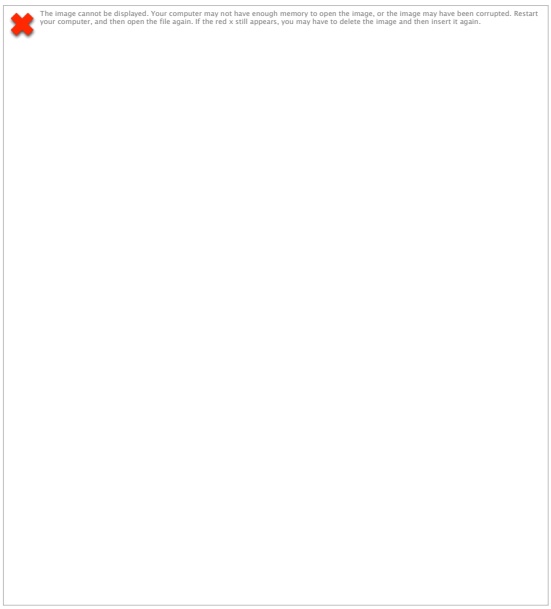
WYOMING HIGH SCHOOL NUTRITION PLAN



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10 HEALTHY HABITS OF ALL ATHLETES

1. **STAY AWAY FROM DRUGS AND ALCOHOL**
   - They decrease muscle growth and cause a slower reaction time
   - Alcohol decrease coordination & balance while slowing circulation of oxygen to muscles & tissues
   - Smoking inhibits oxygen from getting to your muscles and replaces it with carbon-monoxide
   - Alcohol lowers testosterone levels & decreases the ability to absorb vitamins and minerals

2. **EAT MORE MEALS**
   - Breakfast is the most important meal of the day
   - Skipping breakfast leads to eating more calories throughout the day because of playing "catch-up"
   - Have protein in your breakfast (Scrambled eggs in the microwave)
   - Eat every 3 hours (3 healthy meals + 3 healthy snacks)
   - It is better to have a steady flow of nutrients and fuel than have big waves of nutrients a couple times a day
   - Immediately after your workout, eat a high protein meal with carbohydrates

3. **EAT AT LEAST 2 GRAMS OF PROTEIN FOR EVERY ONE POUND THAT YOU WEIGH**
   - This will increase weight and muscle mass
   - Protein is the building blocks of muscle
   - Eat more than 30 grams during each meal
   - The less legs that the animal has, the more lean it is

4. **EAT AT LEAST 2-4 GRAMS OF CARBS FOR EVERY ONE POUND THAT YOU WEIGH**
   - Carbohydrates will allow you to have intense, high energy workouts
   - Eat some simple carbohydrates before your workout & eat complex carbohydrates in your other meals

5. **SLEEP 7 – 9 HOURS EVERY NIGHT**
   - Your body heals and grows while it sleeps
   - Eat protein before you go to sleep to help with the healing process

6. **DRINK A LOT OF WATER**
   - Drink at least 8-10 glasses a day plus the water you lost through sweat
   - For a 200 pound person, they should drink 100-200 ounces per day
   - Your urine should be clear or light yellow at all times
   - Water flushes out waste and increases your metabolic rate
   - Water is needed for your body to process protein

7. **CUT BACK ON POP AND SPORTS DRINKS**
   - Sugar and carbonation will dehydrate you
   - Carbonation will decrease muscle mass, bone growth, and stamina
   - Having sugar on your teeth throughout the day will cause cavities
   - Stay away from high-caloric beverages that add very little nutritional value
   - Only use sports drinks before, during, or after INTENSE exercise

8. **EAT FRUITS AND VEGETABLES**
   - At least two servings of each every day
   - A balanced diet makes for a healthy body
   - Eat a variety of colors for the biggest benefit

9. **TAKE A MULTI-VITAMIN**
   - Will take care of the missing nutrients that are not obtained by your diet

10. **CONSISTENCY IN YOUR TRAINING AND DIET**
    - No diet or training regimen will work without consistency

NUTRITION OVERVIEW

Growing up most of you probably ate whatever you wanted. More than likely some of you still do. As young athletes your daily training and metabolism have kept you from storing fat and developing those side effects that are associated with a high body fat percentage. When your career is over and your activity level decreases you must be concerned with your long-term health. Do whatever you can that prolongs your career benefits for you and your family. Proper nutrition is a controllable factor that can enhance your performance and better your quality of life. To be successful at the highest level, you must be concerned with each of the essential nutrients, what your daily caloric needs are, your body composition, and other factors that affect nutrition. Choose to eat food that is the least processed as possible. The closer the food is to its natural state, the better it is for you.

Macronutrients & Micronutrients

There are six basic nutrients in the foods you eat. The six basic nutrients are divided up into two groups. Macronutrients are made up of Carbohydrates, Fats, Proteins, and Water. Micronutrients are made up of Vitamins and Minerals.

Carbohydrates are the primary fuel source utilized within the body. It includes sugars, starches, and fiber. Carbohydrates break down in the blood to form glucose. Glucose is the fuel utilized by the brain, muscles, and cellular reactions. Glucose is stored in the liver and muscles in the form of glycogen. Glucose and glycogen are what is used every time you resistance train. General guidelines are to keep 65% of your diet carbohydrates.

Fat is a source of energy that is utilized during low level, long duration exercise. It is an inefficient source of energy. It takes a long time to break fat down into a usable fuel. If your body cannot use fat as fuel, then it is stored as fat in the body. There are two types of fat: saturated and unsaturated. Saturated fats include animal fats, butter, margarine, cream, salad dressings, cheese, shortening, whole milk, fried foods, chocolate, and many pastries. Unsaturated fats are for lack of a better term "good" fats. Examples include corn oil, olive oil, and peanut oil. Some fat is essential for protection, buoyancy, and insulation. Too much fat leads to coronary artery disease, heart attacks, strokes, and premature death related to heart disease. General guidelines for fat intake are to keep 15% of your diet from fat, and 5% or less of that from saturated fats.

Protein main purpose is to rebuild and repair muscle tissue. It is broken down into amino acids for the muscles and other tissues to use. Protein is a poor source of energy. It is only used as energy when not enough carbohydrates are in your diet. Good sources of protein include lean meats, chicken, fish, and dairy products. General guidelines for protein intake are 20% of diet or 1.5 to 1.8 grams per kg (multiply by 2.2 for lbs.). Athletes commonly accept that increasing protein intake will increase one's muscle mass. It is not the intake of protein, but rather busting your butt in the weight room that creates a more efficient uptake and utilization of the protein consumed. Taking in excess protein will be converted to carbohydrate and burned as fuel, converted to fat, or excreted through urine.

Micronutrients (vitamins and minerals) are also not energy sources. They are catalysts that help regulate biochemical reactions within the body. Eating a well-balanced daily diet will ensure that all recommended daily allowances will be met. The use of a multi-vitamin serves more as a security blanket making sure you have met the day's need.

Body Composition

Body composition is the relationship of fat free mass to fat mass. That is what athletes need to be concerned with. Many times athletes let scale weight determine their level of conditioning. There is a lot of difference between an athlete weighing 225 pounds with 10% body fat and one weighing the same with 20% body fat. The difference is about 23 pounds of muscle. Think about how much force if used correctly 23 pounds can be. The pursuit of maintaining a desirable body composition is on-going. Proper nutrition and resistance training will improve your body composition.

Hydration

Hydration is the most important nutritional component of all. Proper hydration is responsible for many of the biochemical reactions that occur in the body. A decrease in mandatory hydration levels will lead to a decrease in performance and can lead to other more serious medical conditions. Refer to the Hydration section of your manual for proper hydration guidelines.

Supplements

The use of Ergogenic Aids to enhance performance is widespread amongst the athletic community. Athletes are always looking for a way to be better than their opponent. The National Collegiate Athletic Association (NCAA) has banned several performance enhancing substances so you should not get used to taking any substance that will be prohibited at the next level. As a future collegiate athlete you must make yourself aware of those substances and their potential side effects. Refer to the MLB and NCAA list of banned substances, potential side effects, and guidelines for supplement use.

1. **NCAA List of Banned Substances**
2. **World Ant-Doping Code**
3. **MLB List of Banned Substances**

Fast Food

Fast food is a popular part of American cuisine. The problem of fast food chains is that they just want the food to taste good for that minute. That means deep-frying fries, adding mayonnaise to hamburgers/chicken, and salt to just about everything. These are the types of things that appeal to our taste buds. Unfortunately these are the same things that are loaded with saturated fats and cholesterol. Fortunately the fast food chain community is starting to cater to those health conscious individuals. To maintain a healthy body composition and over all good health choose those food items that are low in fat and high in nutritional value. Fast food calorie and nutrition guides are available on all restaurants web-sites so you can make yourself aware of possible healthy selections.

SUMMARY

The six nutrients must be met each day to keep balance or homeostasis within the body. Having a yo-yo-eating pattern causes imbalance and the body is constantly playing catch-up. I have included examples of balanced daily meal plan based on the above percentage guidelines and following the Food Guide Pyramid. Each plan lists food groups rather than specific food to allow for variety. Knowing what the essential nutrients are, following suggested balanced diets, having a good body composition, and following guidelines for the other nutritional factors will help increase the chance of a longer career as an exceptional athlete.

Supplements

Elite athletes are always looking for an edge over their opponent. Often they turn to ergogenic aids (performance enhancement supplements/drugs) and other forms of supplementation for that little edge they are looking for over their opponents. The supplement industry is a multi-million dollar business for that reason. Elite athletes must be concerned with NCAA policy and MLB policy because that is the standard that you will have to follow. You should also consider the potential health risks, and guidelines for supplement use.

The NCAA & Supplementation

The passage of The Dietary Supplement and Health Education Act of 1994 has put athletes at a huge disadvantage. According to this legislation dietary supplements are no longer classified as a food, thus not regulated by the United States Food and Drug Administration (FDA). Consequently, dietary supplement manufacturers are no longer required to prove product efficacy and/or safety. In layman terms, it means they can say whatever they want about a product and put whatever they want in it. The maximum penalty, if they get caught, for lying to or misleading consumers, is mail fraud. If you ask the supplement industry, the passage was a Godsend. It made available many products that were considered drugs and were only available by prescription before 1994.

Some examples of these products are DHEA, Melatonin, and Androstenedione. The NCAA now has banned all of those supplements. A complete list of banned substances has been included to assist you in proper supplement selection if you choose to do so. It is a buyers-beware market when it comes to supplementation. Every time you buy a supplement you risk the chance that one of the ingredients is found on the leagues prohibited substance list. Remember, you don't know what is exactly in those supplements. Penalties can range from fines and suspension to being banned from a sport you love. As elite athletes you must be cognizant of the rules you must follow.

Potential Health Risk

The potential health risks are as countless as are the number of different kinds of supplements. Each different supplement has their own potential side effect(s) that corresponds. An example of some side effects in common supplements are:

- Thermogenic supplementation (Ephedrine, Caffeine, Aspirin, etc.) can lead to heart palpation's, heart attacks, strokes, and psychosis.
- Gamma-hydroxybutyrate (GHB) can cause seizures, comas, respiratory arrest, and death especially when used with alcohol.
- Creatine can lead to muscle cramping, muscle strains, and dehydration.
- Energy drinks speed up the heart-rate and dehydrate you. Even though they give you a chemical boost in energy, you will have a greater crash later.

For athletes, most of the side effects are overkill. With proper nutrition and regular exercise most likely they will not to occur. That is not to say that there won't be any side effects. The conflict comes from the fact that we all know that supplements improve athletic gains but the side effects and the potential loss of playing time has to be weighed. With little research done on potential side effects, and most concentrated on potential performance enhancement capabilities, those who elect to take the risk are submitting themselves as human guinea pigs.

Guidelines for Supplement Use

Most of you have taken supplements at one point or another. Maybe your high school even offered them to you. The objective of this memorandum is not to stop your supplementation, but rather ensure you are following mandated guidelines. When using dietary supplements you must follow a few guidelines which are:

1. Make sure none of the ingredients listed on the dietary supplement are banned by the NCAA.
2. Do research on the product as to its potential side effects.
3. Follow the recommended dosage as listed by the dietary supplement manufacturer.
4. The adage "more is better" is false. Taking in more of a supplement does not magnify its effect. What it essentially does is make your kidneys and liver work harder and excrete the excess as very expensive urine.
5. Increase your water intake. Most protein supplements cause excess build-up of urea which takes water from muscles to make urine. Refer to the hydration section to follow proper hydration guidelines.
6. Increase you fiber intake. Increased fiber intake regulates your system lessening the time toxins spend in your body decreasing the risk of colon cancer.
7. Don't use a dietary supplement in place of food. Remember that Whey Protein is just the liquid that is left over after cheese is made. The definition of the word supplement is an addition to, a sequel, an extension. The definition is not in place of. Dietary supplements are not more effective than the food you eat. Most are simply a derivative of food.

Therefore before considering taking a supplement, first analyze your nutritional habits. The following is a self-test you should give yourself before taking a dietary supplement. Can You Pass The Test? Before taking any supplement, ask yourself the following questions:

1. Do you eat something for breakfast seven days a week?
2. Do you eat at least three meals a day?
3. Do you eat at least 3 snacks a day?
3. Do you monitor the number of calories you consume?
4. Do you restrict your intake of fat cal. to 25% of your diet?
5. Do you stay away from empty calories? (soda, Kool-Aid, Gatorade when not competing)
6. Do 60% of your calories come from carbohydrates?
7. Do you eat from all food groups?
8. Do you eat three to five servings and a variety of fruit each day?
9. Am I eating fruit instead of drinking fruit juice?
10. Do you eat at least three servings and a variety of vegetables each day?
11. Do you consume a well-balanced pre-game and post-game meal?
12. Do you drink two quarts of water a day – above and beyond what you perspire?

If you cannot answer yes to each of the questions listed above, why take a supplement? Don't expect supplements to replace the need for a daily balanced diet. Refer to the corresponding nutrition plan based on your weight as a sample of a daily balanced diet. If you choose to use a supplement, be responsible!!

Hydration

Biochemical Reactions That Require Water

1. Providing life and shape to every cell
2. Splitting molecules
3. Storing and delivery of fuel to muscles
4. Lubrication and cushioning of joints
5. Shock absorption for the spine and the brain
6. Aiding in muscle contraction and tone
7. Aiding in metabolism and digestion
8. Brain function
9. Regulating temperature and release of heat through sweat
10. Transporting glucose and metabolic byproducts in the blood
11. Excretion of metabolic waste products through urine

Without adequate water consumption, these processes can be inhibited and lead to a decrease in performance. Water should be consumed before competition and sports drinks should be used during competition.

Medical Conditions

Dehydration is defined in the Webster dictionary as to deprive of or lose water. Exercise in the heat or the cold results in water/weight loss. It has been stated that a 3 % weight loss leads to impaired performance and brain function; a 5% loss can result in some signs of heat exhaustion; a 7 % loss may produce hallucinations and put the individual in the danger zone for a possible heat stroke. Proper hydration will eliminate the risk of dehydration, heat exhaustion, or a heat stroke.

Guidelines

Thirst and dehydration do not correspond to one another. Being thirsty is often the response of already being dehydrated. Recommended daily intake of water without exercise is to take in a minimum of eight 8-ounce glasses of water a day. For athletes, this is not enough water to stay hydrated and perform at peak performance.

There are two common approaches to monitoring hydration levels: Weight and Urine. First, most athletes lose between one and three pounds of fluid from sweat per hour. To properly monitor weight loss, you should weigh yourself before and after practice/workouts. For every pound of weight you lost, it should be replaced by two cups of water or sports drink (ex. Gatorade). This doesn't mean the consumption is post practice/workout. You must start the process before, during, and after the practice/ workout. Continue to drink water or a sports drink regularly until the weight has been gained. Another way to monitor hydration levels is the color or quantity of urine. Proper hydration is usually associated with clear urine with reasonable amount of volume. Although monitoring urine can be an accurate method of monitoring hydration in a laboratory it is less efficient for our purposes and should be used a secondary means. There are several factors that can cause a lack of clarity or volume that are unassociated with hydration. An example would be the use of dietary supplements; they tend to produce dark urine.

Through your years on the field, at some point you have probably come across an athlete that has suffered from either severe dehydration or heat exhaustion. Those athletes did not suffer from those conditions because they were not in shape or not good enough athletes, but rather a lack of proper hydration. It is your responsibility to yourself to keep yourself properly hydrated so that it doesn't happen to you. The above guideline will assist you in monitoring your hydration levels.

Timing

Timing is everything in the world of nutrition. Use these simple rules for eating to prepare for a workout and for recovery:

1. Right before the workout & during the workout, eat something that has simple carbohydrates or drink something (ex: Gatorade) that will allow you to get sugar in your system quickly.

2. The 45 minutes after you finish your workout is the most important time to aid recovery. You should eat carbohydrates and protein in the ratio of 3.5 grams of carbohydrates for every 1 gram of protein.

3. For the rest of the night, your meals should be high on protein and lower the amount of carbohydrates that are consumed.

Recovering Athlete Nutrient Profile

Phase	Objective	Nutrient/Amount		Food Options
Energy Phase 10 min prior to and during a workout	Increase nutrient delivery to muscles and spare muscle glycogen and protein	High-Glycemic carbohydrates (glucose, sucrose, maltodextrin)	20-26 g	Gatorade, Powerade, Honey, Most Cereals, Fruit
	Limit immune system suppression	Whey protein	5-6 g	Protein Shake. Dairy Products. Peanut Butter, Meats, Nuts
	Minimize muscle damage	Leucine	1 g	Found in protein sources
	Set the nutritional stage for a faster recovery following a workout	Sodium	100-250 mg	Cheese, Pretzels
Anabolic Phase Within 45 min after a workout	Shift metabolic machinery from a catabolic state to an anabolic state	Whey protein	15-18 g	Protein Shake, Chocolate Milk, Peanut Butter, Meats, Nuts
	Speed the elimination of metabolic wastes by increasing muscle blood flow	High-Glycemic carbohydrates	60-70 g	Gatorade, Powerade, Honey, Most Cereals, Fruit
	Replenish muscle glycogen stores			
	Initiate tissue repair and set the stage for muscle growth	Leucine	1-2 g	Found in protein sources
	Reduce muscle damage and bolster the immune system	Glutamine	1-2 g	Most fruits and vegetables Broccoli, Oranges, Strawberries
Growth Phase I Rapid Segment The first 4 hours after a workout	Maintain increased insulin sensitivity	Whey protein	14 g	Protein Shake, Dairy Products, Peanut Butter, Meats, Nuts
		Casein	2 g	Protein Shake, Dairy Products Peanut Butter, Nuts
	Maintain the anabolic state	Low-Glycemic carbohydrates	42 g	Pasta, Wheat Bread, Potatoes Oatmeal, Fruit, Vegetables
Growth Phase II Sustained Segment The next 16-18 hours after a workout	Maintain positive nitrogen balance and stimulate protein synthesis	Protein		Protein Shake, Dairy Products, Peanut Butter, Meats, Nuts
	Promote protein turnover and muscle development	Low-Glycemic carbohydrates		Pasta. Wheat Bread. Potatoes Oatmeal, Fruit, Vegetables

Example Meal-Plan Timing For Game-Days

Refer to the charts and information on pages 8-10.

NOON GAME

TIME	EAT
7 am	Breakfast
10 am	Energy Phase Meal
3 pm	Growth Phase I Snack
6 pm	Growth Phase II Meal
9 pm	Growth Phase II Snack

AFTERNOON GAME (3 pm Example)

TIME	EAT
8 am	Breakfast
10 am	Energy Phase Snack
12 pm	Energy Phase Meal
2 pm	Energy Phase Snack
5 pm	Anabolic Phase Snack
6 pm	Growth Phase I Meal
9 pm	Growth Phase II Snack

NIGHT GAME (6 pm Example)

TIME	EAT
8 am	Breakfast
10 am	Energy Phase Snack
12 pm	Energy Phase Meal
2 pm	Energy Phase I Snack
4 pm	Energy Phase Meal
8 pm	Anabolic Phase I Snack

MORNING/AFTERNOON DOUBLE HEADER (10 am/2 pm Example)

TIME	EAT
7 am	Breakfast
9:30 am	Energy Phase Snack
12 pm	Anabolic Phase Meal
1:30 pm	Energy Phase Snack
4 pm	Anabolic Phase Snack

MORNING/EVENING DOUBLE HEADER (10 am/6 pm Example)

TIME	EAT
7 am	Breakfast
9:30 am	Energy Phase Snack
12 pm	Anabolic Phase Meal
2 pm	Energy Phase Snack
4 pm	Energy Phase Meal
6:30 pm	Anabolic Phase Meal
9 pm	Growth Phase I Snack

AFTERNOON/EVENING DOUBLE HEADER (2 pm/6 pm Example)

TIME	EAT
8 am	Breakfast
10 am	Energy Phase Snack
12 pm	Energy Phase Meal
1:30 pm	Energy Phase Snack
4 pm	Anabolic Phase Meal
9 pm	Growth Phase I Meal

Calories

A pound is equal to 3500 calories. To gain a pound per week, you would need to increase your caloric intake by 500 calories per day.

To decide how many calories you will need to eat in a day to maintain your current weight, use the Body Metabolic Rate Calculator:

BMR = 66 + (6.23*Weight in pounds) + (12.7*Height in inches) – (6.8*Age)

If you are doing 6-7 days of hard exercise, you would also need to multiply your BMR by 1.725. Remember, that number is only the caloric intake needed to maintain weight. If you would like to gain or lose weight, adjust your caloric intake appropriately.

Food Groups Chart

PROTEIN	COMPLEX CARBS	SIMPLE CARBS	FIBROUS CARBS	UNSATURATED FATS
Black Beans	Black Beans	Apples	Asparagus	Flaxseed (& Oil)
Chicken	Brown Rice	Bananas	Broccoli	Nuts
Egg Whites	Grape Nuts	Berries	Cabbage	Olive Oil
Fish	Oatmeal	Dates	Cauliflower	Organic Peanut-Butter
Non-Fat Yogurt	Sweet Potato/Yams	Grapefruit	Corn	Seeds
Organic Peanut-Butter	Wheat Bread	Grapes	Green Beans	Avocado
Skim Milk	Whole-Wheat Crackers	Honey	Lettuce	
Steak	Whole-Wheat Pasta	Raisins/Craisins	Tomato	

Serving Chart

GENERAL GUIDELINES FOR SERVING SIZE

a) Carbohydrates should be the size of your fist
b) Protein should be the size of your palm
c) Fats should be the size of your thumb print
d) 3-4 ounces of meat is about the thickness of a deck of playing cards
e) Medium size piece of fruit is the size of a tennis ball
f) 1 ounce of cheese is about the size of four stacked dice
g) 1 ounce of nuts should fit in the palm of your hand

FUNCTIONS OF DIFFERENT COLORED FRUITS & VEGETABLES

a) Yellow: Optimizes brain functions
b) Green: Rejuvenates musculature and bone
c) Orange: Supports skins and mucosal tissues
d) Red: Supports heart and circulatory
e) White: Enhances immune system, lymph system, and cellular recovery
f) Purple: Promotes microcirculation

FOOD GROUP	SERVING SIZE
Bagel & English Muffin	½ each
Black Beans	½ cup
Bread, Roll, & Muffin	1 each
Butter, Margarine, & Salad	1 tsp

Dressing	
Cereals & Popcorn	¾ cup
Crackers	6 crackers
Cream Cheese & Sour Cream	1 tsp
Egg	1 egg
Fat Free Condiments	2 tsp
Fruit	1 piece
Fruit Juice	¾ cup
Milk	1 cup
Organic Peanut-Butter	1 tbsp
Pasta, Rice, & Potato	½ cup
Peanuts	20 each
Vegetable	¾ cup

Example Meal-Plan Breakdown

BREAKFAST (46 grams of protein)
Mult-vitamin
4 Scrambled Eggs with cheese (30 grams of protein)
2 servings milk (16 grams of protein)
2 servings fruit

2 servings starch/bread/cereals
2 servings fat

MID-MORNING SNACK (32 grams of protein)
Protein Shake (Muscle Milk or Whey Protein)
2 servings starch/bread/cereals
1 serving fruit

LUNCH (68 grams of protein)
Meat (60 grams of protein)
1 serving milk
2 servings vegetables
2 servings fruit
3 servings starch/bread/cereals

PRE-WORKOUT SNACK (12 grams of protein)
Peanut-butter and Jelly sandwich (12 grams of protein)
1 serving fruit

IMMEDIATE POST-WORKOUT SNACK (44 grams of protein)
Protein Shake (Muscle Milk or Whey Protein)
Peanut-butter and Jelly sandwich (12 grams of protein)

DINNER (60 grams of protein)
Meat (60 grams of protein)
1 serving milk
3 servings vegetables
2 servings fruit
3 servings starch/bread/cereals
1 serving fat

EVENING SNACK (40 grams of protein)
Meat (40 grams of protein)
1 serving milk
2 servings starch/bread/cereals

*** Meal Plan Provides Approximately 3500-4000 Calories and is set up for a player who weighs around 180 pounds and is looking to gain muscle. Adjust serving sizes for more or less calories.**

SLEEP & RECOVERY

The human body is rejuvenated and heals during rest. High school students need 7-9 hours of sleep every day in order to be able to perform at their maximum ability. Lack of sleep causes issues with concentration, work capacity, and to the use of drugs and alcohol. To better understand the important role of sleep, please click on this video and this video. You can also click here to read about a study that connects sleep to improved speed and agility times.