



SPORTS NUTRITION & PERFORMANCE

EAT & TRAIN TO WIN

St Luke's
UNIVERSITY HEALTH NETWORK

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St. Luke's Fitness & Sports Performance

Sports Performance Fitness



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PROPER NUTRITION

1. Importance for athletic performance clearly documented.
2. High level of training needs energy intake that equals high energy expenditures.
3. Depending upon needs of athlete—energy intake may be 3 – 4 fold greater than RDA for average individual.
4. Athlete needs to consume appropriate amounts macronutrients, micronutrients and water.

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BALANCED NUTRITIONAL PLAN

1. **BALANCE - TWO AREAS TO CONSIDER**
 - A. Balance Between Calories You Eat & The Calories You Expend.
 - B. Balance Your Intake Of The Energy Nutrients.
 - 60% Carbohydrates -> 4 kcal/gm
 - 20% Protein -> 4 kcal/gm
 - 20% Fat -> 9 kcal/gm



BALANCED NUTRITIONAL PLAN

2. VARIETY

A. Each Food Group Supplies Particular Nutrients.

1. Milk Products furnish protein & calcium.
2. Meats provide iron, zinc & protein.
3. Grains are rich in carbohydrates & B vitamins.
4. Fruits and Vegetables contain vitamins A & C, beta carotene, and a number of trace minerals.



BALANCED NUTRITIONAL PLAN

3. MODERATION

A. Most Athletes Will Over Consume Rather Than Under Consume Calories.

B. Foods Eaten Can Be Too High In Fat, Cholesterol & Sodium.

C. Utilization Of A Food Guide Pyramid.

4. FOOD GUIDE PYRAMID

A. Breads, Cereals, Rice & Pasta -> 6 - 11 Servings.

B. Fruits & Vegetables -> Fruits (2 - 4) & Vegetables (3 - 5) Servings.

C. Dairy & Meats -> Dairy (2 - 3) & Meat (2 - 3) Servings.

D. Fats, Sweets & Oils -> Sparingly.



BALANCED NUTRITIONAL PLAN

5. SNACKS

A. Think Of Snacks As Mini-Meals That Provide Foods From At Least Two Food Groups.

B. Spread Your Snacks Out Throughout The Day (Avoid Concentrating All Snacks To The Evening).

C. Use Snacks To Fill The Nutritional Gaps In Your Diet.

D. Be Aware Snacks On Top Of Your Usual Diet May Result In Weight Gain.

E. Watch Your Portion Size - Many Snacks Are Easy To Overeat.



MEAL PLAN = Male Athlete = 180 LBS = 82 KG

1. SEDENTARY – Athlete Recovering From Injury
Caloric Need = 31 KCAL/KG = 2,542 KCAL

2. MODERATE – Baseball, Golf, Recreational Tennis
Caloric Need = 38 KCAL/KG = 3,116 KCAL

3. HEAVY – Soccer, Lacrosse
Caloric Need = 41 KCAL/KG = 3,362 KCAL

4. RIGOROUS – Basketball, Football, Wrestling
Caloric Need = 45 KCAL/KG = 3,690 KCAL

5. EXTREMELY RIGOROUS – Cross Country Runner, Distance Runner
Caloric Need = 60 KCAL/KG = 4,920 KCAL



MEAL PLAN = Female Athlete = 130 LBS = 59 KG

1. **SEDENTARY** – Athlete Recovering From Injury
Caloric Need = 30 KCAL/KG = 1,770 KCAL
2. **MODERATE** – Softball, Golf, Recreational Tennis
Caloric Need = 35 KCAL/KG = 2,065 KCAL
3. **HEAVY** – Soccer, Lacrosse
Caloric Need = 37 KCAL/KG = 2,183 KCAL
4. **RIGOROUS** – Basketball, Field Hockey
Caloric Need = 39 KCAL/KG = 2,301 KCAL
5. **EXTREMELY RIGOROUS** – Cross Country Runner, Distance Runner
Caloric Need = 50 KCAL/KG = 2,950 KCAL



MEAL PLAN

1. CARBOHYDRATES

- A. Best Fuel For Athletes Because They Take Less Oxygen To Burn Than Protein Or Fat.
- B. 60% - 70% Of Calories
- C. 3 - 5 GMS/ LB of Body Weight



MEAL PLAN

2. **PROTEIN**
 - A. Involved In Growth, Maintenance, And Repair Of Body Tissues.
 - B. Wasteful As Fuel Because It Needs Be Converted To Carbohydrate Or Fat.
 - C. 15% - 20% Of Calories
 - D. 0.6 - 0.8 GMS/ LB of Body Weight



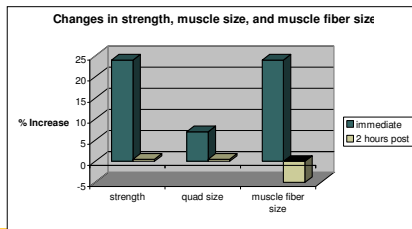
How Much Protein?

- RDA 0.8g·kg⁻¹ body mass average individual
- Strength/power athletes demonstrated need for higher protein intakes
 - 1.6 – 2.0g·kg⁻¹ body mass
- Endurance athletes
 - 1.2 – 1.4g·kg⁻¹ body mass

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Timing of Protein Intake: How Important?

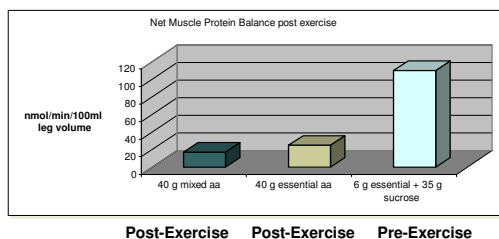


Protein Timing: Is There a Window of Opportunity?

- Must take advantage of the effects of exercise itself: the role of pre/post-exercise nutrition
- Is there an **ANABOLIC WINDOW**?
 - Pre-exercise
 - Immediately post-exercise



Nutrient Timing: Combination of Protein and Carbohydrate



Nutrient Timing: Protein /Carbohydrate Consumption

- Stimulate insulin secretion to drive amino acids into cells.
- Consuming a combined CHO and EAA drink **BEFORE** training can promote muscle protein gain.
- **AFTER** training can also promote muscle protein gain, however to a lesser degree

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MEAL PLAN

3. FAT

A. Makes Skin & Body Oils, Regulates Body By Forming Hormones, Insulates & Pads Internal Organs, Carries Fat Soluble Vitamins Throughout The Body, Helps Repair Damaged Tissue & Fight Infection, & Provides Source Of Energy.

B. 15% - 20% Of Calories



MEAL PLAN

4. FLUIDS & ELECTROLYTES

A. Water Performs The Following Roles

1. Cleans Your Body By Flushing Toxins.
2. Lubricates Your Joints.
3. Keeps Your Skin From Drying Out.
4. Keeps Your Internal Organs Hydrated.
5. Controls Your Body Temperature.

B. 8 Cups (8 Ounces) Of Water + 1/2 Cup For Every 15 Minutes Of Exercise.

**C. Before Exercise -> 8 - 16 Ounces Two Hours Before Exercise
8 Ounces Before Exercise**

During Exercise -> 4 Ounces For Every 15 Minutes Of Exercise

After Exercise -> 24 Ounces For Every LB Lost During Exercise.



SHOULD SPORTS SUPPLEMENTS BE USED?

1. **ADA RECOMMENDS FOLLOWING SITUATIONS**
 - A. Lactate Deficiency.
 - B. Vegetarian Diets.
 - C. Vitamin or Mineral Deficiency.
2. **RECOGNITION OF DIETARY SPECIAL NEEDS - NUTRITIONAL CHECK-UP**
 - A. Current eating habits.
 - B. Recognize what is being done well.
 - C. Pinpoint ways to improve.
 - D. Identify need for supplements.



SHOULD SPORTS SUPPLEMENTS BE USED?

3. **CONCERNS**
 - A. Toxic Effects.
 - B. Imbalances.
 - C. Legal Implications.
 - D. Ethical Implications.
4. **BEFORE USING ASK THE FOLLOWING:**
 - A. Legal?
 - B. Safe?
 - C. Effective?
 - D. Necessary?



NUTRITIONAL NEEDS DURING TRAINING PERIODS

1. **SPRINTING/SPEED WORK**
 - A. Calories
 - B. Carbohydrates
 - C. B Vitamins
 - D. Fluids & Electrolytes
2. **ENDURANCE EXERCISE**
 - A. Calories
 - B. Carbohydrates
 - C. Protein
 - D. Fluids & Electrolytes
 - E. B Vitamins
 - F. Iron



NUTRITIONAL NEEDS DURING TRAINING PERIODS

3. **INTENSE TRAINING (Two-A-Day or 1 Intense Workout)**
 - A. Calories
 - B. Carbohydrates
 - C. Protein
 - D. B Vitamins
 - E. Fluids & Electrolytes
4. **INJURY REHABILITATION**
 - A. Protein
 - B. Calories
 - C. Zinc
 - D. Vitamins A & C
 - E. Iron (if blood loss)



NUTRITIONAL NEEDS DURING TRAINING PERIODS

5. **MUSCLE-BUILDING EXERCISE**
 - A. Protein
 - B. Calories
 - C. Carbohydrates



BODY COMPOSITION

1. **RECOMMENDED BODY COMPOSITION LEVELS – BODYFAT**
 - A. Baseball – 11% - 17%
 - B. Softball – 13% - 19%
 - C. Football – 9% (Skill) – 18% (Lineman)
 - D. Women's Soccer – 13% - 19%
 - E. Wrestling – 9% - 16%
 - F. Women's Swimming – 20% - 30%
2. **LOSING WEIGHT IS NOT ALWAYS BEST**
 - A. Not Always a Factor in Improving Athletic Performance.
 - B. Many Sports Nutritionists Feel Body Weight Is Too Closely Scrutinized In the Athletic Performance Equation.
 - C. Athletes Should Strive To Be At Optimal Body Composition & Not A Minimal Weight.



BODY COMPOSITION

3. NUTRIENT NEEDS FOR ENHANCING MUSCLE TISSUE
 - A. Calories
Men -> 14 – 27 Calories/LB; Women -> 13.5 - 23 Calories/LB
 - B. Protein
0.6 - 0.8 Grams/LB
 - C. Carbohydrates
4.0 Grams/LB - 4.5 Grams/LB (Cross Training)
 - D. Fat
16% - 20 % Of Calories
 - E. Fluids
1 Quart Per 1,000 Calories



IRON REQUIREMENTS

1. FUNCTIONS
 - A. Forms Red Blood Cells Which Carry Oxygen Throughout The Body.
 1. A large drop in iron stores is called *Iron Deficiency Anemia*.
 2. Iron Deficiency Anemia will cause athletes to get winded from even small amounts of exercise and limit your ability to perform intense exercise.
 - B. Assist In Turning Food Into Energy.
 - C. Help To Fight Infection.
2. IRON IS NOT VERY ABUNDANT
 - A. Every 1,000 Calories Contain 6 mg of iron.
 1. Women need 15 mg/day.
 2. Men need 10 mg/day.



IRON REQUIREMENTS

3. IRON ABSORPTION
 - A. 25% - 35% Of Iron Found In Meat Is Absorbed.
 - B. 2% - 20% Of Iron Found In Vegetables Is Absorbed.



CALCIUM

1. FUNCTION
 - A. Helps Make The Bones Strong To Withstand The Stress Of Exercise.
 - B. Bones Adapt To Exercise By Depositing More Calcium And Becoming More Dense In The Areas Of Stress.
2. CALCIUM REQUIREMENTS FOR MEN & WOMEN
 - A. 1200 mg/day (3 Milk Products/Day)



WEIGHT & BODY COMP CHALLENGES

1. **WRESTLING**
 - A. Weight Must Be Certified
 - B. Higher Power-To-Weight Ratio Is Important
 - C. In Lighter Weights, Relatively Low Bodyfat Is Beneficial
2. **WOMEN'S GYMNASTICS, CHEERLEADING**
 - A. Weight & Body Comp Affects Scoring
 - B. Attempts At Low Weight May Put Athletes At Risk For ED's
3. **SWIMMING SPRINTER'S, TRACK SPRINTERS**
 - A. High Power-To-Weight Ratio Is Desirable
 - B. Muscularity Is Needed For Explosive Power
 - C. Low Bodyfat Is Beneficial



WEIGHT & BODY COMP CHALLENGES

4. **BASEBALL, BASKETBALL, FOOTBALL, SOCCER, TENNIS, FIELD HOCKEY, LACROSSE, VOLLEYBALL**
 - A. Desirable Body Weight & Comp Vary Depending On The Sport & Position Played
 - B. High Muscularity & Relatively Low Percent Fat Are Desirable If Large Spaces Are Required To Cover
5. **MIDDLE DISTANCE SWIMMER, MIDDLE DISTANCE RUNNER**
 - A. Weight And Body Comp Are Determined By Optimal Power-To-Weight Ratio
 - B. As Distance Increases Emphasis Changes From High Muscularity To Lower Body Weight & Bodyfat



WEIGHT & BODY COMP CHALLENGES

6. **DISTANCE RUNNING, DISTANCE SWIMMING**
 - A. Weight & Body Comp Are Determined By Optimal Power-To-Weight Ratio
 - B. Relatively Low Body Weight & Low Percent Bodyfat Is Advantageous
 - C. Extremely Low Weight Or Percent Fat Is Detrimental
7. **GOLF, SOFTBALL**
 - A. Strength Is Important
 - B. Percent Bodyfat Is Generally Of Lesser Importance Unless Running Speed Is Needed
 - C. Golfers Need Some Endurance For Walking Course



BASEBALL & SOFTBALL

Position Characteristics	Performance Characteristics	Body Composition Goals
Infielder Hit For Contact	Lateral Speed & Agility Base Running Speed	Increase Muscle For Strength Decrease Excess Bodyfat
Infielder Hit For Power	Lateral Speed & Agility Power Hitting	Increase Muscle For Power Decrease Excess Bodyfat
Outfielder Hit For Contact	Short Sprint & Base Running Speed	Increase Muscle Decrease Excess Bodyfat
Outfielder Hit For Power	Short Sprint Speed Power Hitting	Increase Muscle To Improve Power
Catcher Hit For Power	Explosive Power To Stand From Squat	Increase Muscle For Power Avoid Excess Fat
Pitcher	Arm Strength Stamina	Bodyfat Less Important Than Position Players



BASKETBALL

Position Characteristics	Performance Characteristics	Body Composition Goals
Point Guard: Quick Reflexes & Speed	Speed, Agility & Anaerobic Endurance	Increase Muscle For Strength Decrease Excess Bodyfat
Shooting Guard: Court Speed, Size & Strength	Speed, Mobility, Strength, Anaerobic Endurance	Increase Muscle For Strength Decrease Excess Bodyfat
Small Forward: Quick Reflexes & Speed	Speed, Agility, Anaerobic Endurance	Increase Muscle For Strength Decrease Excess Bodyfat
Power Forward: Height, Size, Strength, Mobility	Strength, Speed, Mobility, Anaerobic Endurance	Increase Muscle For Size & Strength, Decrease Excess Bodyfat
Center: Height And Size But Less Mobility	Strength Anaerobic Endurance	Increase Muscle For Strength Excess Fat Will Decrease Mobility & Speed



FIELD HOCKEY & LACROSSE

Position Characteristics	Performance Characteristics	Body Composition Goals
Attacker: Goal Scorer	Speed, Anaerobic Endurance, Quick Reflexes	Increase Muscle For Strength Decrease Bodyfat
Midfielder: Gains & Possesses Ball, Covers Entire Field	Speed, Anaerobic Endurance, Strength	Increase Muscle For Strength & Size, Decrease Bodyfat For Speed & Conditioning
Defender: Prevents Goals From Being Scored	Sprint Speed, Strength	Increase Speed & Strength Excess Bodyfat Will Decrease Speed, Endurance, Mobility
Goal Keeper: Reacts Quickly To Prevent Scoring, Covers Small Area	Strength, Quick Reflexes, Larger Body	Increase Speed & Strength Excess Bodyfat Decreases Mobility



FOOTBALL

Position Characteristics	Performance Characteristics	Body Composition Goals
Offensive & Defensive Linemen: Large Body Build	Strength, Power Big & Strong	Increase Muscle For Strength Some Excess Bodyfat Is OK
Running Back: Compact Muscular Build	Explosive Power & Speed Strength, Agility, Endurance	Increase Muscle For Size, Explosive Power & Strength
Receiver & Defensive Back: Lean & Muscular Build	Sufficient Speed, Strength Jumping Ability, Mobility	Increase Speed & Strength Excess Bodyfat Decreases Mobility & Jumping Ability
Linebacker & Tight End: Large Muscular Build	Sufficient Speed, Strength Agility, Mobility	Increase Speed & Strength Excess Bodyfat Decreases Mobility & Agility
Quarterback: Arm Strength	Sufficient Speed, Strength Mobility	Increase Muscle For Strength Decrease Bodyfat For Speed



SOCCER

Position Characteristics	Performance Characteristics	Body Composition Goals
Forward: Playmaker & Goal Scorer	Speed, Height, Endurance,	Increase Muscle For Strength Decrease Bodyfat For Speed
Midfielder: Ball Control & Accurate Passing	Speed, Anaerobic Endurance, Strength	Increase Muscle For Strength & Size, Decrease Bodyfat For Speed & Conditioning
Defender: Prevents Goals From Being Scored	Speed, Strength, Endurance	Increase Speed & Strength Excess Bodyfat Will Decrease Speed, Endurance, Mobility
Goal Keeper: Reacts Quickly To Prevent Scoring	Strength, Height Quick Reflexes, Agility, Jumping Ability	Increase Muscle For Size & Strength Excess Bodyfat Decreases Mobility



SWIMMING		
Position Characteristics	Performance Characteristics	Body Composition Goals
Sprint: 50 & 100 Meters	Strength, Power Sprint Speed	Increase Muscle For Strength Decrease Bodyfat
Middle Distance: 200 & 400 Meters	Sprint Speed, Some Endurance	Increase Muscle Decrease Excess Bodyfat
Distance: 800 & 1500 Meters	Endurance	Excess Muscle Or Fat Will Decrease Speed
Long Distance: Greater Than 1500 Meters	Endurance	Excess Muscle Or Fat Will Decrease Speed
Open Water Distance: Open Water Swims	Ultraendurance	Increase Muscle Higher Bodyfat May Help



WRESTLING		
Position Characteristics	Performance Characteristics	Body Composition Goals
Light Weight Wrestlers	Strength, Explosive Power, Endurance, Balance, Flexibility, Quickness	Increase Muscle For Strength And Power, Decrease Bodyfat
Middle Weight Wrestlers	Strength, Explosive Power, Endurance, Balance, Flexibility, Quickness	Increase Muscle Decrease Excess Bodyfat To Increase Power-To-Weight Ratio
Heavy Weight Wrestlers	Strength, Explosive Power, Endurance, Balance, Flexibility, Quickness	Increase Muscle For Strength And Power, Avoid Gaining Excess Bodyfat



PRE-COMPETITION MEAL

There is nothing you can eat the day before an event to compensate for poor eating habits during training.

Just as it takes you months to get in top physical condition, it also takes you months to get into top nutritional condition.

Eating Well Throughout Training:

- A. Enables athletes to train harder.
- B. Develop muscles.
- C. Build up to build up the energy stores you need to perform your best during competition.

Your pre-competition meal is the final touch to your training diet, not the "magic pill" to make you a super athlete.

No one approach is best for everyone when it comes to a pre-competition meal.



PRE-COMPETITION MEAL

Experiment during off-season and preseason to find the best schedule and type of meal that is best.

The timing of your pre-competition meal depends on the size of the meal and when in the day you will be competing.

Protein and fat are digested more slowly, so meals containing protein and fat need to be eaten earlier than high carbohydrate meals.

Large meals take a longer time to digest than small meals and liquid meals are digested quicker.

Hydration is critical to optimal performance. All preparatory meals should include a lot of beverages - Juice, Water, Sport Drinks.



PRE-COMPETITION MEAL

Eat a hearty meal that is high in carbohydrates the night before.

Eat a high carbohydrate bedtime snack.

Plan to get up early enough to eat a light breakfast or snack.

PRE-EVENT MEAL PLANNING

Meal Should Be Finished If The Meal Is

- | | |
|-----------------------------------|---|
| A. 3.5 to 4 Hours Before Exercise | -> Meal can be 25% Fat |
| B. 3.5 to 4 Hours Before Exercise | -> Relatively Large > 500 Calories |
| C. 2 to 3 Hours Before Exercise | -> Low in Fat (< 25% Fat) High in Carbs |
| D. 1 to 2 Hours Before Exercise | -> Blenderized or Liquid |
| E. >1 Hour Before Exercise | -> Light Carbohydrate Snack, as tolerated |



PRE-COMPETITION MEAL

MORNING EVENT

1. Eat a hearty meal that is high in carbohydrates the night before.

2. Eat a high carbohydrate bedtime snack.

3. Plan to get up early enough to eat a light breakfast or snack.

4. PRE-EVENT MEAL PLANNING

Meal Should Be Finished

If The Meal Is

- | | |
|-----------------------------------|---|
| A. 3.5 to 4 Hours Before Exercise | -> Meal can be 25% Fat |
| B. 3.5 to 4 Hours Before Exercise | -> Relatively Large > 500 Calories |
| C. 2 to 3 Hours Before Exercise | -> Low in Fat (< 25% Fat) High in Carbs |
| D. 1 to 2 Hours Before Exercise | -> Blenderized or Liquid |
| E. >1 Hour Before Exercise | -> Light Carbohydrate Snack, as tolerated |



PRE-COMPETITION MEAL

AFTERNOON EVENT

Eat a large breakfast (e.g., 4 Pancakes with syrup, fruit, and milk or yogurt, which provides about 700 calories).

Depending on the time of the event, lunch can be a small snack of 300 calories (e.g., bagel and a piece of fruit) or a moderate-size meal that provides 500 to 700 calories (e.g., a sandwich, fruit, and pretzels).



PRE-COMPETITION MEAL

EVENING EVENT

Eat a hearty breakfast and lunch, then a light, carbohydrate-rich snack a couple of hours before the event.

Wait to eat dinner until the event is over.



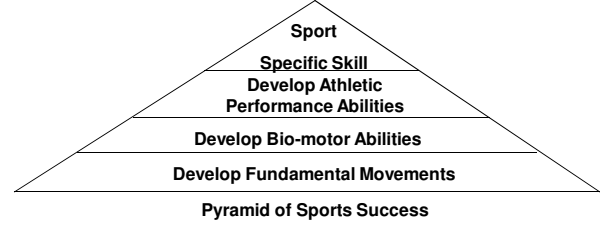
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SPORTS PERFORMANCE



"It takes 10 years of extensive training to excel in any thing: Herbert Simon - Nobel Laureate"

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SPORTS PERFORMANCE

Preparing Athletes For Competition

1. Strength And Power
2. Movement – Speed, Agility, Quickness, Etc
3. Energy Systems Suitable For Competition

Reduce The Likelihood Of Injury

1. Flexibility
2. Mobility
3. Strength
4. Stability
5. Proper Movement Technique

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SPORTS PERFORMANCE

TRAINING MODULES

- Speed, Agility & Coordination
- Energy System Development
- Strength & Power
- Flexibility
- Muscle Regeneration



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NEEDS ANALYSIS

1. Physiological And Biomechanical Requirements Of Sport.
2. Injury Profiles Of Sport.
3. Athlete's Strengths And Weaknesses.
4. Available Facilities, Equipment And Budgeted Resources.
5. Protocols

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SPORTS PERFORMANCE TESTING

- Prior To Beginning Off-Season Phase
- Completion Of Off-Season Phase
- Completion Of Preseason Phase



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SPORTS PERFORMANCE TESTING

- Assess strengths and weaknesses of the individual's physical qualities
- Evaluate effectiveness of previous training phase or season
- Use data for individual pre- and post- comparison



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SPORTS PERFORMANCE TESTING

- Anaerobic Explosive Power - Vertical
 - Vertical Jump
- Anaerobic Explosive Power - Horizontal
 - Standing Long Jump
- Anaerobic Explosive Power – Rotational
 - Medicine Ball Put
- Speed - Linear
 - 40-Yard Sprint
 - 30-Yard Sprint
- Agility and Body Control
 - Pro Agility
 - 3 Cone Test
- Muscle Strength - Upper Body 3 RM
 - Bench Press
- Muscle Strength - Lower Body 3 RM
 - Back Squat

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SPORTS PERFORMANCE

Multiple Sport Strength Training Program:

- Multi-joint, Multi-muscle Group Exercises
- Utilize Free Weights
- Muscle Strength and Explosive Power
- Reduce Likelihood of Injury
- Greater Speed of Movement
- Increased Dynamic Flexibility
- Consistency in Workout Adherence

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SPORTS PERFORMANCE

Strength Training

- Rules To Remember
 - 10 Minute Warm-up
 - Dynamic Warm-up
 - Proper Lifting Techniques
 - Consistency in Training
 - Progress Systematically (5% Increase)
 - Most Critical Exercises First
 - Stretch at End of Workout

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PERIODIZATION

- Systematized Or Organized Training For The Athlete And Team To Reach Optimal Performance At A Designated Time.
- Planned approach to training.
 - Decrease potential for injury and overtraining.
 - By manipulating the many training variables associated with S&C such as intensity, volume, frequency, duration, and specificity. G.A.S.
 - Increase performance
 - Greater increases in physical gains to allow for optimal performance for a designated time or season.

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Periodization Model For Athletes

- Linear Periodization
Strength Training & Conditioning Model That Utilizes Increases In Intensity Over Time.
- Non-Linear Periodization (Undulating) Strength training & conditioning model that involves large daily (i.e., within the week or microcycle) fluctuations in the load and volume assignments for core exercises.

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PERIODIZATION

1. **Transitional**
 - Low volume, low intensity
2. **Hypertrophy**
 - High volume, moderate intensity
3. **Strength**
 - Moderate volume, high intensity
4. **Strength/Power**
 - Low volume, very high intensity
5. **Peaking/Maintenance**
 - Low volume, moderate to high intensity



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STRENGTH TRAINING

- **Total Body Exercises (TBL)**
 - Olympic related lifts
 - Ex. Hang Clean, Push Press
- **Core Exercises (CL)**
 - Multi-joint lifts
 - Ex. Bench Press, Back Squats, Lat Pulldown
- **Auxiliary Exercises (AE)**
 - Single-joint lifts
 - Ex. Leg Curl, Tricep Pushdown
- **Trunk Exercises (TE)**
 - Ex. Planks, Superman

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SPORTS PERFORMANCE - SCHEDULE

- **SUMMER - 06/01 – 08/31**
- **FALL - 09/01 – 11/30**
- **WINTER - 12/01 – 02/28**
- **SPRING - 03/01 – 05/31**

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SPORTS PERFORMANCE

TYPES OF LIFTS

- **Total Body Exercises (TBE)**
 - Olympic related lifts Ex. DB Hang Snatch, Power Clean
- **Core Exercises (CE)**
 - Multi-joint lifts Ex. Bench Press, Back Squats
- **Auxiliary Exercises (AE)**
 - Single-joint lifts Ex. Single-Leg Straight Leg Deadlift
- **Core & Trunk Exercises (TE)**
 - Ex. Front Bridge, Side Bridge, Birdog, Superman

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SPORTS PERFORMANCE

POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

- Movement Preparation
- Dynamic Warm-Up
- Assisted/Resisted Speed
- Plyometric (Lower) & Speed
- Agility Ladder Drills
- Cone Drills
- Conditioning
- Stretching - Static

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POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

DYNAMIC WARM-UP – 1 X 20 YARDS

High Knees
 Heel-Ups
 Power Skip
 High Knees With Foreleg Extension
 Lateral High Knees Rt
 Lateral High Knees Lt
 Backpedal Turn Rt And Run
 Backpedal Turn Lt And Run

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POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

BUILD-UPS – 2 X 20 YARDS

- ½ Speed (1st 3 Steps – Full Speed)
- ¾ Speed (1st 3 Steps – Full Speed)
- Full Speed

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POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

RESISTED/ASSISTED SPEED/ACCELERATION DRILLS

ASSISTED SPEED – 6 X 20 YARDS (2X EACH POSITION) - SPORT CORDS – 3 PERSON

Two Athletes 4 Yards Forward, One Athlete 4 Yards Back
Athletes Forward 8 Yards Apart, Athlete Back (4 Yards From Each)
Two Forward Athletes Begin Sprinting On First Whistle
Back Athlete Sprints On Second Subsequent Whistle, Which Quickly Follows First

RESISTED ACCELERATION TRAINING – 4 X 20 YARDS

2-Person Partner All Purpose Band Drill – 4x Each Person (8)

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POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

PLYOMETRIC & SPEED TRAINING DRILLS – 1 X EACH DRILL

Cones – 1 - 2 Yard Apart (Depending On Athlete Skill Level)
Forward Only
10 Yard Sprint After Last Cone

Cone Jumps & Sprint – Sprint Out
Lateral Cone Jumps, Shuffle & Sprint – Shuffle Out
Cone Jumps, In-Place Tuck Jumps & Sprint – Sprint Out
Single-Leg Hops With Sprint – Sprint Out
Lateral Single-Leg Hops With Sprint – Sprint Out

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POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

AGILITY LADDER DRILLS – 1 X EACH DRILL

Up & Back
2 Athletes At Each End

Icky Shuffle
Hop Scotch
Side Step/Double Step – Both Directions
Scissor Drill – Both Directions
In/Out Drill – Both Directions

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POWER, SPEED & AGILITY PROGRAM - 2X WEEKLY

LINE DRILLS – 2 X EACH DRILL (ONCE ON EACH SIDE)
CONES – 5 YARDS APART

Shuttle (Pro Agility)
Ladder Sprint
Ladder Shuffle
40-Yard Ladder Backpedal – Add Week 2
Ladder - Backpedal Sprint – Add Week 3

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THANK YOU

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