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Nutrition

What's the point?

Nutrition is an important part of training.

You work hard to develop your specific sport skills. You would not be a member of a Vanderbilt athletic team if you were not exceptional at your sport. You also spend time developing strength and cardiovascular conditioning. If you skipped your workouts and practice sessions, you would not stay a member of your team for very long. Nutrition is another part of your training. If you don't work at healthy eating, you are missing an opportunity to enhance and improve your performance.

What's in it for me?

In order to function at your peak, you must provide the best fuel for your body. As an athlete, the best fuel comes from a healthy diet. Eating a healthy diet daily takes education, understanding, planning, and trial and error. The Vanderbilt Athletic Department is committed to helping you make the best possible food choices to become a superior athlete.

What do I do now?

This manual was written to provide you a quick reference for eating. You might think of it as "Cliff's Notes on Nutrition." It isn't everything you need to know about nutrition, but it does include many of the most important topics. It is intended to be practical and easy to use. The format is organized to make it quick to read and easy to find the information you need. Refer to it often.

Becoming VanderBUILT Starts with Good Nutrition

Vander...

Be healthy

Three key components of a healthy diet include:

- Variety – Choose variety of foods using the Food Guide Pyramid.
- Moderation – Balance high-fat foods and sweets with healthy food choices.
- Wholesomeness – Choose fresh, natural foods as often as possible.

Understand your body needs

- Both athletes and non-athletes need the same nutrients: water, carbohydrates, protein, fat, vitamins, and minerals.
- You need more calories, carbohydrates, and water because you burn more energy, have larger muscle stores, and lose more fluids.

Improve athletic performance

- Don't take two steps forward when you workout, then take one step back with poor eating habits.
- Eating right will maximize your work-out efforts.
- Proper nutrition prevents fatigue and injury.

Long-term benefits of good nutrition

- The right foods enhance your performance, keeping you healthy, and feeling good.
- Make a commitment to practice good nutrition to decrease your risk of developing lifetime diseases, such as high blood pressure, high cholesterol, diabetes, and obesity. A well-balanced diet can help protect your long-term health.

Try gradual changes

- Avoid frustration. Gradually change your food choices to improve your diet.
- Challenge yourself to make one nutrition change each week.

Fluids and Hydration

What is the point?

- Fluid is the most important performance-enhancing nutrient!

What's in it for me?

- Maintaining consistent body temperature is a major performance factor.
- The most important function of water is cooling your body during activity.
- Evaporation of sweat into water vapor cools the body.

What do I do now?

Normal daily intake:

- 8 – 1 cup glasses of fluid a day. This could be water, juice, milk, or other non-caffeinated beverages.

Pre-exercise intake:

- 2 hours before activity: drink 2-2.5 cups of water.
- 15 minutes before activity: drink 1 cup of a sports drink or water.

During Exercise:

- Drink cup of water or sports drink every 10-15 minutes.
- Fluids that contain carbohydrate, such as a sports drink, can provide energy for activities that last an hour or more.

After Exercise:

- Weigh yourself before your activity and after the activity. For every pound lost, drink 2 cups of sports drink or water as soon as possible to increase recovery rate.

Stay Hydrated!!!

- Drink even if you are not thirsty. By the time you feel thirsty, you are already dehydrated.
- Drink something that tastes good. You'll drink more.
- Avoid caffeinated drinks (coffee, sodas, tea) and alcohol since they cause dehydration.
- The best way to determine if you are hydrated is by the color of your urine.
 - A clear color means you are hydrated.
 - A dark yellow color means you need more fluids.

Water pointers

Keep fluids available at your dorm or apartment.

Such as:

- Kool-aid, crystal light, bottled water, or juice
- Bring a water bottle to class
- Put a water bottle, juice box, or sports drink in your work-out bag
- Carry bottled water in your backpack
- Add a glass of water to each meal
- Eat Jell-o and popsicles as snacks
- Visit every water fountain you pass
- Choose caffeine-free fluids

Sports drinks and dilute juice may be better than water since they contain sodium and help you retain water and restore lost fluids.

Time to Eat!!!

What's the point?

Eating at regular intervals throughout the day will help you perform better...at everything.

What's in it for me?

- Your body needs calories every 4-5 hours.
- You will feel better during the day.
- You will perform better in class.
- You have a better chance of getting the calories you need each day.
- You will have the energy to practice and perform better.

What should I do now?

- Start the day with breakfast – get the day started right.
- Eat every 4-5 hours throughout the day
- Healthy snacks can be a part of your plan.
- Schedule your eating accordingly to meet your class/workout schedule
- Plan ahead and take food with you if necessary
- Buy portable, prepackaged foods like granola bars and snack pack fruits.
- Avoid fasting until the “pre-game meal” on game days.

** Be sure to eat meals and snacks throughout the day before going to practice or a game rather than eating one large meal afterwards.

** Don't skip meals – this can lead to overeating at the following meal. Try eating a variety of foods throughout the day to help promote a more well-balance meal plan.

Sample Pre-game Meals

- Try filling up on “complex carbs” at meals that are a few hours before competition – these will stay with you longer and help fuel you better!

Breakfast: 3-4 hours before competition

- ✓ 1 cup orange juice
- ✓ 2 cups corn flakes
- ✓ 1 banana
- ✓ 2 slices wheat toast
- ✓ 1 _ cups skim milk
- ✓ 1-2 cups water

Liquid Breakfast: 1-2 hours before competition

- ✓ 1 cup orange juice
- ✓ 1 packaged instant breakfast
- ✓ 1 cup skim milk

Lunch: 3-4 hours before competition

- ✓ 1 cup vegetable soup
- ✓ 4 oz baked chicken, no skin
- ✓ 1 cup mashed potatoes
- ✓ 1 cup green beans
- ✓ _ cup sherbet
- ✓ 2 cups skim milk

Dinner: 3-4 hours before competition

- ✓ 2 _ cups spaghetti
- ✓ 1 cup tomato sauce, lean or no meat
- ✓ _ cup parmesan cheese
- ✓ 2 cups tossed salad
- ✓ _ cup low fat dressing
- ✓ 3 pieces of Italian bread/breadsticks/dinner rolls
- ✓ 2 cups fruit juice

How many calories do I need?

What's the point?

- You need sufficient calories to fuel your body in order to perform at your best. Most athletes under-estimate their calorie needs.
- Your body needs calories even when it's resting to keep you alive.
- Calories are needed for activities like walking to class and studying.
- You burn the most calories during and immediately after exercise.

What's in it for me?

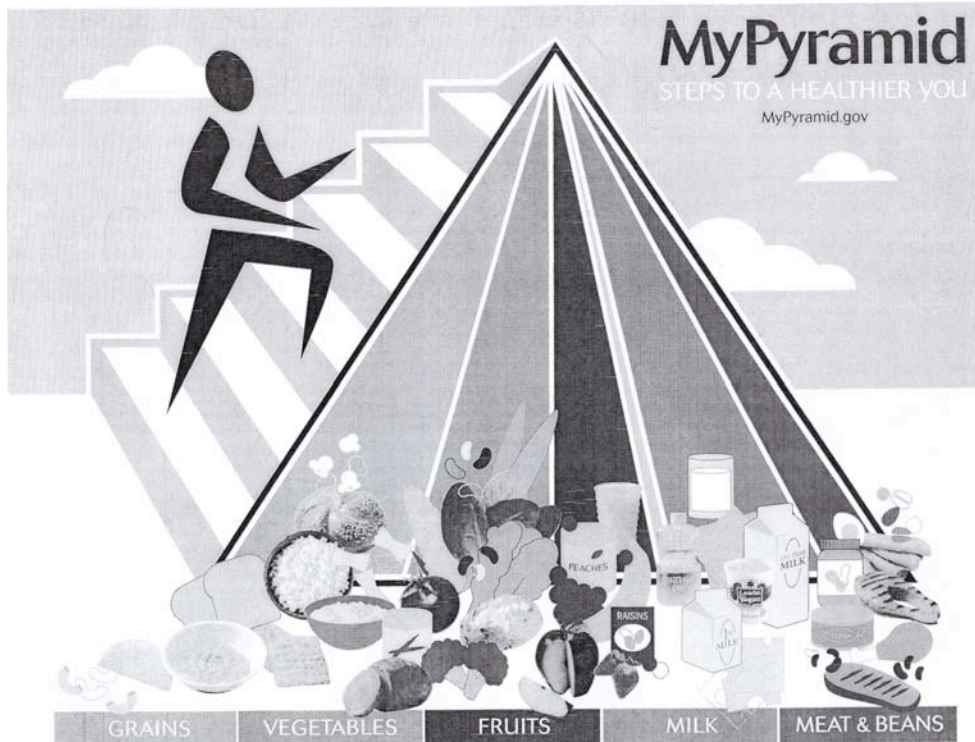
- As with any high power machine, an athlete's body needs fuel for performance.
- The body uses food calories as fuel for energy.
- The only nutrients in food that provide calories are carbohydrate, protein, and fat.
- If you don't provide your body with enough fuel, it will affect your performance.

What do I do now?

Fuel your machine!

- The following is a formula that will help you estimate how many calories you might need each day.
- Multiply 23 calories per pound of your body weight. Ex. $150 \times 23 = 3450$ calories/day

* Your sport, gender, age, body composition, genetics, season, activity level, and length and type of workout influence your calorie needs. This calculation is based on vigorous workout of 90 minutes or more almost every day. If you workout less, use 18-20 calories/pound.



MyPyramid
 STEPS TO A HEALTHIER YOU
 MyPyramid.gov

GRAINS	VEGETABLES	FRUITS	MILK	MEAT & BEANS
Make half your grains whole	Vary your veggies	Focus on fruits	Get your calcium-rich foods	Go lean with protein
Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day 1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or 1/2 cup of cooked rice, cereal, or pasta	Eat more dark-green veggies like broccoli, spinach, and other dark leafy greens Eat more orange vegetables like carrots and sweetpotatoes Eat more dry beans and peas like pinto beans, kidney beans, and lentils	Eat a variety of fruit Choose fresh, frozen, canned, or dried fruit Go easy on fruit juices	Go low-fat or fat-free when you choose milk, yogurt, and other milk products If you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages	Choose low-fat or lean meats and poultry Bake it, broil it, or grill it Vary your protein routine – choose more fish, beans, peas, nuts, and seeds

For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.

Eat 6 oz. every day	Eat 2 1/2 cups every day	Eat 2 cups every day	Get 3 cups every day; <small>for kids aged 2 to 8, it's 2</small>	Eat 5 1/2 oz. every day
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Find your balance between food and physical activity

- Be sure to stay within your daily calorie needs.
- Be physically active for at least 30 minutes most days of the week.
- About 60 minutes a day of physical activity may be needed to prevent weight gain.
- For sustaining weight loss, at least 60 to 90 minutes a day of physical activity may be required.
- Children and teenagers should be physically active for 60 minutes every day, or most days.

Know the limits on fats, sugars, and salt (sodium)

- Make most of your fat sources from fish, nuts, and vegetable oils.
- Limit solid fats like butter, stick margarine, shortening, and lard, as well as foods that contain these.
- Check the Nutrition Facts label to keep saturated fats, trans fats, and sodium low.
- Choose food and beverages low in added sugars. Added sugars contribute calories with few, if any, nutrients.



U.S. Department of Agriculture
 Center for Nutrition Policy and Promotion
 April 2005
 CNPP-15



www.govt.org/units/food/and/nutrition

Pyramid Power:

The Food Guide Pyramid is a guide to the recommended amount of each food group needed each day.

Your needs will vary based on your body size, activity level, and overall health.

- The Pyramid provides the building blocks for a healthy diet.
- The Pyramid provides the recommended amounts of each type of foods to achieve variety in your diet.
- Each group provides unique vitamins and mineral for your body.
- All food fits in the Pyramid, and some combination foods fit into more than one food group.

Why the new Food Guide Pyramid?

In April 2005, the new Food Guide Pyramid was released by the U.s. Department of Agriculture. The new “MyPyramid” Food Guidance System graphic symbol was designed to help consumers implement the 2005 Dietary Guidelines for Americans into their daily eating plans. All of the details related to this new graphic can be found at: <http://mypyramid.gov>.

Similar to the previous Food Guide Pyramid, the USDA retained the iconic and widely known shape of the Food Guide Pyramid as the government's primary graphical symbol of variety, proportion and moderation in making good nutritional choices.

The hope behind the new food guide pyramid is that it would help promote a greater understanding of the recommendations both related to food and exercise. The Food Guide Pyramid is designed as a symbol to help promote a consumer message as well as include motivational and educational tools that work together to help people make healthier food choices.

The 2005 Dietary Guidelines emphasize greater consumption of fruits, vegetables, low-fat dairy products and whole grains – foods that are naturally high in nutrients and low in calories. The new Food Guide Pyramid demonstrates:

- (1) Take a personalized approach to dietary advice and weight management, recognizing that one size does not fit all.
- (2) Eat a variety of foods from every group in balance and in moderation.
- (3) Pay attention to calorie consumption.
- (4) Achieve a balance between food and regular physical activity.

In summary, the new Food Guide Pyramid was designed to help people better understand and apply the recommendations of the 2005 Dietary Guidelines for Americans in their daily lives.

The Food Groups

Foods are grouped together because their nutrient content is similar. Each group supplies some, but not all, of the nutrients your body needs. Because the nutrients within each group are different, foods in one group cannot replace those in another. Also, it is important to choose a variety within each food group.

- **Bread/Starch (Complex Carbs):** Carbohydrate foods form the base of the Pyramid and a healthy diet
- **Fruit:** Carbohydrate foods that are naturally sweet and full of flavor
- **Vegetables:** Provides many vitamins, fiber, and a small amount of carbohydrate
- **Dairy:** Good source of carbohydrate, calcium, and protein
- **Meat & alternatives:** Provides protein for muscle growth and repair
- **Fats & sugars:** Foods in this group are high in calories and low in nutrients. Fats and sugars can also be found in foods in all the groups depending on how they are prepared.

Jumpin' through the 15-30 minute window

What's the point?

After the workout, you need to replace carbohydrates!!!!

What's in it for me?

- You will recover faster after a workout.
- You will increase your energy stores.
- You may feel less tired and fatigued.
- Maximum carbohydrate stores may give you the winning edge.

What should I do now?

- Calculate the amount of carbohydrate you need after a workout or practice that lasts longer than 90 minutes
- Use the formula to figure out how many carbs you need:
- $0.5-1 \text{ g of carbohydrate} \times \text{your body weight (in pounds)}$.
- Be prepared! Bring your carb snacks to your workout or practice.
- Eat your snack within 15-30 minutes of finishing your workout. Follow with the same amount of carbs every 2 hours.
- You can use carb foods or liquids. Liquids will help replace fluids.
- Use "the carbohydrate food list" to help you choose carb snacks.
- If you workout less than 90 minutes, subtract 25-50% of the carbs.

Carbohydrates: The Primary Fuel Source

What's the point?

Carbohydrate is the main fuel that powers your body. Carbohydrates form the foundation of the Food Guide Pyramid and should form the foundation of your performance diet.

- Carbohydrates are found in a variety of foods - bread, cereals, grains, rice, pasta, milk, fruit, cookies, and other desserts
- Carbs can be divided into 2 groups - simple and complex
 - **Simple** carbohydrates include fruit sugar (fructose), corn syrup (dextrose or glucose), and table sugar (sucrose)
 - **Complex** carbohydrates include everything made of 3 or more linked sugars – examples: whole grain breads, pasta, cereals, and rice

What's in it for me?

- Eating the right amount of carbohydrate can increase your energy level.
- A carbohydrate based diet can improve your performance.
- When you're training or competing, your muscles need carbohydrate to perform.
- Carbohydrate is the primary fuel for high-intensity, anaerobic sports such as football, soccer, basketball, and track.
- A mixture of carbohydrate and fat provides fuel for aerobic sports such as cross-country.
- Not eating enough carbohydrates may result in muscles "hitting the wall" or "crashing."
- Eating carbohydrates after a workout speeds up your muscles recovery time. Plan to add special carbohydrate snacks after a workout to replace what you burned (See "Jumpin' through the 15-30 minute window").

What should I do now?

- - of the foods on your plate at meals and snacks should come from carbohydrates.
- Choose carbohydrate foods from different food groups each day to provide the wider variety of vitamins and mineral.
- Avoid "empty" carbohydrates, which provide little nutrition.
- Sugary foods such as candy, sodas, cakes, and cookies.
- Some fat-free snack foods often add excess sugar to make up for fat.
- If you don't enough carbohydrate you may be tired, get sick easily and you won't perform at your best in the classes or at your sport.

Carbohydrate in the Bread Group

You need 6-11 servings per day
(about 15 grams of carbohydrate and 80 calories each)

Bread group Serving

- 1 (6-inch) tortilla
- $\frac{1}{2}$ cup cooked rice or pasta
- $\frac{1}{2}$ cup cooked oatmeal, grits, or cream of wheat cereal
- $\frac{1}{2}$ cup cooked barley, bulgur, or other cooked grains
- 1 ounce ($\frac{3}{4}$ cup – 1 cup) ready to eat cereal
- 1 slice enriched or whole grain bread (1 oz)
- 1 (4-inch diameter) pancake or waffle
- $\frac{1}{2}$ hamburger roll, bagel, pita bread, or English muffin
- 2 medium cookies
- 3-4 small crackers
- 3 Tbsp wheat germ

Pyramid Pointers

- Your muscles burn food from this food group when you workout
- Start your meal planning with your carbohydrate food
- Bread group foods are usually low in fat and cholesterol
- Whole grain choices provide more fiber
- Some cereals are “enriched” and provide extra iron or calcium
- Watch out for “fat free” choices from this group. They may have extra, empty calories from added sugar.

Pump up your bread intake

- Use instant hot cereals for a quick breakfast choice.
- Frozen pancakes and waffles make breads at breakfast.
- Burritos, pasta, and rice bowls make breads easy at lunch.
- Tuck a granola bar in your backpack for “on the run” fuel.
- Experiment with new grains such as buckwheat, millet, couscous, bulgur, or risotto.
- Add rolls, bread, or cornbread to your dinner meal.
- Cereal is good for a quick carbohydrate snack.

Carbohydrate in the Vegetable group

You need 3-4 servings per day
(about 5 grams of carbohydrate and 24 calories/serving)

Vegetable Group Serving

- _ cup chopped raw, non-leafy vegetable
- 1 cup of leafy, raw vegetables (lettuce, spinach, cabbage)
- _ cup cooked vegetables
- _ cup cooked legumes (beans, peas, or lentils)
- 1 small baked potato (3 ounces)
- 3/4 cup vegetable juice

Pyramid Pointers

- Vegetables come in two categories:
 - Starch – corn, beans, potatoes, peas, acorn squash, and butternut squash
 - Non-starch – most others such as tomatoes, green beans, peppers, eggplant, yellow squash, zucchini, mushrooms, onions, asparagus, greens, Brussels sprouts, etc.
- Starchy veggies are a good source of carbohydrate for fuel and provide vitamins such as Vitamin C and some of the B's.
- Beans provide one of the best sources of fiber and can actually help lower cholesterol.
- Non-starchy veggies provide a wide variety of vitamins.
- Deep yellow and dark green ones provide beta-carotene.
- Tomatoes and peppers provide vitamin C. Green leafy ones provide Folic Acid
- Because the nutrients differ so much, it's important to eat a wide variety of vegetables.
- Lettuce provides water, but not many nutrients compared to other vegetables unless it is a dark, green lettuce.

Pump up your veggie intake

- Make salads more interesting – use a variety of greens such as arugula, Bibb lettuce, chicory, kale, leaf lettuce, romaine, spinach, and watercress.
- Add veggies to lunch and snack in order to get 3-5 servings/day.
- Se spinach, sprouts, and cucumbers on a sandwich.
- Top pasta, rice, or baked potatoes with stir-fry or steamed veggies.
- Try tomato or V-8 juice with breakfast or lunch.
- Add black or other beans to salads.

**** Be adventurous: Try new veggies such as Swiss chard, kale, parsnips, beets, bok choy, okra, and squashes.**

Carbohydrate in Fruit Group

You need 2-3 servings per day
(about 15 grams of carbohydrate with 60 calories each)

Fruit group Serving

- 1 medium fruit
- _ grapefruit, mango, papaya
- _ cup fruit juice
- _ cup berries or cut fruit
- _ cup canned, frozen, or cooked fruit
- _ cup dried fruit

Pyramid Pointers

- Citrus fruits (orange, grapefruit, tangerine), melons, and berries provide vitamin C
- Your body needs vitamin C-rich foods everyday.
- The body can use vitamin C very quickly, so spread out these foods during the day.
- Deep yellow fruits (apricots, mangos, cantaloupes, and peaches) are rich in Vitamin A.
- Fruits, especially with edible peels, provide fiber.
- Pectin is a fruit fiber thought to help lower blood cholesterol.
- Fruit provides potassium and folic acid.
- The sweetness in fruits comes from its natural sugar called fructose.
- Sometimes sugar is added to frozen or canned fruit increasing calories.
- Most fruits are low in fat and all are cholesterol free.
- Avocados and olives are fruits, but they contain monounsaturated fat.

* **Monounsaturated fat helps lower the bad cholesterol, but not the good cholesterol.**

Pump up your fruit intake

- Fruit juice is an easy “on the run” way to eat fruit into your day.
- Add fruits to salads.
- Add grapes or tangerines to chicken salad.
- Sprinkle dried fruit on cereal and yogurt, puddings, or ice cream.
- Try fruited breads and muffins.
- Ask for fruit as a side when eating out.

- Carry whole or dried fruits in your backpack to eat on the run.
- Blend a couple of pieces of fruit with ice, milk, or ice cream for a smoothie.
- Be adventurous: Try uncommon fruits such as prickly pear, papaya, mango, star fruit, figs, kiwi, and guava.

Protein: A Building Block for the Body

What's the Point?

- Protein plays an important part in all cell growth and repair.
- Protein helps your body recover from injury and sports related stress.
- Protein foods are found primarily in the meat and dairy food groups.
- Protein is also found in smaller amounts in the bread/starch, fruit and vegetable groups of the Food Guide Pyramid.

What's in it for me?

- Protein helps maintain your muscle mass, builds and repairs tissue, and provides some energy. If you don't eat enough protein it will limit your ability to build muscle.
- In addition to protein, foods in this group provide iron, zinc, and B vitamins (Thiamin, Niacin, Vitamin B6 and B12).
- Protein supplements are rarely needed since most people already consume more than enough protein without trying.

Protein is essential for:

- Building and repairing muscles
- Red blood cells
- Hair
- Other tissues
- Synthesizing hormones
- Found in: fish, poultry, meats, tofu, beans
- Sources of calories used for energy (*if inadequate carbohydrates are available*)

What do I do now?

Use the meat and dairy food groups for your source of protein foods. You can find meat and dairy food ideas below.

Carbohydrate and protein from milk, yogurt, and cheese group

You need 3-4 servings per day
(about 90-120 calories each)

Milk, Yogurt, and Cheese Group Serving

- 1 cup of milk or buttermilk
- 1 cup of yogurt
- $\frac{1}{2}$ cup evaporated milk
- $\frac{1}{3}$ cup dry milk
- 1 oz. of natural cheese (cheddar, mozzarella, Monterey Jack)
- $\frac{1}{2}$ cup ricotta cheese
- 2 oz processed cheese (American)
- 1 cup frozen yogurt
- $\frac{1}{2}$ - 1 cup cottage cheese
- 1 cup ice cream

Pyramid Pointers

- Most dairy products are an excellent source of calcium.
- In addition to carbohydrate, protein, and calcium, dairy products can provide fat.
- Low-fat or fat-free dairy products provide all the nutrients without extra calories.

Pump Up your Dairy Intake

- Add low fat milk on cereal
- Add low-fat cheese on sandwich
- Choose low fat yogurt dips with vegetables
- Have decaffeinated coffee au lait or latte with skim milk
- Use shredded low fat cheese on soup and salad
- Have pudding made with skim milk for dessert
- Use evaporated skim milk in coffee
- Make yogurt or yogurt-fruit smoothies for breakfast
- Add evaporated skim milk to batters and casseroles

Protein from meat, poultry, fish, dry beans, eggs, and nuts group

You need 5-7 oz per day
(55-200 calories per serving)

2 oz of meat (about 110 calories)

- $\frac{1}{2}$ cup tuna or ground beef
- 1 small chicken leg or thigh
- 2 slices of sandwich meat

3 oz meat, cooked meat the size of a deck of cards (about 110-200 calories)

- 1 medium pork chop
- $\frac{1}{2}$ lb. hamburger patty
- 1 chicken breast
- 1 un-breaded 3 oz fish filet

Substitutes for 1 oz of meat (about 55-90 calories)

- $\frac{1}{2}$ cup cooked lentils, peas, or dry beans
- 1 egg
- $\frac{1}{2}$ cup egg substitute
- 2 Tbsp peanut butter
- 1/3 cup nuts
- 4 oz tofu
- 1 oz hard cheese
- 8 oz of skim milk

Excellent sources of protein

Beef	Finfish
Pork	Shellfish
Chicken	Eggs
Turkey	Game: venison, rabbit
Tofu	Peanut butter
Nuts	Dry beans (legumes, lentils, peas)

Animal Protein

The meat group provides us with complete proteins. It also indirectly provides a lot of the fat we eat. Almost all animal foods have some amount of fat, some of which is saturated. Your body uses saturated fat to make blood cholesterol. Some kinds and cuts of meat have more saturated fat than others.

Plant Protein

Plant protein provides incomplete protein, but if these foods are eaten over a 24-hour period, the body can use the amino acids to make complete proteins. The plant foods in this group: dry beans, peas and nuts, are also excellent sources of protein. These foods are also free of cholesterol and most are free of saturated fat. Beans and peas are also excellent sources of carbohydrate and fiber and are virtually fat free. Nuts and nut butters supply protein and vitamins, but they also contain fat. The fat in nuts is monounsaturated, which is a healthy type of fat for your heart, but still contains calories.

Pump up your protein intake

Animal sources of protein

- Hardboiled eggs make a fast breakfast. You may eat up to 4 egg yolks per week
- Use egg whites on salads
- Deli sandwiches or subs make a great lunch
- Try grilled, broiled, boiled, and baked cuts of meat, poultry, and fish for dinner
- 1 oz hard cheese counts as 1 oz meat

Plant sources of protein

- Try vegetarian chili or lasagna with beans
- Use tofu in vegetable stir-fry
- Eat bean soup for lunch
- Mix garbanzo or black beans into a salad
- Toss chopped nuts in a salad or casserole
- Order bean burritos or tacos
- Mix up a 3, 4, or 5 bean salsa
- Spread apple slices with peanut butter
- Try hummus as a dip for chips or veggies
- Order a veggie or bean burger

Fats: Concentrated Energy Source

What's the point?

- Fat is something that the body needs, though our bodies don't require large amounts.
- An extremely low fat diet is very unhealthy and will harm your performance.
- Athletes actually burn fat as a fuel during exercise.

Source of stored energy (calories) :

- Burned mostly during:
 - low-level activities (reading, sleeping)
 - long-term activities (long training runs, bike rides)

Classification:

- Saturated Fats
 - Animal Fats (butter, lard, meats)
 - Coconut oil
 - Contribute to heart disease, certain cancers
- Mono/Poly unsaturated fats
 - Vegetable oils (olive oil, corn oil, canola oil)
 - Peanut oil
 - less harmful

What's in it for me?

- Body fat protects your vital organs, provides insulation from the cold, and transport vitamins throughout the body
- Fat provides vitamins A,D, and E
- Fat is a major source of flavor in most foods
- Fat provides a **source of calories for long-term exercise**
- Fat is digested slowly and can keep you feeling full for a longer time
- **Too little fat in your diet can limit your performance – especially during endurance events where fat is used as a fuel source for the body**
- Sugar-containing foods satisfy a sweet-tooth and provide extra performance calories.

What should I do now?

- Fats can be included in your food choices if you are eating a healthy diet.
- No one should eat less than 25-30 g of fat per day

Types of Fat

- **Monounsaturated fat** is the best option
- Olives, nuts, avocados, olive oil, peanut oil, canola oil
- These food do contain a concentrated source of calories, but your body does not use this type of fat to make cholesterol
- **Polyunsaturated fats** are a good option
- Vegetable oils such as corn, soy, and safflower
- These also contain calories, but your body does not use this type of fat to make cholesterol
- **Saturated fat** comes from animal and some plant fats
- Meat, butter, lard, coconut oil, palm oil, and palm kernel oil
- Your body uses saturated fat to make artery-clogging cholesterol

Replacing saturated fat with monounsaturated fat

- Use peanut, canola, or olive oil.
- Go easy on spreads, toppings, gravies, and sauces.
- Limit cream cheese, sour cream, and butter.
- Choose low fat, vegetable margarine in a tub.
- The softer the margarine, the less saturated fat.
- Use nuts for the crunch on salads, rather than bacon.
- Ask for olive oil to dip breads instead of butter.
- Replace chips and fries with nuts and sunflower or pumpkin seeds.
- Use peanut butter for breakfast and sandwiches.
- Choose low fat or fat free dairy products, including cheeses.
- Add avocado to salads.

Sweets: Concentrated Energy Source

Sweets and Sugars

- Sweets can provide extra calories if you are meeting your other nutrient needs for the day.
- Sugar is a carbohydrate, but provides mostly calories with few vitamins or minerals.
- Many low fat and fat free foods are high in calories, because they have large amounts of sugar.

Fats and Sweets on the Food Guide Pyramid

Fats

Salad Dressings
Oils
Cream
Butter
Gravy
Margarine
Cream Cheese

Sweets

Sugars
Soft Drinks
Jams
Candies
Jellies
Sherbet
Gelatin

Counting fats and sugars

- Fats and sugars are found throughout all of the other food groups in the pyramid. For example, fried potatoes are a starchy vegetable, but they also count as a source of fat. Cherry pie has fruit, but it also has sugar and fat. If you look at a food label, every 15 grams (1 Tbsp) of sugar is one sweet choice. Every 5 grams (1 tsp) of fat is considered to be one fat choice.

Minerals

- Minerals provide structure in forming bones and teeth
- Help maintain normal heart rate
- Aid in muscle contraction
- Regulate metabolism
- Activate numerous reactions that release energy from carbohydrates, fat, and protein
- Components of hormones control the body's metabolic rate
- Minerals are located in all food groups of the Food Guide Pyramid
- Minerals are involved in many different processes in the body

Listed below are dietary sources and major bodily functions for some of the most important minerals relating to physical performance.

<u>Mineral</u>	<u>Food Sources</u>	<u>Function</u>
Calcium	Milk, cheese, dark green vegetables, and dried legumes	Bone and tooth formation, blood clotting, and nerve transmission
Potassium	Leafy vegetables, cantaloupe, lima beans, potatoes, bananas, milk, and meats	Fluid balance and nerve transmission. It also helps prevent muscle cramps.
Iron	Eggs, lean meats, legumes, whole grains, and green leafy vegetables	Aids in energy metabolism. Deficiency can lead to weakness and reduced resistance to infection.
Zinc	Widely distributed in foods	Aids in digestion
Chromium	Legumes, cereals, fats, vegetable oils, meats, and whole grains	Glucose (blood sugar) and energy use

Calcium

What does calcium do?

- Builds bones, length, and strength.
- Keep bones strong as you age by slowing the rate of bone loss.
- Helps your muscles contract and nerves function.
- Helps your heart beat.
- Helps your blood clot.

Not enough calcium can

- Interfere with bone growth (bones stop growing when you are in your early 20s).
- Adversely affect bone density and bone loss.
- Increase the risk of stress fractures.
- Result in muscle cramping.
- Increase the risk of osteoporosis.

Facts you should know about calcium

- Many female athletes (even just physically active women) have increased risk of developing osteoporosis later in life.
- Female athletes need 1200-1500 mg of calcium each day.
- One serving from the dairy group has about 300 mg calcium.
- Dairy foods also provide protein, phosphorus, potassium, Vitamin A, and Vitamin D.
- Calcium-fortified orange juice does not replace any of these nutrients, so if fits into the fruit group with an added calcium bonus.
- Choosing low or non-fat milk foods will save calories, but still provide nutrients.
- Butter, cream, cream cheese, and sour cream do not fit into the milk group because they are high in fat. These foods are in the fat group.

Iron

Women need 15 mg and men need 10 mg of iron each day. Iron is found in red blood cells. If you lose blood, you lose iron. Women who are menstruating lose iron every month. Vitamin C increases the body's ability to absorb iron.

Iron fortified cereals can provide up to **100%** of the iron your need. These include:

<u>Cereal</u>	<u>% RDA</u>	<u>Calories</u>
Total		
Whole Grain	100%	110 calories/cup
Corn Flakes	100%	110 calories/ 1 1/3 cup
Raisin Bran	100%	180 calories/cup
Brown sugar/Oats	100%	110 calories/ _ cup
Kellogg's Smart Start	100%	180 calories/cup
Post Banana Nut Crunch	90%	250 calories/cup
Grape Nuts	90%	210 calories/ _ cup
Kellogg's Just Right	90%	220 calories/cup
Kellogg's Special K	90%	210 calories/cup
Kellogg's Mini Wheats	80-90%	200 calories/24 biscuits
Life	45%	120 calories/ _ cup
Kellogg's Corn Flakes	45%	100 calories/cup

Vitamins

Vitamins contain no calories or energy; however, they make everything happen when they work together with the macronutrients. Vitamins are either water or fat-soluble.

Water-soluble vitamins

- Water-soluble vitamins dissolve in water and are distributed in body fluids.
- Water-soluble vitamins are not stored for very long in your body.
- They regulate the processes that release energy from the food you eat.
- Vitamins in the B-family and Vitamin C are water-soluble.

Fat-soluble vitamins

- Fat-soluble vitamins are found in fat in foods and stored long-term in your body fat **which can be a hazard of mega-dosing fat soluble vitamins**.
- They are important for vision, bone growth, and blood clotting.
- Vitamins A, E, D, and K are all fat-soluble vitamins.

Every vitamin has special duties in your body. Listed below are examples of dietary sources and the major functions of vitamins.

**** If you are interested in taking a multi-vitamin daily, this would be recommended over mega-doses of individual vitamins.**

<u>Vitamin</u>	<u>Food Source</u>	<u>Function</u>
Vitamin A	Green vegetables, sweet potatoes, carrots, milk, and cheese	Maintains good eyesight, healthy bones, healthy skin, and nerve and muscle function.
Vitamin D	Eggs, dairy products, and milk	Promotes bone growth and increases absorption of calcium
Vitamin E	Seeds, green leafy vegetables, margarine, and shortenings	Protects cells from damage and helps repair injured tissue.
Vitamin K	Green leafy vegetables small amounts in cereals, fruits, and meats	Necessary for blood clotting
B complex vitamins	Wide variety of foods including meats, eggs, dairy products, whole grain breads and cereals, and fruits and vegetables	Help produce energy in your cells, protein production, hormone regulation, formation of new cells and red blood cells
Vitamin C	Citrus fruits, tomatoes, green peppers, and salad greens	Aids wound healing and protects cells from damage

Menu Planning, Shopping, and Cooking: Putting it all together at the grocery store

**Grocery Shopping...so many choices...
How do you make healthy choices without spending hours?**

With a few tips, shopping can be simple:

Tips & Hints

- How many meals do you fix at home?
- How many people are you shopping for?
- How much food storage space do you have?
- How many meals are you shopping for?
- How long before you shop again?
- Avoid impulse buying.
- Make a list before you shop.
- Buy food that travels and stores well in your locker, backpack, etc.
- Shop around the “outside” of the store – that’s where you find the fresh products: fruits, vegetables, meat, dairy, etc.
- Try to avoid the processed/packaged foods in the center of the store.

A well-stocked pantry, dorm, cabinet, etc., is the first step in preparing nutritious food at a moment’s notice.

Eating on Campus

**Fill up and fuel up with these power-packed foods
in the dining halls and markets**

McGugin

- Pasta (brown or white)
- Fruit (fresh, frozen, canned – in own juice, packed in water or light syrup)
- Starchy vegetables (corn, peas, potatoes)
- Whole grain bread, rolls, or crackers
- Frozen yogurt
- Low fat yogurt or milk
- Juice

Other spots on campus

- “Handy Vandy” meals are available in the Varsity Markets
- VanGo sandwiches, salads, fresh fruits, milk, yogurt
- Low fat muffins
- Bagels
- English muffin
- Smoothies
- Bean burritos
- Mexican rice
- Pasta with marinara sauce
- Veggie pizza
- Italian bread
- Salads
- Stir-fry veggies
- Rice bowl
- Deli sandwiches
- Rotisserie chicken
- Fruit 2 O
- Skim milk
- Fresh squeezed juices
- Decaffeinated Latte or Cappuccino

When Minutes Matter – Campus Munchie Marts

Need a quick meal or snack, but don't have much time?
There's always time when you run into one of these convenient locations...

- Stock-up on Healthy Foods and Snacks

- Varsity markets have healthy snacks available
- Shop on the weekends or @ Rand, try the weekly produce stand (on Wednesdays)
- Make a trip to the local grocery store
 - **FoodLand:** 2900 West End Ave. - Close enough to Vandy campus to walk
 - **Harris Teeter:** 2201 21st Ave. South - Close enough to Vandy campus to walk, ride bike, or drive

Breads:

Bagels
English muffin
Whole grain bread
Canned ravioli or spaghetti
Crackers

Fruit:

Fresh fruit
Fruit Juice

Meat and meat alternatives:

Ready-made sandwiches
Cheese
Deli meats
Bean dip
Beef jerky
Peanut butter

Snacks & treats:***

Power bar
Tortilla chips
Vanilla wafers
Popcorn

Milk:

Yogurt
skim milk
cheese

Vegetables:

Fresh broccoli, cauliflower,
celery & carrots
Ready-made salads
frozen vegetables
Canned vegetables

Sun chips
Pretzels
Cookies
Gatorade

*** These foods have carbohydrates, but they also may have extra fat.

Snacks, Sweets, and Goodies

**Instead of wasting calories on foods with no value,
make these treats count toward good nutrition:**

- Microwave popcorn
- Low fat yogurt
- Granola/cereal bars
- Pudding
- Graham crackers and peanut butter
- Rice Krispie treats
- Jell-o with fruit
- Fruit cup
- Pre-cut veggies with low fat dip
- Pimento cheese on crackers
- Cottage cheese and fruit
- Low fat cheese and crackers
- Fruit and yogurt smoothie
- Fresh fruit
- Frozen grapes

Menu Ideas

Pizza delivery gets old quickly, and it lacks the fuel you need for tip-top performance.

Try some of these quick and easy meal/snack ideas:

Breakfast ideas

➤ *Juices*

Calcium-fortified orange, cranberry, pineapple, or vegetable

➤ *Milk*

Preferably skim or low-fat

You can even add instant breakfast to it to add some more protein

Fruit and yogurt smoothies

➤ *Bagels*

Whole grain or cinnamon raisin are great choices

➤ *Cereal*

Total, Special K, Life, Shredded wheat, Grape-nuts, and others that are fortified with iron

➤ *Muffins*

Low fat bran or fruit muffins or English muffins

➤ *Instant Oatmeal*

- 1-2 minute microwave meal
- applesauce and graham crackers (natural, no sugar added applesauce)
- yogurt: sprinkle with dried fruit or granola
- scrambled eggs: they can be cooked in the microwave
- frozen waffles: add carbohydrate rich syrup or fruit topping
- fresh fruit: apples, bananas, melon, strawberries, blueberries

Lunch/Supper Ideas

- Potato
 - o Microwave and top with canned chili, low fat sour cream/cheese, bacon bits, salsa
- Canned soup
 - o Potato, split pea, bean, vegetable, tomato, rice soup
- Angel hair pasta
 - o Add bottled marinara sauce, frozen vegetables, and low fat grated cheese
- Tortilla with beans –add low fat cheese and salsa
- Ramen noodles: add frozen mixed vegetables
- Sandwiches
 - With lean deli meat, tuna, or chicken, and baked chips
 - With peanut butter and jelly and baked chips

Or, try some of these other Snack Ideas

- Make individual serving sizes of nuts, pretzels, popcorn, dry cereals (ex. Chex)
- 1 regular pudding cup (1/2 cup) + 1 banana
- 1 Nature's Valley Granola Bar + cup applesauce
- 1 Tbsp Peanut Butter + 1 Rice Krispie Treat Bar
- 1 pack Fig Newtons (2 cookies) + 4 oz yogurt
- 1 Nature's Valley Granola Bar/Trail Mix bars
- 1 Tbsp Peanut Butter + 4 graham cracker squares
- 1 Nutrigrain bar + cup dried fruit (examples: raisins, apricots, or banana chips)
- 1 medium apple + 2 Tbsp peanut butter
- 1 cup celery sticks + 2 Tbsp peanut butter + cup raisins
- 1 cup trail mix/Chex mix (or try making your own: try including pretzels, dry cereal such as Chex or Cheerios, nuts, dried fruit)
- cup peanuts/almonds/cashews
- 1-6 pack peanut butter cookies or crackers
- 1 Tbsp peanut butter + 1 Chewy granola bar or cup animal crackers
- 1 snack bag of Teddy grahams + cup applesauce
- Luna Bar/Pria Bar/Power Bar
- 8 oz. Dannon Fusion (yogurt drink)

Tips for Eating Out

- Skip the bread, tortillas, or other “free” foods at the start of the meal.
- If you choose to eat the bread, eat it without butter; or, try it with olive oil or balsamic vinegar.
- Ask for salad dressings on the side; instead of dumping the dressing onto your salad, dip your fork into the dressing prior to each bite of food.
- Avoid fried foods.
- Instead of cream-based soups, choose those with broth or tomato bases.
- Avoid white sauces or anything made with cream; opt for marinara or oil olive instead.
- Choose foods that are baked, broiled, or grilled .
- Sides: choose a vegetable to go with your meal (raw or cooked).
- Instead of a potato, ask for brown rice instead.
- Make dessert an occasional treat rather than the natural end to every meal.
- If you have dessert, choose fresh fruit or sorbet.
- Try splitting dessert with a friend.
- Beware of coffee drinks. They can be full of fat and calories. Try flavored coffees or drinks made with non-fat milk rather than cream.

Healthier Meals on the Go

Subway:

- 6 inch Veggie Delight
- 6 inch Turkey Breast
- 6 inch Roasted Chicken Breast

McDonald's

- Garden Salad with Reduced-Calorie Dressing
- Chicken McGrill without Mayo
- Fruit & Yogurt Parfait

Taco Bell

- Chicken Soft Taco
- Bean Burrito

Wendy's

- Grilled chicken Sandwich
- Mandarin Orange Salad with Low-Fat Dressing

Weight Gain

What's the point?

- If you are underweight, you are much less effective in your sport.
- If you need to gain weight, do it the healthy way.

What's in it for me?

- If you are underweight, your body is less able to withstand the constant pounding.
- You may suffer repetitive strain injuries, over-training, and chronic fatigue
- If you gain muscle weight, it increases your ability to apply force against the ground, making you faster and more powerful.
- Muscle is denser than fat, you can gain weight and lose size at the same time.

What do I do now?

- Don't skip meals
- Add snacks between meals
- Take larger/extra portions of carbohydrate foods when you eat
- Add healthy fats such as nuts, peanut butter, and olive oil
- Add a healthy snack before you got to bed
- Maintain or increase your intensity in the weight room.
- Avoid the weight gain powders and drinks – use real food.
- Be realistic. A pound per week is the most you can reasonably expect.

Weight loss

What's the point?

There's a right and wrong way to lose weight

- Too few calories can effect your performance.
- Starvation diets will negatively affect your health.
- A “no fat” diet is NOT healthy.
- Cutting out food groups will limit needed nutrients.
- Diets don't work.

What's in it for me?

- A smart approach maintains energy levels while you lose weight.
- Eating a wide variety of healthy foods maintains good health.
- Avoid feeling of guilt and possible binging. All foods can fit.
- A “non diet” plan avoids the yo-yo syndrome.
- A healthy approach can set you up for a lifetime of good habits.

What do I do now?

- Avoid fad diets – see next section for more details.
- Don't cut out all the fat
- Talk with your trainer or sports nutritionist about your ideal weight range.
- Arrange for a consultation with the sports nutritionist for a personalized plan.
- Get help – don't make mistakes when it comes to your weight – talk to your coach or your trainer about setting up an appointment with the nutritionist.

Fad Diets

How to recognize a fad diet

- Magic or Miracle Foods
- Rapid weight loss/quick fix
- No exercise
- Rigid menus, “good” vs. “bad” foods, specific combinations
- Recommendations based on a single study or studies published without a peer review
- Sounds too good to be true

= a FAD DIET!

Some Fad Diets include

- Blood Type
- The Zone
- South Beach
- Sugar Busters
- Atkins
- Dr. Phil’s Ultimate Weight Loss Solution

Blood Type Diet

- Philosophy
 - o An individual’s blood type determines his/her susceptibility to illness, which foods you should eat, how you should exercise
 - o Dietary Recommendations
 - Specific quantities of macronutrients are not identified
 - Proportions vary depending on blood type
- Possible Adverse Effects
 - o Extremely limited in a variety of nutrients due to blood type only allowing certain foods
- Missing Nutrients
 - o Varies depending on “your diet” specific for your blood type
- No literature to support principles

The Zone

- Philosophy
 - o Eating foods in the “right” combination can lead to an ideal metabolic state, “the zone,” keeps insulin and eicosanoid levels down for peak mental and physical performance
- Dietary Recommendations
 - o 40% Carbohydrate, 30% protein, 30% fat
- Possible Adverse Effects
 - o Very low in kcals
- Main reason for weight loss
 - o Low in fiber and fruits
- Missing Nutrients: Fiber, Folate, Calcium, & other vitamins and minerals
- Minimal literature to support ideas

South Beach

- Philosophy
 - o The faster that sugars and starches are digested, the more weight is gained
 - o 3 phases:
 - 1st 2 weeks = most restrictive = 1st “detoxification” phase
 - 2nd phase: reintroduction certain healthy carbohydrates using glycemic index
 - 3rd phase: least restrictive – can eat “anything” in moderation - excluding refined flours, supposed high glycemic foods
- Dietary Recommendations
 - o 3 phases banning carbohydrates and allowing normal-size portions of meat, poultry, shellfish, vegetables, eggs, and nuts
 - o 2nd and 3rd phases emphasize whole grains, lean proteins and dairy, unsaturated fats, fruits, vegetables; consistent meal times, snacks, plenty of water
- Weight loss results due to low kcal intake
- Possible Adverse Effects
 - o Promotes potentially dangerous accelerated weight loss in first phase

- Missing Nutrients
 - o Fiber, calcium

Sugar Busters

- Philosophy
 - o Eliminate sugar from your diet
 - o Indicates that sugar is toxic to the body because it releases insulin
- Dietary Recommendations
 - o No firm guidelines
 - o Diet should be very low in refined carbohydrates
- Possible Adverse Effects
 - o High fat/high protein diets have been shown to lead to heart disease as well as other diseases
- Missing Nutrients
 - o Fiber, Calcium, Folate, and other vitamins & minerals

Atkins

- Philosophy
 - o Eating too many carbohydrates and a low fat diet is the cause of obesity in America as well as several other health problems
- Dietary Recommendations
 - o Low carbohydrate (25-90 g/day) RDA is 300g/day
 - o Fat and protein make up the rest of the diet – no type of fat are excluded
- Possible Adverse Effects:
 - o High in total fat and saturated fat which can lead to several diseases
 - Ex. Heart disease
 - o Puts extra stress on the kidneys, because of the excess metabolic state your body enters without carbohydrates and excess protein
 - o May also cause fatigue and constipation as fiber is excluded and no
- Missing Nutrients
 - o Several vitamins and minerals
 - Calcium, fiber, vitamin C, folate (to name a few)

- Fun Fact
 - o If you normally took in 250g/day of carbohydrate and decided to follow the Atkins diet and consumed 90g/day of carbohydrate what happens...
 - o You just cut 640 kcal/day out of your diet!
 - o What's the message – you didn't just cut carbohydrates, but decreased the amt of calories in each day. Ex.: kcal out > kcal in = wt loss energy from carbohydrates

Facts about high protein/low carbohydrate diets

- Not enough dietary CHO = body burns stored carbohydrates (glycogen) for energy – releases a lot of water weight
- Body will start to burn some fat...
 -NOT as efficiently as exercise would!
- Burning fat without CHO creates toxic byproducts (Ketones)
- Ketosis –suppresses appetite, causes fatigue, nausea, and leads to dehydration
- Long-term health effects unknown potentially risky

What is a net carb?

- A new phrase that is not defined by the FDA
- *Engineered by manufacturers* to create “shelf appeal”
- Manufacturer calculation:
 - Total carbohydrates – (grams of fiber + grams of sugar alcohol) = net carbs

Alcohol

What's the point?

- Alcohol has a negative effect on all physical activity. This includes practice, lifting, conditioning sessions, and games.
- Calories in alcoholic beverages are “empty,” meaning they contain no nutrients.
- Alcoholic beverages are high in calories – 7 kcal/g...they are more similar in calories to fat than carbohydrates (9 kcal/g = fat, 4 kcal/g = carbs).
- In short, there is NO upside to drinking alcohol for athletes!

What's in it for me?

**** not much, nutritionally or otherwise!!!****

- Alcohol acts as a diuretic, causing excessive urination and therefore dehydration
- Alcohol depletes your vitamin, potassium, zinc, magnesium, and calcium stores.
- Alcohol impairs your ability to regulate temperature. Hot feel hotter, cold feel colder.
- Alcohol depresses your appetite, keeping you from replacing your energy needs OR it can increase your appetite and make you pick poorer food choices since your inhibitions are decreased.
- Alcohol can cause stomach ulcer formation
- Alcohol is a depressant and impairs brain function
- Alcohol destroys brain and liver cells

What do I do now?

- Avoid alcohol
- Avoid situations where both alcohol and peer pressure will be present
- Be your own boss – people who pressure you to drink are not your friends!

Dietary Supplements

What's the point?

- Supplements are different than ergogenic aids.
- Supplements are nutrient replacements such as carbohydrate beverages, vitamins, minerals, and protein powders.
- Supplements will not fix a bad diet.
- Supplements may or may not improve your performance.
- Athletes may need more nutrients than the average person.
- Supplements are best seen as an insurance policy.
- Supplements can be expensive.

What's in it for me?

- Carbohydrate drinks can replace calories and restore glycogen levels, but they are often deficient in vitamins, minerals, and fiber.
- Fluid replacement, sports drinks can help you retain needed fluids, but can supply excess calories to your diet.
- A multi-vitamin supplement can ensure that you get 100% of vitamins and minerals.
- A calcium supplement may be useful if you do not eat dairy products – or inadequate amounts of dairy (less than 3-4 servings/day).
- If you are dieting, a supplement may supply necessary nutrients.
- Many vitamins and minerals may impair performance and can be toxic in large amounts.
- Excess iron, from supplements, is not well absorbed, can make you sick, and may build up in your body to a dangerous level.
- Many times supplements contain what is claimed on the label; however, sometimes they don't.

What do I do now?

Try to meet your nutrient needs with food first. Use the Food guide Pyramid for variety and balance to insure the best opportunity for the most nutrients.

- Athletes eat more calories than the average person, thus they receive more nutrients.
- Avoid large doses of any nutrient.
- Use carbohydrate replacement beverages correctly.
- See the chapter on carbohydrate replacements.

- Don't overload on fluid replacement beverages. They can contribute excess calories to the your diet – water works, too! They can also cause stomach distress.
- If you take a multi-vitamin, look for 100% of the RDA – more is not better – too much can be dangerous.
- Take your supplements with or shortly after a meal to increase absorption.
- Check the expiration date before you buy.
- Buy from a well-known, major manufacturer.
- If you have questions, ask your strength & conditioning coach, athletic trainer, or registered dietitian.

Ergogenic Aids

What's the point?

- Ergogenic means the potential to increase work output.
- Ergogenics could be dangerous to your health – now and/or later.
- There is little long-term research on most ergogenics.

What's in it for me?

- Some ergogenics may be beneficial, but have not been researched.
- There is no scientific evidence for many of the claims.
- The manufacturers provided much of the information.
- Many ergogenic aids may have unknown, serious side effects.
- The “placebo-effect” is real. If you believe it works, you feel differently.

NCAA Banned-Drug Classes (2004-2005)

The NCAA list of banned-drug classes is subject to change by the NCAA Executive Committee. Contact NCAA education services or www.ncaa.org/health-safety for the current list. The term “related compounds” comprises substances that are included in the class by their pharmacological action and/or chemical structure. No substance belonging to the prohibited class may be used, regardless of whether it is specifically listed as an example.

Many nutritional/dietary supplements contain NCAA banned substances. In addition, the U.S. Food and Drug Administration (FDA) does not strictly regulate the supplement industry; therefore, purity and safety of nutritional/dietary supplements cannot be guaranteed. Impure supplements may lead to a positive NCAA risk. Student-athletes should contact their institution's team physician or athletic trainer for further information.

Bylaw 31.2.3.1 Banned Drugs

The following is a list of banned-drug classes, with examples of substances under each class:

(a) Stimulants

Amiphenazole	methylene-dioxymethamphetaime
Amphetamine	(MDMA – [ecstasy])
Bemigrade	Methylphenidate
Benzphetamine	Nikethamide
Bromantan	Pemoline
Caffeine ¹ (guarana)	Phendimetrazine
Chlophentermine	Pentetrazol
Cocaine	Phendimetrazine
Cropropamide	Phentermine
Crothetamide	Phenylephrine
Dimethylamphetamine	Phenylpropnolamine (PPA)
Doxapram	Picrotoxine
Ephedrine	Pipradol
(ephedra, ma huang)	Prolintane
Ethamivan	Strychnine
Ethylamphetamine	Synephrine
Fencamfamine	(citrus aurantium, zhi shi, bitter orange)
Meclofenoxate	and related compounds
Methamphetamine	

(b) Anabolic Agents

Anabolic steroids	Fluoxymesterone
Androstenediol	Gestrinone
Androstenedione	Mesterolone
Boldenone	Methandienone
Clostebol	Methenolone
Dehydrochlormethyl- testosterone	Methyltestosterone
Dehydroepiandrosterone (DHEA)	Nandrolone
Dihydrotestosterone (DHT)	Norandrostenediol
Dromostanolone	Norandrostenedione
Oxandrolone	Norethandrolone
Oxymesterone	Tetragdrogestrinone (THG)
Oxymetholone	Trenbolone
Stanozolol	and related compounds
Testosterone ²	
	<u>other anabolic agents</u>
	clenbuterol

(c) Substance Banned for Specific sports

Rifle:

Alcohol

Atenolol

Metoprolol

Nadolol

Pindolol

Propranolol

Timolol

and related compounds

(d) Diuretics

Acetazolamide

Bendroflumethiazide

Benzthiazide

Bumetanide

Cholorothiazide

Chlorthalidone

Ethacrynic acid

Flumethiazide

Furosemide

Hydrochlorothiazide

Hydroflumethiazide

Mehtyclothiazide

Metolazone

Polythiazide

Quinethazone

Spirolactone

Triamterene

Trichlormethiazide

and related compounds

(e) Street Drugs

Heroin

Marijuana³

THC

(tetrahydrocannabionol)³

(f) Peptide Hormones and Analogues

Chorionic gonadotrophine (HCG-human chorionic gonadotrophin)

Corticotrophin (ACTH)

Growth hormone (HGH, somatotrophin)

All the respective releasing factors of the above-mentioned substances also are banned.

Erythropoietin (EPO)

Sermorelin

(g) Definitions of positive depends on the following:

¹ for caffeine – if the concentration in urine exceeds 15 micrograms/ml

² for testosterone – if the administration of testosterone or use of any other manipulation has the result of increasing the ratio of the total concentration of testosterone to that of epitestosterone in the urine to greater than 6:1, unless there is evidence that this ratio is due to a physiological or pathological condition.

³ for marijuana and THC – if the concentration in the urine of THC metabolite exceeds 15 nanograms/ml.

What do I do now?

- Don't try the newest thing on the market. It usually has the least research.
- Do not rely on what you read in muscle magazines.
- The same company that publishes the magazine may be the same company selling the supplement.
- ***Before taking any supplement, check with your coach and compliance coordinator to be sure that it is not on the NCAA list of banned substances.***
- Consult with a registered dietitian, athletic train, or certified strength and conditioning specialist about the latest research on supplements.
- Be wary of claims made by individual athletes.
- Learn how to distinguish real research from advertisements.
- Real research:
 - Is usually referenced so you can read the original work yourself
 - Is published in a journal that is reviewed by experts in the field
 - Is conducted on large numbers of people over a long time.

Remember, if a product sounds too good to be true, it probably is too good to be true.