated

Omega-3 fatty acids are found in oily fish like salmon and flaxseed and canola oils



ADAM.

Unsaturated

Trans-fatty acids

Trans-fatty acids are found in fried foods, commercial baked goods, processed foods and margarine



ADAM.

Trans

Energy Metabolism Review

<i>Food Component</i>	<i>Is broken down in the body to:</i>	<i>And then ends up as:</i>
Carbohydrate	Glucose	Liver and muscle glycogen stores
Fat	Fatty acids	Body fat stores
Protein	Amino Acids	Nitrogen lost in the urine

Calories in Foods



Meals Ready to Eat - MRE

- Totally self contained complete meal.
 - One MRE = One Meal
- Each MRE contains:
 - Entrée
 - Side Dish
 - Crackers / Bread
 - Spread
 - Dessert
 - Candy
 - Beverages
 - Hot Sauce / Seasoning



MRE

- Each MRE contains an average of:
 - 1250 calories
 - 13% Protein
 - 36% Fat
 - 51% CHO
 - 1/3 of the Military Recommended Daily Allowance
 - 24 “Menus”
 - 4 Vegetarian Meals
 - 3 MREs/day are recommended for active duty on patrols or on the front line.
(4500 – 5000kcal)



Deployment and Weight Gain?

- Many active duty gain 10 – 15lbs when deployed.
- Why?
 - Sitting around , then going from boring to distressing in a matter of minutes.
 - Food = Comfort!
 - Care packages = cookies, candy, Gatorade, etc.
- Active Duty is compared to a World Class Athlete! Train properly and eat right this will have a direct impact!

Watch out for Hidden Calories



**Coffee
with creamer**
8 oz.
30 calories



**McDonald's
Small Sprite**
16 oz.
150 calories



**Starbucks
Venti Cappuccino**
20 oz.
200 calories



**Burger King
Large Coca-Cola**
32 oz.
310 calories



**7-Eleven
Double Gulp Coca-Cola**
64 oz.
600 calories

How Much Sugar and Fat are in....??

- Sugar:
 - 1 Pop-Tart®: 17grams of Sugar
 - 1 cup vanilla ice cream: 25grams of Sugar
 - 1- 12oz can of Soda: 40grams of Sugar
- Fat:
 - Chicken Caesar Salad: 20grams of Fat
 - Fried Mozzarella Sticks: 25grams of Fat
 - Cheese Fries: 27grams of Fat

Nutrient Comparison

	<u>Calories</u>	<u>Fat</u>	<u>Saturated Fat</u>
<i>Panera Bread Cinnamon Crunch</i>	410	8 grams	4.5 grams
<i>Krispy Kreme Glazed</i>	200	12 grams	3 grams
Dunkin Donuts Glazed	180	8 grams	1 gram
1 mini bagel	80	1 gram	0 gram

Nutrient Comparison

<u>Item</u>	<u>Calories</u>
Big Mac	540
Large Fries	570
Large Coke	310
<i>Total:</i>	<i>1420 Kcals 63 grams Fat</i>

<u>Item</u>	<u>Calories</u>
Hamburger	270
Fruit and Walnut Salad	210
1% Low Fat Milk	100
<i>Total:</i>	<i>580 Kcals 22 grams Fat</i>

Nutrient Comparisons

Lettuce
Tomato
Cheese
Egg
Macaroni Salad
Coleslaw
Chicken Salad
Sunflower Seeds
Croutons
Ranch Dressing
Calories: 905
Fat: 87 grams

Lettuce/Spinach
Tomato
Carrots
Broccoli
Mushrooms
Chick Peas
Green Pepper
Fruit Salad
Dinner Roll
Reduced Fat Dressing
Calories: 390
Fat: 10 grams

Portion Distortion



- A bagel 20 years ago was 3 inches in diameter and had **140 calories**. How many calories do you think are in today's bagel??

Today's bagel has 350 calories!!!



210 Extra Calories

Portion Distortion



- A portion of spaghetti and meatballs 20 years ago had **500 calories**. How many calories do you think are in today's portion of spaghetti and meatballs?

Spaghetti and Meatballs has 1,025 Calories



525 Extra Calories

Steps on how to read a food label

- **Step 1: Serving Size**
 - How many servings are in the container?
- **Step 2: Check Calories**
- **Step 3: Limit these nutrients**
 - Total Fat: <65grams / day
 - Saturated Fat: <20grams / day
 - Trans Fat: <2grams / day
 - Sodium: <2400mg / day
 - Cholesterol: <300mg / day
- **Step 4: Review Carbohydrates:**
 - What makes up total Carbohydrates?
 - Fiber: 25 –30grams / day
 - Sugar: <50grams / day
- **Step 5: Get Enough of these Nutrients**

Nutrition Facts

Serving Size ½ cup (114g)
Servings Per Container 4

Amount Per Serving

Calories 90 Calories from Fat 30

% Daily Value*

Total Fat 3g **5%**

Saturated Fat 0g **0%**

Cholesterol 0mg **0%**

Sodium 300mg **13%**

Total Carbohydrate 13g **4%**

Dietary Fiber 3g **12%**

Sugars 3g

Protein 3g

Vitamin A 80% • Vitamin C 60%

Calcium 4% • Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

5 – signs of a Fad Diet

1. Rapid weight loss

- Healthy plans aim for a weight loss of 1 –2 pounds / week.

2. No need to exercise

- Regular physical activity is essential for weight control and overall good health.

3. Magic Food or Supplements

- There are no miracle foods or pills that burn or melt calories.

4. Bizarre quantities and limitations.

5. Specific food combinations

- There is no scientific evidence that states combining foods or eating certain foods at certain times of the day will help in weight loss.

Alcohol

- **7 calories / gram**
- Poor source of fluids – dehydrates
- Decreases the absorption of vitamins
- Can displace nutrient dense foods in the diet
- Decreases appetite
- Depletes the liver's glycogen stores and impairs its capacity to form new glucose.
- Empty Calories !!



One 12 oz beer has 103 calories. Did you ever stop and think about how many calories are in 6 beers?



=



618 Calories !!!



One Rum and Coke has 240 Calories, Did you ever wonder how many calories were in 6 Rum and Cokes??



6 Rum and Cokes have

1,440 Calories!!!!

Vitamins and Minerals



Vitamins & Minerals

- Metabolic catalysts
- Required to produce energy
- Minerals combine to form structures of the body & regulate body processes
- Do not provide energy



Vitamins & Minerals

- If deficient will effect body processes
 - Ability to utilize energy
 - Ability to heal from an injury
 - Everyday functions
- Overabundance can effect body processes too!
- Fruits & vegetables are abundant in vitamins and minerals

Water Soluble Vitamins

- Not stored in the body, the body excretes any extra!
 - Vitamin C
 - Strengthens the walls of the blood vessels, aids in wound healing and immunity.
 - Vitamin B Complex
 - Maintains health of skin, intestines, and nervous system.

More is not always better!

Supplement Facts

Serving Size 1 tablet

Amount Per Serving		% Daily Value
Vitamin C (as ascorbic acid, rose hips)	1,000 mg	1,667%
Citrus Bioflavonoid Complex providing:		
Lemon Bioflavonoids	300 mg	*
Orange Bioflavonoids	75 mg	*
Grapefruit Bioflavonoids	75 mg	*
Hesperidin	50 mg	*
Eriocitrin	25 mg	*
Rutin	75 mg	*
Rose Hips	10 mg	*

* Daily Value not established.

Fat Soluble Vitamins

- Stored in the body and if taken in excess may become toxic
 - Vitamin A
 - Healthy skin tone, helps build antibodies, eyesight, growth
 - Vitamin D
 - Comes from sunlight
 - Helps build strong bones and joints
 - Vitamin E
 - Healthy Hair and skin, antioxidant, delays the aging process
 - Vitamin K
 - Aids in blood coagulation

What to Look For:

United States Pharmacopoeia, Consumer Lab

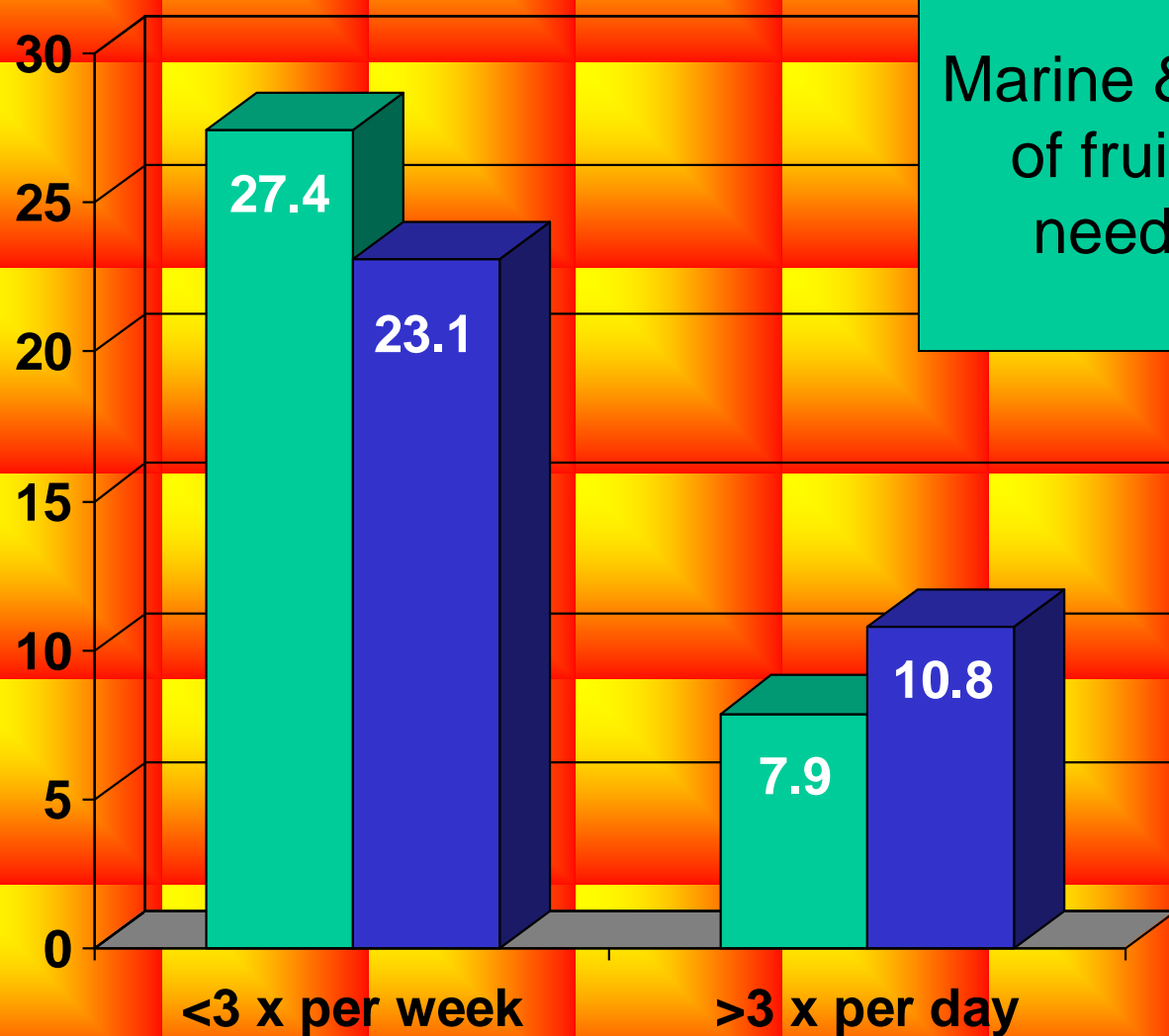


Independent product testing and manufacturing plant inspections:

Testing of products submitted to the company, perform an inspection of manufacturing facilities, practices, records, and quality control.

Product testing criteria include identity, potency, purity and bioavailability.

Fruit & Vegetable Consumption



Marine & Navy consumption of fruits and vegetables needs improvement!!!!

■ Marine Corps
■ Navy

Want to know the Secret to
weight loss, weight gain
and athletic performance?

Shh . . . Promise you won't tell!!!

CALORIES

Weight Loss -1 pound at a time

- 3500
Calories in a
week



- 500
Calories per
day

Cutting Calories	
2 Tb Mayonnaise	200
12oz Grape Juice	250
1.5oz Chips	250
¼ cup trail mix	250
Starbucks Grande Café Late	265
2oz Snickers	280
4 Oreo Cookies	280
Long Island Ice Tea	290
24oz MGD	300
24oz soda	300

Healthier Snacks

Calorie Counts

1 med orange	60
4oz fruit cup light syrup	80
1 pint of strawberries	115
1 large banana	120
8oz Low-fat yogurt	140
2 large eggs	150
Flavored tuna packet	200

Eating for Performance



Timing of Meals-Before Exercise

- Gives you energy for your workout
 - Increase intensity of workout
 - Increase calories burned during exercise=weight loss
- Eat ½ -2 hrs before exercise
- Simple and bland carbohydrate rich meal
 - Bagel/toast/cereal
 - Glass of juice
 - Piece of fruit

Meal Timing-During Exercise

- Stay Hydrated
 - Use a drink that has electrolytes with a small amount of carbohydrate
 - Ex. Some Gatorades or PowerAde, Diluted fruit juice
- Eat if exercise lasts longer than 60 minutes
 - Prevents hitting the wall
 - Helps maintain electrolyte balance
 - .5 g CHO/lb body weight per hour
 - Ex. 4 cups of sports drink & banana

Timing of Meals-After Exercise

- Extremely important for two a day workouts or after you workout if you have a physical MOS
 - Optimize muscle glycogen (energy) replenishment
 - .5g CHO/lb body weight every 2 hours
 - Small amount of protein
 - Ex. Chocolate milk, slice of turkey w/bagel, peanut butter and jelly sandwich

Timing of Meals

- Eat throughout the day
 - Maintain energy levels
 - Burns more calories
- 5-6 meals a day
 - Weight loss
 - Smaller meals
 - Prevents over eating & eating everything in sight
 - Weight gain
 - Larger meals
 - Focus on liquids with calories



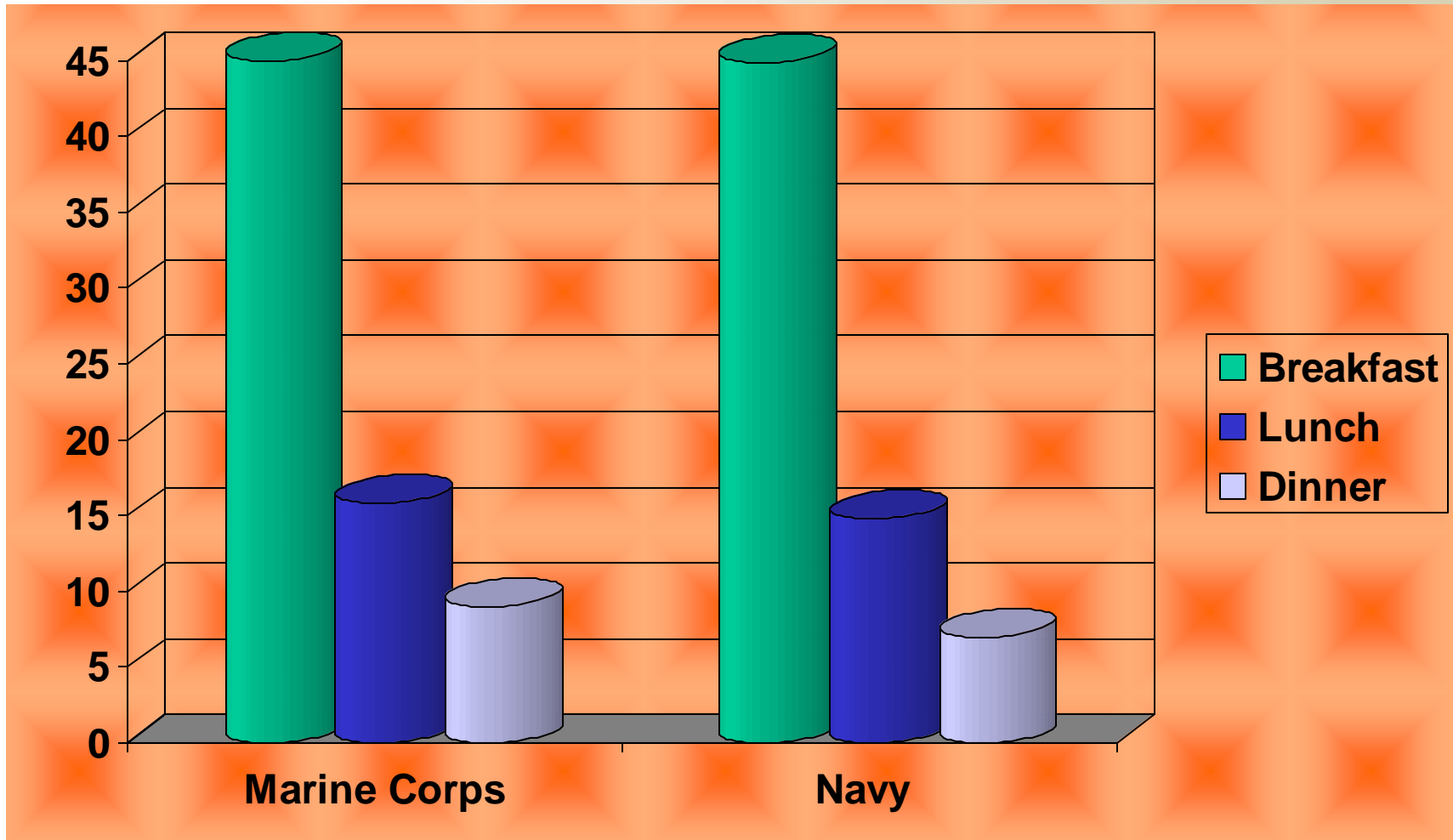
Sports Drinks

- Mostly made up of sugar; empty calories
- Only needed when exercise is more than 60 minutes long, restore glycogen storage
- 32 oz of Gatorade = 200 calories, 56 grams of sugar

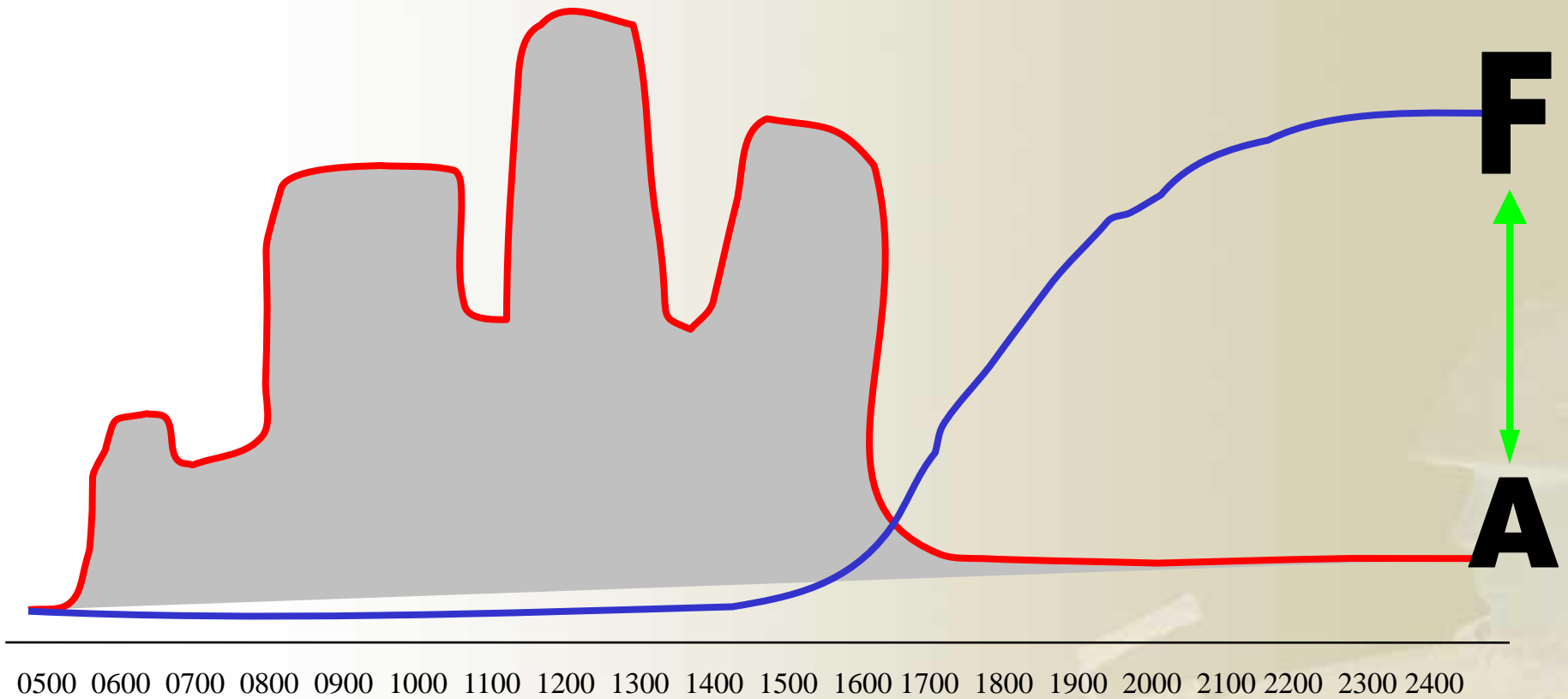
Energy Drinks

- Increase Heart Rate
- Increase Blood Pressure
- Dehydrate the Body
- Never Use when Exercising
 - Combination of Fluid loss from sweating and the diuretic quality of the caffeine can leave the user severely dehydrated!

Skipping Meals



Eat throughout the day!



Weight loss vs. Weight Gain

- Long-term weight loss
 - Lose 1-2 lbs per week
 - Decrease calories
 - 250-1000 kcals/day
 - Increase physical activity
 - 250-500 kcals/day
 - Healthy balanced diet
 - 55% Carbohydrates, 15% Protein, <30% Fat
 - Consistent Physical Activity
 - Focus on Cardiovascular but don't forget the strength training & flexibility
- Long term weight gain
 - Gain 1-2 lbs per week
 - Increase calories
 - 250-1000 kcals/day
 - Increase weight training
 - Healthy balanced diet
 - 55% Carbohydrates, 15% Protein, <30% Fat
 - Consistent Physical Activity
 - Cardiovascular, Focus on Strength, flexibility

Water

- Performance essential
- Regulates body temperature
- Carries nutrients & oxygen cells
- Cushions joints
- Weight Management
- 60% of total body weight is water



Hydration Analysis Chart



URINE COLOR

	OK
	DRINK 1 CANTEEN
	DRINK 1 CANTEEN OVER 15 MINUTES
	DRINK 3 CANTEENS OVER 2 HOURS
	

Signs of Dehydration

- Dryness in the mouth (cotton mouth)
- Shortness of breath
- Headache
- Decrease in urine and discoloration
- Nausea and/or vomiting, loss of appetite
- Confusion
- Elevated core temperature
- Seizures/coma
- Kidney Failure

Note: 1 Canteen = 1 Quart

Supplements



Diet & Supplement Warning Signs

- Quick weight loss or muscle gain
- Restriction of any one food or food group
- Very low in calories (VLCD)
 - 800-1000 calories a day
- Claims that sound too good to be true
- You can eat all you want
- Promises an easy solution
- Breakthrough findings

Food & Drug Administration

<http://www.cfsan.fda.gov/~dms/supplmnt.html>

“The Magic Bullet”

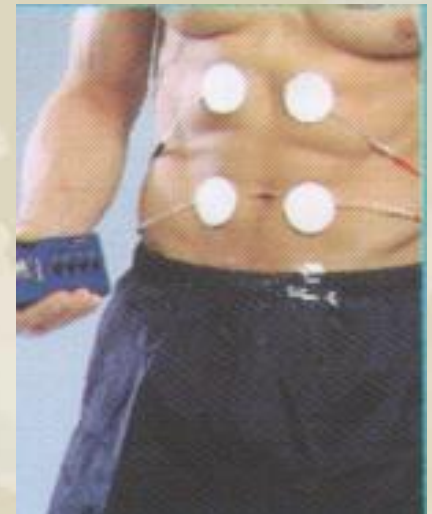
People are looking for:

- Extra Edge
- Better Results
- Easy way out
- Quick results with minimum effort

Supplement Companies:

- Great marketing schemes
- Deceptive
- No regulation

**People are willing to pay!
>\$30 billion a year industry**



Dietary Supplements

- What is a dietary Supplement?
 - A product that is taken by mouth that contains a “dietary ingredient” intended to supplement the diet.
- Dietary Ingredients in these products:
 - Vitamins, minerals, herbs, botanicals, amino acids, enzymes, organ tissues, gland tissue or secretions.
- No government testing required

We are here to help!

- Semper Fit
 - www.usmc-mccs.org
- National Strength & Conditioning Assoc.
 - NSCA-lift.org
- American Heart Association
 - 1-800-242-8721
 - www.americanheart.org
- American Dietetic Association
 - 1-800-366-1655
 - www.eatright.org

Questions?

