Conditioning Program for Baseball Pitchers

The information found in this booklet is to be used as a guideline for developing a conditioning program for the baseball pitcher. This information is provided to assist coaches and players in developing proper conditioning programs. Because individuals vary, the conditioning program must be adapted to meet the specific needs of each player as determined by a medical professional (physician, physical therapist, athletic trainer, or conditioning coach). The American Sports Medicine Institute, the Alabama Sports Medicine and Orthopaedic Center, and HEALTHSOUTH Rehabilitation Corporation accept no responsibility for the improper use of the following information.

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Foreword

When I first started treating injured baseball players, baseball was considered a six-months-a-year job. Nowadays most experts agree players need a twelve-month periodization program. We have devoted a considerable amount of effort over the past twenty years here at the American Sports Medicine Institute studying throwing injuries in baseball. Based upon this research we now firmly believe that year-round conditioning is a vital component in injury prevention. This is now consistent with research carried out for other sports.

This does not mean that everything is known about proper conditioning for the throwing athlete; research evolves on a yearly basis. There are certain injuries that we are unable to predict, much less prevent, and this will probably continue until more research is conducted.

This booklet contains what we believe to be the best baseball-conditioning program available today. While this booklet has been specifically designed for the pitcher, the concepts apply to all baseball players. Your trainer, physician, or conditioning specialist can adapt this program to fit your competition level, position, schedule, and personal needs.

We are pleased to offer the second edition of this booklet, which contains a completely updated and revised program based on recent advances in the understanding and care of baseball pitchers. We hope that this information helps you stay healthy, enabling you to succeed and enjoy the game of baseball.

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Conditioning Program for Baseball Pitchers

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Principles of Conditioning

Conditioning needs to be approached with the same motivation and organization as the competitive season. Without proper conditioning, muscles, tendons, ligaments, and bones are more likely to suffer injury. This is especially true for the baseball pitcher because each pitch generates a tremendous amount of force and stress on the athlete's body, particularly the shoulder and elbow. A lack of conditioning contributes to poor performance and inconsistency. Proper conditioning cannot, however, be obtained in the 4-5 weeks of pre-season practice. A wellplanned, year-round program is needed to minimize the risk of injury and prepare for peak performance during the competitive season. The saving, "You must condition to play, not play to get into condition" describes a philosophy that is used by successful athletes.

A good program includes more than strength training, as muscular strength is only one requirement for performance. Flexibility, speed, power, muscular endurance, aerobic/anaerobic capacity, agility, and coordination/skill training are also components of a good conditioning program. In addition, the athlete must pay attention to nutrition and mental preparation. While a conditioning program should be individualized based upon the individual's strengths and weaknesses, certain principles must be adhered to:

1. Condition the entire body, not just the arm. It is important that the core of the body (thighs, hips, trunk, abdominals, shoulders) be strong to provide a stable base for movement and reduce the stress on the throwing arm. Keep in mind that over 50% of the energy required to deliver a pitch is generated by the legs and the trunk. A strong and stable lower body is a pitcher's "power zone". Many arm injuries can be prevented by generating power using the core of the body.

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- 2. Train the muscles with the movement they perform during throwing. For example, the large muscles of the trunk (e.g. latissimus dorsi, abdominals, pectoralis major) accelerate the arm during the baseball throw; while the smaller rotator cuff muscles (e.g. infraspinatus and teres minor) decelerate the arm.
- 3. Train for muscular balance. Joint stability relies on the contraction of muscles on both sides of the joint; therefore, a program which emphasizes only certain muscle groups leaves an athlete susceptible to injury. Specific areas of emphasis for the baseball pitcher include the posterior rotator cuff (infraspinatus & teres minor) and scapulothoracic musculature. These muscles are an essential component to dynamic stabilization of the shoulder and are highly susceptible to injury. It is also important to train both sides of the body. In the throwing athlete, the non-throwing arm (lead arm) contributes to rotational forces from the hips and trunk to increase the throwing arm speed and ball velocity.
- 4. Train strength before power and endurance. A base level of strength must be achieved before power drills and muscular endurance exercises can be successfully initiated. For the pitcher, static strength of the rotator cuff, and scapular musculature must be established for shoulder stability before dynamic drills and techniques should be used.
- **5. Emphasize quality of exercise,** not quantity. Do not train merely to fatigue the muscles or to develop muscle mass.
- 6. Train for muscular endurance. Muscular endurance is critical for preventing arm injuries. The muscles of the shoulder joint provide dynamic stability during pitching. Once these muscles are fatigued, the stability of the joint is disturbed which may lead to a variety of shoulder and elbow injuries.
- 7. Although a conditioning program is used throughout the year, the concept of periodization should be implemented.

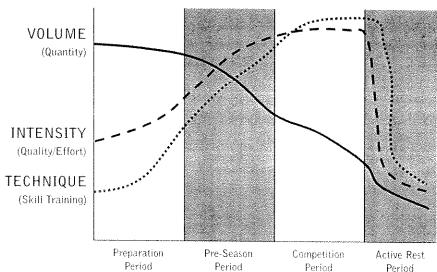
Periodization

"Periodization of training" refers to adjusting the conditioning program over the course of the year, as it is unrealistic to maintain peak performance throughout the entire year. Through periodization, the year-round conditioning program is divided into four periods, each with specific goals and guidelines for progressively preparing the athlete for peak performance during the competitive season. The periods of periodization are:

- 1. The Preparation Period: During this period the athlete will begin traditional total body conditioning. This period is often divided into three cycles because it encompasses the bulk of the off-season. The cycles in order are the hypertrophy/endurance phase, the basic strength phase, and the strength/power phase.
- **2. The Pre-Season Period:** The pre-season period, more commonly known as "spring training", is the time the athlete works on specific skills and proper techniques. The athlete is making the transition from strength gaining to sport specific skill enhancement.
- **3. The Competition Period:** This period is the regular season. In college and high school athletes, this involves both the Spring and Summer seasons.
- **4. The Active Rest Period:** This is the first of the three periods of the off-season and begins immediately following the competitive season.

During each of these periods, the volume of work, intensity of effort, and skill/technique are adjusted according to the period. As the prepation period starts, the volume of work is high while the skill/technique training and intensity level is low. As the season approaches, the volume of work decreases while the skill/technique training and intensity of effort increases. The graph below is a model of periodization and demonstrates the direct relationship between intensity and technique, and the inverse relationship between volume and technique. The time-frames for each period are not pre-set or rigid, rather they should be individualized to allow progressive strengthening and peaking in time for the competitive season. In general, the starting date and length of the competitive season will determine how much time is spent in the other phases.

Model of Periodization



Adapted from Matveyer's model of periodization

Volume: the amount of work performed (sets, reps, etc.)

Intensity: the quality of effort

Technique: the activity or skill

Preparation Period-Cycle I: Hypertrophy/Endurance Phase

Goals

As the name of this phase suggests, one goal of this phase is to increase lean body mass and develop a muscular and metabolic endurance base for the intensified training that will occur in the later phases and periods.

Flexibility

Stretching should be performed 15 minutes before activity and 5-6 minutes after completion of the activity. Be sure to perform 5-6 minutes of a proper warm-up before beginning sport-specific stretches in order to minimize the risk of muscle strain. All major muscle groups should be stretched, especially those with decreased flexibility. Each stretch should be held at the point of mild discomfort for 30 seconds and performed 1-3 times each. Refer to the appendix for suggested stretching exercises.

Aerobic / Anaerobic

Cardiovascular exercise should be performed for 5-10 minutes, at least two days per week. Running, stationary bicycle, or stairmaster are all acceptable forms of cardiovascular exercise. Sprints will also be initiated in this period. Rest 15-45 seconds in between sprints.

Strength

Resistance training is initiated three days per week at an intensity of 50-55% of a three repetition max (RM). If a 3 RM test is not performed, the athlete should select the amount of weight for each exercise such that fatigue is felt at the last repetition, yet the athlete is able to complete all repetitions. If the suggested weight is too heavy, decrease the weight to achieve the recommended repetitions. Rest approximately 15 to 30 seconds in between sets.

Rotator Cuff (RTC) Exercises

The tubing and weighted rotator cuff exercises are performed three times a week. Refer to the appendix for suggested RTC exercises.

Plyometrics

Medicine ball drills will be performed one day a week. Refer to the appendix for suggested plyometric exercises.

Coordination / Skill

Pitchers should begin balancing drills on a balance beam (or suitable alternative). These drills should be performed two days per week for 20-30 minutes.

(1 SET x 12 REPS) (1 SET x 12 REPS) (1 SET x 12 REPS)

| MONDAY | | WEDNESDAY | | FRIDAY | |
|-----------------------------|-------------|-----------------------------|-------------|----------------------|-------------|
| Squat | 50% max | Latissimus Pull-Down(Front) | 50% max | Squat | 50% max |
| Leg Press | 50% max | Reverse Flys | Tubing | Leg Press | 50% max |
| Forward Lunge | BW | Dumbbell Incline Press | 50% max | Step-Up | BW |
| Knee Extension | 50% max | Hammer Curl | 50% max | Side Lunge | BAR |
| Leg Curl | 50% max | Triceps Kick-Back | 3-5 lbs | Standing Calf Raise | 50% max |
| Latissimus Pull-Down(Front) | 50% max | Back Extension | BW | Seated Row | 50% max |
| Dumbbell Bench Press | 50% max | Forearm Pronation | 3-5 lbs | Push Up | 25 reps |
| Seated Row | 50% max | Forearm Supination | 3-5 lbs | Bent Over Row | 10-20 lbs |
| Biceps Curl | 50% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 50% max |
| Triceps Extension | BAR | Plyometrics (Series A) | 2 x 10 reps | Triceps Press Down | 50% max |
| RTC Exercises | 1 x 10 reps | Crunch | 1 x 20 reps | RTC Exercises | 1 x 10 reps |
| Crunch | 1 x 20 reps | Reverse Crunch | 1 x 20 reps | Crunch | 1 x 20 reps |
| Weighted Crunch | 20 reps | Sprinting | 3 x 60 yds | Crunch With Twist | 1 x 20 reps |
| Bike/Run/Stairmaster | 5 mins | | | Bike/Run/Stairmaster | 5 mins |

| WEEK 2 | (2 SETS x 12 R | EPS) | (2 SETS x 12 R | EPS) | (2 SETS x I | 2 REPS) |
|--------|-----------------------------|----------------------------|-----------------------------|-------------|----------------------|--------------|
| | MONDAY | | WEDNESDAY | | FRIDAY | |
| | Squat | 55% max | Latissimus Pull-Down(Front) | 55% max | Squat | 55% max |
| | Leg Press | 55% max | Reverse Flys | Tubing | Leg Press | 55% max |
| | Forward Lunge | 5-10 lbs | Dumbbell Incline Press | 55% max | Step-Up | 10 lbs |
| | Knee Extension | 55% max | Hammer Curl | 55% max | Side Lunge | BAR + 10 lbs |
| | Leg Curl | 55% max | Triceps Kick-Back | 5 lbs | Standing Calf Raise | 55% max |
| | Latissimus Pull-Down(Front) | 55% max | Back Extension | BW | Seated Row | 55% max |
| | Dumbbell Bench Press | 55% max | Forearm Pronation | 3-5 lbs | Push Up | 25 reps |
| | Seated Row | 55% max Forearm Supination | | 3-5 lbs | Bent Over Row | 10-20 lbs |
| | Biceps Curl | 55% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 55% max |
| - | Triceps Extension | BAR + 5-10 lbs | Plyometrics (Series B) | 2 x 10 reps | Triceps Press Down | 55% max |
| www. | RTC Exercises | 1 x 10 reps | Crunch | 1 x 25 reps | RTC Exercises | 1 x 10 reps |
| | Crunch | 1 x 25 reps | Reverse Crunch | 1 x 25 reps | Crunch | 1 x 25 reps |
| | Weighted Crunch | 1 x 25 reps | Sprinting | 3 x 60 yds | Crunch With Twist | 1 x 25 reps |
| | Bike/Run/Stairmaster | 5 mins | | | Bike/Run/Stairmaster | 5 mins |

| EEK 3 | (3 SETS x 12 R | EPS) | (3 SETS x 12 R | EPS) | (3 SETS x 12 | REPS) |
|-------|----------------------------|----------------|-----------------------------|-------------|----------------------|--------------|
| М | ONDAY | | WEDNESDAY | | FRIDAY | (|
| Sc | quat | 55% max | Latissimus Pull-Down(Front) | 55% max | Squat | 55% max |
| L.e | eg Press | 55% max | Reverse Flys | Tubing | Leg Press | 55% max |
| Fo | orward Lunge | 5-10 lbs | Dumbbell Incline Press | 55% max | Step-Up | 15 lbs |
| Kı | nee Extension | 55% max | Hammer Curl | 55% max | Side Lunge | BAR + 10 lbs |
| Le | eg Curl | 55% max | Triceps Kick-Back | 3-5 lbs | Standing Calf Raise | 55% max |
| L | atissimus Pull-Down(Front) | 55% max | Back Extension | BW | Seated Row | 55% max |
| D | umbbell Bench Press | 55% max | 55% max Forearm Pronation | | Push Up | 25 reps |
| Se | eated Row | 55% max | Forearm Supination | 3-5 lbs | Bent Over Row | 10-20 lbs |
| В | iceps Curl | 55% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 55% max |
| Tr | riceps Extension | BAR + 5-10 lbs | Plyometrics (Series A) | 2 x 10 reps | Triceps Press Down | 55% max |
| R | TC Exercises | 1 x 10 reps | Crunch | 1 x 25 reps | RTC Exercises | 1 x 10 reps |
| C | runch | 1 x 25 reps | Reverse Crunch | 1 x 25 reps | Crunch | 1 x 25 reps |
| W | /eighted Crunch | 1 x 25 reps | Sprinting | 4 x 60 yds | Crunch With Twist | 1 x 25 reps |
| В | ike/Run/Stairmaster | 7 mins | | | Bike/Run/Stairmaster | 7 mins |

WEEK 4 (3 SETS x 12 REPS)

(3 SETS x 12 REPS) (3 SETS x 12 REPS)

| | , | * | | (00000000000000000000000000000000000000 | |
|-----------------------------|----------------|-----------------------------|-------------|---|--------------|
| MONDAY | | WEDNESDAY | | FRIDAY | |
| Squat | 60% max | Latissimus Pull-Down(Front) | 60% max | Squat | 60% max |
| Leg Press | 60% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Lunge | 5-10 lbs | Dumbbelf Incline Press | 60% max | Step-Up | 20 LBS |
| Knee Extension | 60% max | Hammer Curi | 60% max | Side Lunge | BAR + 15 lbs |
| Leg Curl | 60% max | Triceps Kick-Back | 3-5 lbs | Standing Calf Raise | 60% max |
| Latissimus Pull-Down(Front) | 60% max | Back Extension | BW | Seated Row | 60% max |
| Dumbbell Bench Press | 60% max | Forearm Pronation | 3-5 lbs | Push Up | 25 reps |
| Seated Row | 60% max | Forearm Supination | 3-5 lbs | Bent Over Row | 10-20 lbs |
| Biceps Curl | 60% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 60% max |
| Triceps Extension | BAR + 5-10 lbs | Plyometrics (Series B) | 2 x 10 reps | Triceps Press Down | 60% max |
| RTC Exercises | 1 x 10 reps | Crunch | 2 x 25 reps | RTC Exercises | 1 x 10 reps |
| Crunch | 2 x 25 reps | Reverse Crunch | 2 x 25 reps | Crunch | 2 x 25 reps |
| Weighted Crunch | 2 x 25 reps | Sprinting | 4 x 60 yds | Crunch With Twist | 2 x 25 reps |
| Bike/Run/Stairmaster | 7 mins | | | Bike/Run/Stairmaster | 7 mins |

Preparation Period-Cycle II: Basic Strength Phase

Goals

In this phase, the rotator cuff muscles and other muscles essential to throwing are strengthened. The strength foundation built in the previous cycle is now utilized in functional patterns including throwing. This phase involves heavier loads for fewer repetitions than the hypertrophy/endurance phase.

Flexibility

As in the hypertrophy/endurance phase.

Aerobic / Anaerobic

Cardiovascular exercise through running should be performed for 10-15 minutes, at least two days per week. Perform anaerobic training as indicated in the workout table. Rest 15-45 seconds in between sprints.

Strength

Strength workouts are performed four times per week, at three sets for each exercise. Lower body exercise is performed on Mondays and Thursdays while upper body exercise is to be done on Tuesdays and Fridays. If the suggested weight is too heavy, decrease the weight to achieve the recommended repetitions. Rest approximately 30 to 45 seconds in between sets.

Rotator Cuff (RTC) Exercises

The tubing and weighted rotator cuff exercises are performed two days a week, accompanying the upper body workouts. When building strength in weeks 5-10, gradually increase the weights for the RTC exercises. Be sure the exercise can still be performed comfortably without any pain while maintaining the correct exercise technique. Refer to the appendix for suggested RTC exercises.

Plyometrics

Plyometrics are performed two days a week. Refer to the appendix for suggested plyometric exercises.

Coordination / Skill

Pitchers will begin the long-toss phase of the interval throwing program, two to three days per week. Start throwing at a distance of 45 feet, and progress to 180 feet by the end of the period.

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| Color Colo | SGRAL | 60-65% max | Reverse Flys | Tubing | Squat | 60-65% max | Reverse Flvs | Tabina |
| Control Cont | Leg Press | 60-65% max | Dumbbell Bench Press | 60-65% шах | Leg Press | 60-65% max | Dumbbell Incline Press | 60-65% m |
| Fig. 19 Fig. | Back Extension | BW | Bent Over Row | 20-25 lbs | Back Extension | BW | Hammer Curl | 60-65% m |
| Control Cont | Forward Lunge | 10-20 lbs | ncline Pr | 60-65% max | Side Lunge | | Tricens Press Down | 60-65% m |
| Column | Knee Extension | 60-65% max | Biceps Curi | 60-65% max | Step-Up | 1 | Concentration Carl | 60-65% m |
| Particular 2 x 30 mps Received Building Received Building Building Received Building Build | Leg Curi | 60-65% max | Triceps Extension | 10-15 | | 60-65% max | Tricens Kick-Back | 4 bs |
| According Record (Notice) 2 x 30 cps Recording to the Section of High States (Notice) County With Traces (Notice) 2 x 30 cps Recording to the Section of High States (Notice) County With Traces (Notice) Section of High States (Notice) Proportion of High States (Notice) | Crunch | 2 x 30 reps | Wrist Curls | 5 lbs | Weighted Crisich | 2 x 3/1 rens | RAMAKA WHIST FIRMS | 7 Bc |
| Object Ruch Stationistic (Record Ruch Stationists) 5-10 Bis (Ruch Stationists) 5-10 Bis (Ruch Ruch Stationists) 5-10 Bis (Ruch Ruch Ruch Ruch Ruch Ruch Ruch Ruch | Reverse Crunch | 2 x 30 reps | Rice Bucket | 45 SPCS | Crunch With Taict | 2 × 30 rens | Dico Buckey | AH |
| Commerce State Comm | Bike/Run/Stairmaster | | Forearm Pronation | 5-10 lbc | William / Arter a version of the control of the con | 10 minut | Pice Backet | #0 Sec. 5 |
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| Control | | | total a sublitation | -10 ins | | | Forearm Supination | 5-10 lbs |
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| 66 (3 NETS X 8 REPS) MONDAY TUESDAY TUESDAY TUENDAY TUENDAY TUENDAY TUENDAY TO 72% max Reverse Prys Log Person 65-70 % max Duringle Barth Press 65-70 % max Leg Person TO 72% max Person Duringle Barth Press G-570 % max Person Duringle Barth Press G-570 % max Person Duringle Barth Press Duringle Barth Bar | | | cs (Series | 2×10 reps | | | Plyometrics(Series B) | 2 x 10 reps |
| 66 (3 KLTS N 8 KEPS) (3 KLTS N 8 KEPS) (3 KLTS N 8 KEPS) (4 KRDAY) (4 KRDAY) (4 KRDAY) (4 KRDAY) (5 KLTS N 8 KEPS) (5 KRDAY) | | | Sprinting | 5 x 60 yds | , | | Sprinting | 5 x 60 yds |
| MONDAY TUESDAY Tubing Squart TO 73% max Reverse Flys Signatt 65-70 % max Log Press 570 % max Tubing Squart 70.73% max Reverse Flys Log Press 65-70 % max Log Press 570 % max Reverse Flys Reverse Flys Reverse Flys Back Lexicosion BW Reverse Flys Back Lexicosion BW Reverse Flys Reverse Lexicosion BW Bert Oper Reverse Press Bert Oper Reverse Press Bert Oper Reverse Press BBR Reverse Press BBR Reverse Press Leg Certification 65-70 % max Harmete Certification 5-10 lbs Reverse Press Press Reverse Press Reverse Fly Log Certification 2 x 40 ress Meets One 5-10 lbs Reverse Press Press Reverse Press Bite Run Statin Maise 1 x 10 resp 1 x 10 resp 1 x 10 resp Reverse Press Reverse Press Reverse Press Reverse Press Bite Run Statin Maise 1 x 40 resp 1 x 10 resp 1 x 10 resp 1 x 10 resp Reverse Press Revers | | REPS) | X SLAS E) | | | REPS) | (3 SETS X 8 I | (EPS) |
| Squart 65-70 % max Tubing Squart 70.75% max Reverse Flys Lest Press 65-70 % max Lish Press 67-70 % max Lish Press Bart Cheerson But Cheerson | MONDAY | | TUESDAY | The second secon | THURSDAY | WWW.nate. | | |
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| Bits of Extension BW Bent Oper Row 30.35 ibs Back Extension BW 7.55 unt Finite Day Forward Lunge 20.25 ibs Dumbbell Incline Press 65.70 % max 56.70 % max 56.70 % max Sep-Ung 8.84 + 25 ibs 17 crosp Sep-Ung Rine Extension 65.70 % max Finite Finite Press 65.70 % max Finite Press 65.70 % max Finite Press Cunch 2 x 40 ress Rice Builder 6.70 % max Finite Press Rice Builder 6.70 % max Finite Press Rice Runs 2 x 40 ress Rice Builder 6.70 % max Finite Press Finite Press Rice Builder Finite Press Bite Runs Starmaster 1 x mins Foreign Supriation 5.70 max Finite Press Foreign Supriation 5.70 max Foreign Supriation Rice Runs 1 x mins Foreign Supriation 5.70 max Finite Runs Foreign Supriation Foreign Supriation Rice Runs 1 x mins Finite Press Foreign Supriation Foreign Supriation Foreign Supriation Reverse Finite 1 x mins < | Leg Press | 65-70 % max | Dumbbel Bench Press | 65-70 % may | - An Dyone | 70.750/ 1007 | Diet Her | 50000 |
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| Crunch 2 x 40 reps Rice Builder 5-10 lbs Weighted Crunch 2 x 40 reps Rice Builder Reverse Crunch 2 x 40 reps Rice Builder 5.0 lbs Gosen Crunch With Twist 2 x 40 reps Rice Builder Rice Runs Starmaster 12 mins Forearm Supination 5-10 lbs Bike-Run/Starmaster 12 mins Forearm Supination Forearm Supination Forearm Supination 5-10 lbs Bike-Run/Starmaster RTC Exercises RTC Exercises Plyometrics (Series 4) 2 x 10 reps A x 60 yds RTC Exercises Psymetrics (Series B) Sprinting RONDAY TUESDAY THURSDAY RRICE Exercises Squast 75-80% max Reverse Flys Tubing Squast Box 85% max Latissimus Pull-Doun(Font) Leg Press 75-80% max Dumbbell Berich Press 75-80% max Theing Squast Box 85% max Latissimus Pull-Doun(Font) Kroee Extension 10-35 lbs Dumbbell Berich Press 75-80% max Step Lumpe Box 85% max Triceps Curl Crunch Reverse Crun | Leg Curl | 65-70 % max | Triceps Extension | BAR + 15-20 lbs | Standing Calf Raise | 70-75% may | Trickon (Cottagant | 10 15. |
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| ONDAY TUESDAY TUESDAY THURSDAY TRID Rate Reverse Council and Face Reverse Council and RTC Exercises Bix and | Reverse Crunch | 2 x 40 reps | Rice Bucket | 60 secs | Cristich With Twist | 2 x 40 reps | Rice Bucket | 45 SPCS |
| THURSDAY THURSDAY | bike/kun/stairmaster | 12 mins | Forearm Pronation | 5-10 lbs | Bike/Run/Stairmaster | 12 mins | Forearm Pronation | 5-10 lbs |
| THUE SEATON SETTING | | | Forearm Supination | 5-10 lbs | | AND THE RESERVE AND | Forearm Supination | 5-10 lbs |
| Plyometrics (Series B) Plyometrics (Series B) Sprinting Exempted Ex | | | RTC Exercises | 1 x 10 reps | | | RTC Exercises | 1 x 10 reps |
| Apprinting | | | Plyometrics (Series A) | 2 x 10 reps | | | Plyometrics (Series B) | $2 \times 10 \text{ reps}$ |
| MONDAY TUESDAY THURSDAY THURSDAY FRIDAY MONDAY TUESDAY THURSDAY THURSDAY FRIDAY Squat 75-80% max Dumbbell Bench Press 75-80% max Leg Press Cumbbell Incline Press Squat 75-80% max Dumbbell Bench Press 75-80% max Leg Press 80-85% max Latissimus Pull-Down(Front) Kinee Extension BW Bent Over Row 40-45 lbs Back Extension BW Back Extension BW BAR + 35 lbs Triceps Curl Kinee Extension BW Back Extension BW A5-80% max 75-80% max 10-1bs Meighted Cunch 45 lbs Concentration Curl Leg Curl 75-80% max Bicless Curl 75-80% max BAR + 20-25 lbs Standing Calf Raise 80-85% max Iriceps Kick-Back Crunch 2 x 40 reps Rice Bucket 75-80% max Meighted Crunch 2 x 40 reps Rice Bucket Reverse Crunch 2 x 40 reps Rice Bucket 2 x 40 reps Rice Bucket Reverse Wrist Curls Reverse Runker <td></td> <td></td> <td>ghantage</td> <td></td> <td></td> <td></td> <td>Sprinting</td> <td>6 x 60 yds</td> | | | ghantage | | | | Sprinting | 6 x 60 yds |
| AY TUESDAY THURSDAY THURSDAY FRIDAY 5580% max Reverse Flys Tubing Squat 80-85% max Leg Press 5580% max Dumbbell Bench Press 75-80% max Leg Press 80-85% max Dumbbell Incline Press d Linge 30-35 lbs Dumbbell Incline Press 75-80% max Step-Up AFR + 35 lbs Friceps Press Down xtension 75-80% max Triceps Extension BAR + 20-25 lbs Standing Calf Raise 80-85% max Triceps Press Down xtension 2 x 40 reps Wrist Curls 10 lbs Weighted Crunch 2 x 40 reps Rice Bucket crunch 2 x 40 reps Rice Bucket 75-80% Rice Bucket 15 mins Forearm Pronation Forearm Supination 5-10 lbs Bilee/Run/Stairmaster 15 mins Forearm Supination Forearm Supination RTC Exercises RTC Exercises Plyometrics (Series A) 2 x 10 reps RTC Exercises | r | REPS) | | 8 REPS) | (3 SETS X 8 | REPS) | (3 SETS X 8 R | FPS |
| 75-80% max Reverse Flys Tubing Squat 80-85% max Latissimus Pull-Down(Front) xtension BW Bent Over Row 40-45 km Back Extension | MONDAY | | TUESDAY | | THURSDAY | TO STATE OF THE ST | | (|
| 35-80% max Dumbbell Bench Press 75-80% max Leg Press 80-85% max Bumbbell Incline Press d Linge 30-35 lbs Bent Over Row 40-45 lbs Back Extension BW Biceps Curl d Linge 30-35 lbs Dumbbell Incline Press 75-80% max Side Linge BAR + 35 lbs Triceps Press Down xtension 75-80% max Step-Up 45 lbs Concentration Curl 10-80% max Triceps Extension BAR + 20-25 lbs Standing Calf Raise 80-85% max Triceps Press Down 10-10-10-10-10-10-10-10-10-10-10-10-10-1 | Squat | 75-80% шах | Reverse Flys | Tubina | SILA | 80.85% max | (aticional Doll December | 00.000 |
| Edition BW Bent Over Row 40-45 lbs Back Extension BW Biceps Curl d Linge 30-35 lbs Dumbbell Incline Press 75-80% max Side Linge BAR + 35 lbs Triceps Press Down xtension 75-80% max Triceps Extension BAR + 20-25 lbs Standing Calf Raise 80-85% max Triceps Press Down 10-10 2 x 40 reps Wrist Curls 10 lbs Weighted Crunch 2 x 40 reps Rice Bucket Reverse Wrist Curls Crunch 2 x 40 reps Rice Bucket 75 secs Crunch With Twist 2 x 40 reps Rice Bucket In/Stairmaster 15 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Supination RTC Exercises 1 x 10 reps RTC Exercises Plyometrics (Series A) 2 x 10 reps RTC Exercises | Leg Press | 75-80% max | Dumbbell Bench Press | 75-80% max | Lea Press | 80-85% max | Dumbhell Incline Press | 00-02 % ME |
| d Linge 30-35 lbs Dumbbel Incline Press 75-80% max Side Lunge BAR + 35 lbs Triceps Press Down 75-80% max 75-80% max Step-Up 45 lbs Concentration Curl 10-80% max 75-80% max Step-Up 45 lbs Concentration Curl 10-80% max 10-80% max Step-Up 10-80-85% max Triceps Kick-Back 10-10-80 Wrist Curls 10-10-85 Weighted Crunch 2 x 40 reps Rice Bucket 10-10-80 Rice Bucket 75 secs Crunch With Twist 2 x 40 reps Rice Bucket 10-10-80 Rice Mun/Stairmaster 15 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation 10-10-80 RTC Exercises 1 x 10 reps RTC Exercises RTC Exercises Plyometrics (Series B) | Back Extension | BW | Bent Over Row | 40-45 lbs | Back Extension | BW | Bioen Circ | 80-0276 IIId |
| Y5-80% max Biceps Curl 75-80% max Step-Up 45 lbs Concentration Curl 16-80% max Triceps Extension BAR + 20-25 lbs Standing Calf Raise 80-85% max Triceps Kick-Back Crunch 2 x 40 reps Wrist Curls 10 lbs Weighted Crunch 2 x 40 reps Rice Bucket Crunch 2 x 40 reps Rice Bucket 75 secs Crunch With Twist 2 x 40 reps Rice Bucket In/Stairmaster 15 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation RTC Exercises 1 x 10 reps 1 x 10 reps RTC Exercises RTC Exercises Pyometrics (Series A) 2 x 10 reps RTC Exercises Piyometrics (Series B) | Forward Lunge | 30-35 lbs | Dumbbeil Incline Press | 75-80% max | Side Lunge | BAR + 35 ths | Tricon Proce Down | 80.85% |
| 7 - 80% max Triceps Extension BAR + 20-25 lbs Standing Calf Raise 80-85% max Triceps Kick-Back Crunch 2 x 40 reps Rice Bucket 75 secs Crunch 2 x 40 reps Rice Bucket In/Stairmaster 15 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation RTC Exercises 1 x 10 reps 1 x 10 reps RTC Exercises RTC Exercises Pypometrics (Series A) 2 x 10 reps RTC Exercises RTC Exercises | Knee Extension | 75-80% max | Biceps Carl | 75-80% max | Step-Up | 45 lbs | Concentration Curi | 80-85% max |
| Crunch 2 x 40 reps Wrist Curls 10 lbs Weighted Crunch 2 x 40 reps Reverse Wrist Curls In/Stairmaster 15 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation Forearm Supination 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation RTC Exercises 1 x 10 reps RTC Exercises Piyometrics (Series A) 2 x 10 reps RTC Exercises | Court of the court | 75-80% max | Triceps Extension | 20-25 | Standing Calf Raise | 80-85% max | Triceps Kick-Back | 10-15 (bs |
| 2 x 40 reps Rice Bucket 75 secs Crunch With Twist 2 x 40 reps Rice Bucket 15 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation Forearm Supination 5-10 lbs RTC Exercises RTC Exercises Right of Properties (Series A) 2 x 10 reps RTC Exercises | Reverse Princh | Z X 40 1805 | Wrist Curis | 10 lbs | Weighted Crunch | 2 x 40 reps | Reverse Wrist Curis | 10-15 lbs |
| Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 15 mins Forearm Pronation | Rike/Run/Stairmantez | SCS 104 Z | Rice Bucket | 75 secs | Crunch With Twist | 2 x 40 reps | Rice Bucket | 45 secs |
| December December | TOTAL STREET, | SIIII O | rorearm Pronation | 5-10 lbs | Bike/Run/Stairmaster | 15 mins | Forearm Pronation | 5-10 lbs |
| 1 x 10 reps | | | PTC Exercises | 5-10 (0) | | | Forearm Supination | 5-10 lbs |
| 2 (Serves A) 2 x 10 (Pbs 2) (Serves B) | | Consider second | Divisional (Soular A) | 1 x 10 reps | | | RTC Exercises | 1×10 reps |
| | | | i yometrics (aeries A) | Z X 10 reps | | | Piyometrics (Series B) | 2 x 10 reps |

| WEEK | 8 (3 SETS X 8 REPS) | REPS) | (3 SETS X | 8 REPS) | (3 SETS X 8 REPS) | REPS) | (3 SETS X 8 REPS) | REPS) |
|---------|--|--|---|--|--|--|--|--|
| | MONDAY | ANALYSIS OF THE PROPERTY OF TH | TUESDAY | | THURSDAY | THE PARTY OF THE P | FRIDAY | |
| | Cores of | 40.65% may | RAYARS FIVE | Tubina | Squat | 60-65% max | Reverse Fiys | Tubing |
| | Just Duner | 40-65% may | Dumbhall Rench Press | 60-65% max | Lea Press | 60-65% max | Dumbbell Incline Press | 60-65% max |
| | Roof February | RW | Rent Over Row | 20-25 lbs | Back Extension | BW | Hammer Curl | 60-65% max |
| | Foregrafia usada | 10.20 lbs | Dumbbell Incline Press | 60-65% max | Side Lunge | BAR + 20 lbs | Triceps Press Down | 60-65% max |
| | Kupe Extension | 60-65% max | Biceps Curl | 60-65% max | Step-Up | 25 lbs | Concentration Curl | 60-65% max |
| | Leg Cur | 60-65% max | Triceps Extension | BAR + 10-15 lbs | Standing Calf Raise | 60-65% max | Triceps Kick-Back | 5 lbs |
| | Grundia | 2 x 30 reps | Wrist Curls | 5 lbs | Weighted Crunch | 2 × 30 reps | Reverse Wrist Curls | 5 105 |
| | Reverse Crunch | 2 x 30 reps | Rice Bucket | 45 secs | Crunch With Twist | 2 x 30 reps | Rice Bucket | 45 secs |
| | Bike/Run/Stairmaster | 10 mins | Forearm Pronation | 5-10 lbs | Bike/Run/Stairmaster | 10 mins | Forearm Pronation | 5-10 lbs |
| | The state of the s | | Forearm Supination | 5-10 lbs | | | Forearm Supination | 5-10 lbs |
| | | | RTC Exercises | 1 x 10 reps | | | RTC Exercises | I × 10 reps |
| | | | Plyometrics (Series A) | 2×10 reps | | | Piyometrics (Series B) | Z x 10 reps |
| | | | Sprinting | 5 x 60 yds | , | | Sprinting | 5 x 60 yds |
| MAAM | a SETS X 8 REPS) | REPS | (3 SETS X | 8 REPS) | (3 SETS X 8 REPS) | (REPS) | (3 SETS X 8 REPS) | REPS) |
| | MONDAY | | TUESDAY | CALL STREET PRINTERS. | THURSDAY | | FRIDAY | A Daniel A Joseph Company |
| | | 00.000 (10.000 | | COLUMN A ALAMAN DI COLUMN A ALAMA A AL | | The state of the s | The state of the s | This continues |
| | Squat | 65-70 % max | Reverse Flys | Tubing | Squat | /0-/2% max | Keverse Flys | 3 × 35 zens |
| | Leg Press | 65-70 % max | Dumbbell Bench Press | 65-70 % max | Leg Press | /U-/5% max | Push-Ups | 70.75% may |
| | Back Extension | BW | Bent Over Row | 30-35 lbs | Back Extension | -1 50 : 0 V C | Triong Bush Down | 70-75% may |
| | Forward Lunge | 20-25 ibs | Dumbbell Boline Press | 65-70 % max | Star Lunge | 24 Pc - 42 ES | Concentration Curl | 70-75% max |
| | Knee Extension | 65-70 % max | Hammer Curi | 00-/U 70 HildX | Step-Up Standing Calf Paice | 70-75% may | Tricens Kick-Back | 10 lbs |
| | Leg Curi | 62-70 % max | If ceps Extension | F 10 15-20 103 | Mainted Centre | 2 x 40 rens | Reverse Wrist Curls | 10 lbs |
| | Crunch Process | 2 × 40 reps | Wrist Caris | An ope | Crinch With Twist | 2 × 40 reps | Rice Bucket | 45 secs |
| | Dita Dita (Statements) | 3 mins | Forearm Propation | 5-10 lbs | Rike/Run/Stairmaster | 12 mins | Forearm Pronation | 5-10 lbs |
| | DIRE/ NAME OLGAN MASSET | CHIII) 77 | Forearm Supination | 5-10 lbs | THE PROPERTY OF THE PROPERTY O | The state of the s | Forearm Supination | 5-10 lbs |
| | | | RTC Exercises | 1 x 10 reps | | | | 1 x 10 reps |
| | | | Plyometrics (Series A) | 2 x 10 reps | ··· | | Plyometrics (Series B) | 2 × 10 reps |
| | | | Sprinting | 6 x 60 yds | | | Sprinting | 6 x 6U yds |
| WEEK 10 | 10 (3 SETS X 8 REPS) | REPS) | (3 SETS X | 8 REPS) | (3 SETS X 8 REPS) | (REPS) | (3 SETS X 8 REPS) | REPS) |
| | AONDAY | A A A A A A A A A A A A A A A A A A A | TUESDAY | A A A A A A A A A A A A A A A A A A A | THURSDAY | | FRIDAY | - AND ADDRESS OF THE PROPERTY |
| | C /u A | 75 80% max | Dovoved Elve | Tikina | Same | 80-85% max | Latissimus Puil-Down (Front) |) 80-85% max |
| | STUCK. | 75-80% max | Dumbhell Bench Press | 75-80% max | Leg Press | 80-85% max | Dumbbell Incline Press | 80-85% max |
| | Back Extension | AG | Bent Over Row | 40-45 lbs | Back Extension | BW | Biceps Curl | 80-85% max |
| | Forward Lunge | 30-35 lbs | Dumbbell Incline Press | 75-80% max | Side Lunge | BAR + 35 lbs | Triceps Press Down | 80-85% max |
| | Knee Extension | 75-80% max | Biceps Curl | 75-80% max | Step-Up | 45 lbs | Concentration Curl | 80-85% max |
| | Leg Curi | 75-80% max | Triceps Extension | BAR + 20-25 lbs | Standing Calf Raise | 80-85% max | Freeps Kick-back | 10-12 (0) |
| | Crunch | 2 x 40 reps | Wrist Curis | 10 lbs | Weighted Crunch | 2 x 40 reps | Reverse wrist curis | AE care |
| | Reverse Crunch | 2 x 40 reps | Rice Bucket | 75 secs | Crunch With Iwist | 2 x 40 reps | Kice bucket | 40 Sec. 2 |
| | Bilke/Run/Stairmaster | 15 mins | Forearm Pronation | 5-10 lbs | Bike/Kun/Stairmaster | T2 MINS | Foregrin Prohabiton | 5-10 Bs |
| | | | Forearm Supination | 5-10 lbs | | | RTC Exercises | 1 x 10 reps |
| | | | Disconstrice (Series A) | 2 x 10 vens | | | Plyometrics (Series B) | 2 x 10 reps |
| | | | Contation | | | | Sprinting | 7 x 60 yds |
| | | | A CALL TELEVICE TO THE COLUMN | The management of the second | weg | | A ANDRON WINNING TO THE PROPERTY OF THE PROPER | A CONTRACTOR OF THE CONTRACTOR |

Preparation Period-Cycle III: Strength/Power Phase

Goals

The goal of this phase is to intensify the activity to near competition levels. Also, an increased emphasis is placed on the exercises that are more sport specific.

Flexibility

As in the hypertrophy/endurance phase.

Aerobic / Anaerobic

Cardiovascular exercise through running should be performed for 20-30 minutes, at least two days per week. Perform anaerobic training as indicated in the workout table. Rest 15-45 seconds in between sprints.

Strength

Strength and power workouts are performed two times per week each, at three sets for each exercise. Note that the amount of weight lifted during power exercises do not follow the typical %1RM guidelines. If the suggested weight is too heavy, decrease the weight to achieve the recommended repetitions. The POWER DAYS are designated in the table. On the POWER DAYS, the exercises are to be performed explosively. The (NP) next to some exercises indicate that the exercise is not to be performed as a power exercise that day. Rest approximately 1 to 3 minutes in between sets.

Rotator Cuff (RTC) Exercises

The tubing and weighted rotator cuff exercises are performed two days a week, accompanying the upper body workouts. When gaining strength in weeks 11-16, gradually increase the weights for the RTC exercises. Be sure the exercise can still be performed comfortably without any pain while maintaining the correct exercise technique. RTC exercises are not to be exercised to failure or "burnout". Refer to the appendix for suggested RTC exercises.

Plyometrics

Plyometric drills are performed two days per week. Refer to the appendix for suggested plyometric exercises.

Coordination / Skill

Pitchers will continue the long-toss phase of the interval throwing program, two to three days per week. Begin at step 14 or flat ground throwing. Approximately halfway through this phase, the pitcher should begin to throw from the mound, using proper pitching mechanics and limiting his pitches.

| MANNAA STATE STA | WEEK II | POWER DAY | (3 SETS X 12 REPS) | (3 SETS X 2-5 REPS) | 2-5 REPS) | (3 SETS X 2 | 2-5 REPS) | POWER DAY (3 SETS | (S X 12 REPS) |
|--|---------|------------------------|--|------------------------|--|--|--|--|---|
| 10.55% table 10.50% table 10.5 | | MONDAY | WALA ARREST VICTORIA | TUESDAY | | THURSDAY | | FRIDAY | THE PERSONS WILLIAM STATES OF THE STATES OF |
| 1972 20.25 max Deminstrational Process 25.05% max See Lones Demonstrational Process Demonstrational Process | | Squat | 50-55% max | Reverse Flys | Tubing | Squat | 75-80% max | (artissimus Pull-Down (Front) | 50_55% max |
| 19 M × 10 reps Select Over Selection Selection | | Leg Press | 50-55% max | q. | 75-80% max | Leg Press | 75-80% max | Dumbhell Incline Prace | 50.55% |
| 19 2 x 50 mtss Number Hottle Peets 75 80% mts 2 stock-time 10 stock 10 s | | Back Extension (NP) | $BW \times 10 \text{ reps}$ | Bent Over Row | 50-55 lbs | Back Extension | BW x 10 rens | Bees Car | 50.55% max |
| 19 | | Forward Jump Lunge | 10-15 lbs | Dumbbell Incline Press | 75-80% max | Side Lunde | BAR + 50 lbs | Tricens Press Down | 50.55% may |
| 2 × 50 regs Free Busker 10 to to the state 2 × 50 regs Free Busker 15 state 15 state | | Knee Extension | 50-55% max | Hammer Curl | 75-80% max | Step-Up | 50, 25 | Concentration Curl | 50.55% max |
| Packer P | | Leg Curl | 50-55% max | Triceps Kick-Back | 10-15 lbs | Standing Calf Raise | 75-80% max | Triceps Kick-Back | 5-10 lbs |
| Part 2 x 50 mess Rice Backlet 75 sets 75 sets | | Reverse Crunch (NP) | 2 x 50 reps | Wrist Carls | 20 lbs | Crunch | 2 x 50 reps | Wrist Curls(NP) | 20 lbs |
| Control Processor Special Postalation 5-10 libra Bibe Muni Stationiste 20 mins Processor Special (APP) Proce | | Weighted Crunch (NP) | 2 × 50 reps | Rice Bucket | 75 secs | Crunch With Twist | 2 x 50 reps | Rice Bucket(NP) | 45 secs |
| Forestant Spinnering (Ref) | | Bilke/Run/Stairmaster | 20 mins | Forearm Pronation | 5-10 lbs | Bike/Run/Stairmaster | 20 mins | Forearm Pronation (NP) | 5-10 lbs |
| Planetical (Series A) 2 x 10 rays Rice kercites (Series B) Rice kercites (Fig. 12 x) Rice kercites (Series B) Rice kerc | | | | Forearm Supination | 5-10 lbs | | C. C | Forearm Supination (NP) | 5-10 lbs |
| Sprinting RPIC Exercises 1 x 10 resis R x 66 yds | | | | eries | 2×10 reps | | | Plyometrics (Series B) | 2 × 10 reus |
| Sprinting Strinting Strict X 3 REPS | | | | RTC Exercises | 1 x 10 reps | | | RTC Exercises (NP) | 1 x 10 reps |
| TUESDAY THURSDAY | | | | Sprinting | 8 × 60 yds | · · · · · · · · · · · · · · · · · · · | | Sprinting | 8 x 60 yds |
| TUESDAY TUESDAY TUESDAY THURSDAY T | | POWER DAY | ETS X 8 REPS) | × | A BEDS | 6 A SEES 67 | 6 6 6 0 0 | | |
| THURSDAY THURSDAY THURSDAY THURSDAY THURSDAY Squart 80-65% max Push-Liby | ž | - Indiana | | | The state of the s | A CLERC C) | O NEFO | 1 | SAGKEPS) |
| 60-65% max Reverse F Ivs Tubing Squat 80-85% max Latissimus Poil-Bown (Front) 1 60-65% max Dommbell Benich Press 80-855 max 1 East Extension 8W x 10 reps Bleist-Low e 20-23 lbs Back Extension 8W x 10 reps Bleist Curl Bleist Curl 60-65% max Triceps Curl 80-85% max 80-85% max Sinte Lunge 5AR + 70 lbs Curl 9 2 x 50 reps Wrist Curl 1 SETS Crunch With Insist 2 x 50 reps Wrist Curl P 2 x 50 reps Rice Bucket 90-855 Crunch With Insist 2 x 50 reps Rice Educide (NP) P 2 x 50 reps Rivest Curl 5-10 lbs Silve Run Stations (NP) Plyometrics (Series B) P 2 x 50 reps Rive Educide (NP) Plyometrics (Series B) 1 x 10 reps Rice Encises (NP) P 2 x 50 reps Plyometrics (Series B) 1 x 10 reps Sprinting Plyometrics (Series B) Reverse Fys R REVERS 1 x 10 reps Sprinting Series Reverse Fys | ž | WONDAY | NO. O. A. | TUESDAY | WENT TO THE REAL PROPERTY OF THE PROPERTY OF T | THURSDAY | Or any transfer of the second | FRIDAY | |
| 60-65% max | | Squat | 60-65% max | Reverse Flys | Tubing | Squat | 80-85% max | Latissimus Pull-Down (Front) | 60-65% may |
| BW x 10 reps Bent Over Roy 60-65 lbs Brack Extension BW x 10 reps Bitteps Currel Development 60-65% max Triceps Reserved 60-65% max Tricep | | Leg Press | 60-65% max | Dumbbell Bench Press | 80-85% max | Leg Press | 80-85% max | Pichilas | 3 × 30 rens |
| Price Press Pres | | Back Extension (NP) | BW x 10 reps | Bent Over Row | 60-65 lbs | Back Extension | BW x 10 rens | Crons Cirl | 60.65% may |
| 60-65% max Biceps Curf 80-85% max Step-Up 45 lbs Standing Caff Raise 80-85% max Triceps Kick-Back 2 × 50 reps Wrist Currs 25 lbs Standing Caff Raise 80-85% max Wrist Currs 25 lbs Standing Caff Raise 80-85% max Wrist Currs 20 lbs Crurch With Twist 2 × 50 reps Rice Bucket (NP) 2 × 50 reps Rice Bucket 90 secs Crurch With Twist 2 × 50 reps Rice Bucket (NP) 2 × 50 reps Rice Bucket 90 secs Crurch With Twist 2 × 50 reps Rice Bucket (NP) 2 × 50 reps Rice Bucket 90 secs Crurch With Twist 2 × 50 reps Rice Bucket (NP) 2 × 50 reps Rice Bucket 90 secs 1 × 10 reps Rice Raise Rice | | Forward Jump Lunge | 20-25 lbs | Dumbbell Incline Press | 80-85% max | Side Lunge | BAR + 70 lbs | Tricens Press Down | 60-65% max |
| 1.5 | | Knee Extension | 60-65% max | Biceps Curl | 80-85% max | Step-Up | 45 hc | Concentration Clivi | 60.65% may |
| 2 x 50 reps | ! | Leg Cari | 60-65% max | Triceps Extension | BAR + 35 lbs | Standing Calf Raise | 80-85% max | Tricens Kick-Back | 10-15 lbc |
| Parameter Properties Proceedings Pro | | Reverse Crunch (NP) | 2 x 50 reps | Wrist Curls | 25 lbs | Crunch | 2 x 50 reps | Wrist Curls (NP) | 25 bs |
| Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 25 mins Forearm Pronation (NP) | 1. | Weighted Crunch (NP) | 2 x 50 reps | Rice Bucket | 90 secs | Crunch With Twist | 2 x 50 reps | Rice Bucket (NP) | 45 secs |
| Properties (Series A) 2 x 10 reps Properties (Series B) Properties (NP) Properties (NP | | Dike/ Kun/ Stairmaster | Smims 7 | Forearm Pronation | 5-10 lbs | Bike/Run/Stairmaster | 25 mins | Forearm Pronation (NP) | 5-10 lbs |
| RTC Exercises | | | | Forearm Supination | 5-10 lbs | | | Forearm Supination (NP) | 5-10 lbs |
| Setts X 5 REPs A Setts X 2-5 REPs A Setts DAY (3 SETS X 2-5 REPs) | | | | Pryometrics (Series A) | Z x 10 reps | - | | Plyometrics (Series B) | 2 x 10 reps |
| 1 | | | | ATC EXERCISES | | | | RTC Exercises (NP) | 1 x 10 reps |
| (3 SETS X 5 REPS) (3 SETS X 2-5 REPS) (3 SETS X 2-5 REPS) POWER DAY (3 SETS X 2-5 REPS) 70-75% max Reverse Flys Tubing Squat 85-90% max Reverse Flys 70-75% max Dumbbell Bench Press 85-90% max Leg Press 85-90% max Dumbbell Incline Press 8W x 10 reps Eent Over Row 70-75 lbs Back Extension BW x 10 reps Biceps Curl 70-75% max Hammer Curl 85-90% max Side Lurge BAR + 90 lbs Triceps Press Down 70-75% max Triceps Kick-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Curl 70-75% max Triceps Kick-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Kick-Back 2 x 60 reps Wrist Curls 35 lbs Crunch With Twist 2 x 60 reps Wrist Curls (NP) 30 mins Forearm Pronation 5-10 lbs Bitke/Run/Stairmaster 30 mins Forearm Pronation (NP) Plyometrics (Series A) 10 x 10 reps 10 x 60 yds RTC Exercises 1 x 10 reps Sprinting 10 x 60 yds | | | | phristing - | × | | | Sprinting | 9 x 60 yds |
| TUE SDAY THURSDAY THURSDAY FRIDAY 70-75% max Reverse Flys Tubing Squat 85-90% max Reverse Flys 70-75% max Dumbbell Bench Press 85-90% max Leg Press 85-90% max Dumbbell Incline Press 80-75% max Dumbbell Incline Press 85-90% max Side Lunge BAR + 90 lbs Triceps Curl 70-75% max Hammer Curl 85-90% max Side Lunge BAR + 90 lbs Triceps Curl 70-75% max Irriceps Kirck-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Curl 70-75% max Irriceps Kirck-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Curls 2 x 60 reps Wrist Curls 35 lbs Crunch 2 x 60 reps Wrist Curls (NP) 9 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Supination (NP) Plyometrics (Series A) 2 x 10 reps 1 x 10 reps 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds 1 x 10 reps 1 x 10 reps Sprinting <td>WEEK 13</td> <td>0</td> <td>×</td> <td>8</td> <td>5 REPS)</td> <td>(3 SETS X 2-4</td> <td>5 REPS]</td> <td></td> <td>S X 5 REPS)</td> | WEEK 13 | 0 | × | 8 | 5 REPS) | (3 SETS X 2-4 | 5 REPS] | | S X 5 REPS) |
| 70-75% max Dumbbell Bench Press 10-15 max Tubling Squat 85-90% max Reverse Flys 70-75% max Dumbbell Bench Press 85-90% max Leg Press 85-90% max Dumbbell Incline Press BW x 10 reps Bent Over Row 70-75 bs Back Extension BW x 10 reps Biceps Curl 30-35 lbs Dumbbell Incline Press 85-90% max Side Lunge BAR + 90 ibs Triceps Press Down 70-75% max Triceps Kick-Back 20-25 bs Standing Calf Raise 85-90% max Triceps Rick-Back 2 x 60 reps Wrist Curls 35 bs Crunch With Twist 2 x 60 reps Wrist Curls (NP) 2 x 60 reps Rice Bucket 105 secs Crunch With Twist 2 x 60 reps Rice Bucket (NP) 30 mins Forearm Supination 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Supination (NP) Plyometrics (Series A) 2 x 10 reps 1 x 10 reps 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds 10 x 60 yds Sprinting Sprinting | | MONDAY | V SOURCE VINITED COMP. PARTIE AND A SECURITY OF SECURI | TUESDAY | | THURSDAY | SURANCE | WAY TO THE POPULATION OF THE P | |
| 70-75% max Dumbbell Bench Press 85-90% max Leg Press Respondent of the Press Respectives (NP) Respectives (NP) <td>i</td> <td>Squat</td> <td>70-75% max</td> <td>Reverse Flys</td> <td>Tubing</td> <td>Squat</td> <td>85-90% max</td> <td>Raupro Flys</td> <td>Tubing</td> | i | Squat | 70-75% max | Reverse Flys | Tubing | Squat | 85-90% max | Raupro Flys | Tubing |
| BW x 10 reps Bent Over Row 70-75 lbs Back Extension BW x 10 reps Biceps Curingent 30-35 lbs Dumbbell Incline Press 85-90% max Steb-Up 45 lbs Concentration Curingent 70-75% max Triceps Kick-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Press Down 2 x 60 reps Wrist Curls 35 lbs Crunch 2 x 60 reps Wrist Curls (NP) 2 x 60 reps Rice Bucket 105 secs Crunch With Twist 2 x 60 reps Rice Bucket (NP) 30 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Supination (NP) Plyometrics (Series A) 2 x 10 reps 1 x 10 reps 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds 10 x 60 yds Sprinting Sprinting | _1 | ed Piress | 70-75% max | Dumbbell Bench Press | 85-90% max | Led Press | 85-90% max | Dumbhall Incline Proce | 70.7K9/ msv |
| 30-35 lbs Dumbbell Incline Press 85-90% max Side Lunge BAR + 90 lbs Triceps Press Down 70-75% max Triceps Kick-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Kick-Back 2 x 60 reps Wrist Curls 35 lbs Crunch 2 x 60 reps Wrist Curls (NP) 2 x 60 reps Rice Bucket 105 secs Crunch With Twist 2 x 60 reps Rice Bucket (NP) 30 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Supination (NP) Plyometrics (Series A) 2 x 10 reps 10 x 60 yds RTC Exercises (NP) Sprinting 10 x 60 yds Sprinting | 1 | Back Extension (NP) | BW x 10 reps | Bent Over Row | 70-75 lbs | Back Extension | BW x 10 rens | Bicons Circi | 70-75% may |
| 70-75% max Hammer Curi 85-90% max Step-Up 45 lbs Concentration Curi 70-75% max Triceps Kick-Back 20-25 lbs Standing Calf Raise 85-90% max Triceps Kick-Back 2 x 60 reps Wrist Curls 35 lbs Crunch 2 x 60 reps Wrist Curls (NP) 2 x 60 reps Rice Bucket 105 secs Crunch With Twist 2 x 60 reps Rice Bucket (NP) 30 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Supination (NP) Plyometrics (Series A) 2 x 10 reps 1 x 10 reps 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds Sprinting Sprinting | | Torward Jump Lunge | 30-35 lbs | Dumbbell Incline Press | 85-90% max | Side Lunge | BAR + 90 ibs | Tricens Press Down | 70-75% max |
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| 2 x 60 reps Wrist Curfs 35 lbs Crunch Z x 60 reps Wrist Curfs (NP) 2 x 60 reps Rice Bucket 105 secs Crunch With Twist 2 x 60 reps Rice Bucket (NP) 30 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Pronation (NP) Plyometrics (Series A) 2 x 10 reps Plyometrics (Series B) Plyometrics (Series B) RTC Exercises 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds Sprinting | | eg Cuyl | 70-75% max | Triceps Kick-Back | 20-25 16s | Standing Calf Raise | 85.90% max | Tricens Kick-Back | 15.20 lbe |
| 2 x 60 reps Rice Bucket 105 secs Crunch With Twist 2 x 60 reps Rice Bucket (NP) 30 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Pronation (NP) Plyometrics (Series A) 2 x 10 reps Plyometrics (Series B) Plyometrics (Series B) RTC Exercises 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds Sprinting | · · | Reverse Crunch (NP) | 2 x 60 reps | Wrist Curis | 35 lbs | Crunch | 2 x 60 rens | Wrist Curls (NP) | 35 lbc |
| 30 mins Forearm Pronation 5-10 lbs Bike/Run/Stairmaster 30 mins Forearm Pronation (NP) Plyometrics (Series A) 2 x 10 reps Plyometrics (Series B) Plyometrics (Series B) RTC Exercises 1 x 10 reps RTC Exercises (NP) Sprinting 10 x 60 yds Sprinting | | Veighted Crunch (NP) | 2 x 60 reps | Rice Bucket | 105 secs | Crunch With Twist | 2 x 60 reps | Rice Bucket (NP) | 45 secs |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | sike/Run/Stairmaster | 30 mins | Forearm Pronation | 5-10 lbs | Bike/Run/Stairmaster | 30 mins | Forearm Pronation (NP) | 5-10 lbs |
| 2 x 10 reps Plyometrics (Series B) 1 x 10 reps RTC Exercises (NP) 10 x 60 yds Sprinting | | | | Forearm Supination | 5-10 lbs | TO THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERT | TOTAL CONTRACTOR OF THE CONTRA | Forearm Supination (NP) | 5-10 lbs |
| Table 2 | | | I | Plyometrics (Series A) | 2 x 10 reps | | hirotunak | Plyometrics (Series B) | 2 x 10 reps |
| 10 x 60 yds | | | l | KIC Exercises | 1 x 10 reps | | | RTC Exercises (NP) | 1 x 10 reps |
| | | | | 30/mm | LU X bu yds | | | Sprinting | 10 x 60 yds |

| (3 SETS X 12 REPS) | | ont) 50-55% max | 40.55% may | 50.55% max | 50-55% max | 5-10 lbs | 20 lbs | 45 secs | 5-10 lbs | | | 1 × 10 reps | cut ou you | | (3 SETS X 8 KEPS) | A CONTRACTOR OF THE PROPERTY O | ĺ | | 60-65% max | 60-65% max | 10-15 lbs | 25 lbs | | | | | 1 x 10 reps | sp/ 09 × 6 | | (3 SE1S A 5 KE75) | AND AND THE PROPERTY OF THE PR | Tubing | 70-75% Max | 70-75% max | 70-75% max | 15-20 lbs | 35 lbs | | AN WARM | 2 × 10 voss | 1 x 10 reps | 10 x 60 yds | |
|---------------------|-----------|------------------------------|-------------------------|----------------|------------------------|-------------------|---------------------|---------------------|------------------------|--|--|------------------------|------------|---|---------------------|--|--|----------------------|-------------------------|---------------------|-------------------|---------------------|---------------------|-------------------------|-------------------------|---|------------------------|-------------------------|---|-------------------------|--|--|------------------------|---------------------|------------------------|-------------------|---------------------|---------------------|------------------------|--|------------------------|---------------|----------------------------|
| R DAY | FRIDAY | Latissimus Pull-Down (Front) | Dumbbell Incitite Press | Escens Curl | Concontration Circl | Teirens Kick-Back | Wrist Curls (NP) | Rice Bucket (NP) | Forearm Pronation (NP) | Forearm Supination (NP) | Plyometrics (Series B) | RTC Exercises (NP) | Sprinting | | POWER DAY (3 | FRIDAY | Latissimus Puil-Down (Front) | Push-Ups | Biceps Curl | Triceps Press Down | Tricens Kick-Back | Wrist Curis (NP) | Rice Bucket (NP) | Forearm Pronation (NP) | Forearm Supination (NP) | Plyometrics (Series B) | RTC Exercises (NP) | Sprinting | | ER DAY | FRIDAY | Reverse Flys | Dumbbell Incline Press | Trigger Down | Concentration Carl | Tricens Kick-Back | Wrist Curls (NP) | Rice Bucket (NP) | Forearm Pronation (NP) | Forearm Supination (NP) | Plyometrics (Series D) | Sprinting | Chimerus Chimerus |
| 5 REPS) | | 75-80% max | 75-80% тах | BW x 10 reps | BAK + SUIDS | 45 IDS | 2 y 50 reps | 2 x 50 reps | Zo mins | ANNA ANNA ANNA ANNA ANNA ANNA ANNA ANN | | | | | -5 REPS) | 1,5,1 | 80-85% max | 80-85% max | BW x 10 reps | BAR + 70 lbs | 45 iDS | 2 v 50 vens | 2 x 50 reps | 25 m/ns | | | | | | 2-5 REPS) | A LEE STATE OF THE PARTY OF THE | 85-90% max | 85-90% max | BW × 10 reps | MAK + 90 808 | 85,90% max | 2 x 60 rens | 2 × 60 reps | 30 mins | | | | |
| (3 SETS X 2-5 REPS) | THURSDAY | Squat | Leg Press | Back Extension | Side Lunge | Step-Up | Standing Call Kaise | Crunch With Tariet | Rike/Run/Stairmaster | | | | | | (3 SETS X 2-5 REPS) | THURSDAY | Course | Lea Press | Back Extension | Side Lunge | Step-Up | Standing Call Kalse | Crunch Mith Twict | Disco (Dun (Stairmastar | DIRE/ RUN STAIL MASIC | | | | | (3 SETS X 2 | THURSDAY | Squat | Leg Press | Back Extension | Side Lunge | Step-Up | Standing Call Raise | Cruch With Twist | Bike/Run/Stairmaster | Conductory Control of the Control of | | | |
| 5 REPS) | | Tubina | 75-80% max | 50-55 lbs | 75-80% max | 75-80% max | 10-15 lbs | 20 lbs | /5 Secs | | 5-10 lbs | 1 x 10 reps | 8 x 60 yds | | 2-5 REPS) | Average Averag | The second secon | 100ffg 80-85% max | 60-65 lbs | 80-85% max | 80-85% max | BAR + 35 lbs | 25 lbs | 70 Secs | 5-10 188 | 5-10 lbs | 2 X 10 FEDS | 9 x 60 yds | | 2-5 REPS) | AND THE RESIDENCE OF THE PARTY | Tehisa | 85-90% max | 70-75 lbs | 85-90% max | 85-90% max | 20-25 lbs | 35 IDS | 5-10 lhs | 5-10 lbs | 2 x 10 reps | 1 × 10 reps | $10 \times 60 \text{ yds}$ |
| (3 SETS X 2-5 REPS) | TUESDAY | DATE SEC E LAC | Neverse 11/2 | Regi Over Row | Dumbbell Incline Press | Hammer Curl | Triceps Kick-Back | Wrist Curls | Rice Bucket | Forearm Pronation | Forearm Supination | Pivometrics (Series A) | Sprinting | , | (3 SETS X 2 | The second secon | | Reverse Flys | Duffippel Deficit Fress | Dent Over Now | | Triceps Extension | Wrist Curls | Rice Bucket | Forearm Pronation | Forearm Supination | Plyometrics (Series A) | RTC Exercises Sprinting | 10.000 mm m m m m m m m m m m m m m m m m | (3 SETS X 2-5 REPS) | TUESDAY | SOLUTION CONTROL OF THE CONTROL OF T | Dumbbell Bench Press | Bent Over Row | Dumbbeil Incline Press | Hammer Curl | Triceps Kick-Back | Wrist Curls | Rice Bucket | Forearm Supination | Plyometrics (Series A) | RTC Exercises | Sprinting |
| TC V 17 RFPS) | ۲ . | 70 H J V W | 70-75 Max | DV-JJ /0 888A | 10.15 15. | 50-55% max | 50-55% max | 2 x 50 reps | 2 x 50 reps | 20 mins | | | | | (Sdau & A Shas or | A CALLES OF THE PERSON OF THE | de la | 60-65% max | 60-65% max | 20,25 lhs | 60-65% max | 60-65% max | 2 x 50 reps | 2 x 50 reps | 25 mins | | | | | (3 SETS X 5 REPS) | ALL CONTRACTOR OF THE PROPERTY | 703L 9L | 70-75% max | B/W x 10 reps | 30-35 lbs | 70-75% max | 70-75% max | 2 x 60 reps | 2 x 60 reps | | | | |
| | POWER DAY | | Squat | Leg Press | BACK EXTERNION (INF.) | Knee Extension | Les Curl | Reverse Crunch (NP) | Weighted Crunch (NP) | Bike/Run/Stairmaster | To construct the state of the s | | | | TO ST STREET | FONEN DA | WONDA | Squat | Leg Press | Back Extension (NP) | Knee Extension | led Carl | Reverse Crunch (NP) | Weighted Crunch (MP) | Bike/Run/Stairmaster | 1 The second of | | | | WFEE 16 POWER DAY (3.8) | - 1 | 1 C O N O N. | Squat | Back Forestion (NP) | Forward Jump Lunge | Knee Extension | Leg Carl | Reverse Crunch (NP) | Weighted Crunch (NP) | Bike/Run/Starrnasier | | | |
| | WEEK 14 | | i | | | | | | | * | - | | | | | WEER 13 | | | | | | | | | | | | | | MEEK | | | | | | | | | | | | | |

Pre-Season Period

(Spring Training)

Goals

The goals of spring training are to develop the skill level of the athlete and to prepare the athlete both mentally and physically for the upcoming season.

Flexibility

As in the hypertrophy/endurance phase. Partner stretches may be used.

Aerobic / Anaerobic

Maintenance of cardiovascular endurance continues to include running, stationary bicycle, or stairmaster for periods of 35-45 minutes, at least two times a week. Perform anaerobic training as indicated in the workout table. Rest 15-45 seconds in between sprints.

Strength

Continue strength training 3 times per week at 3 sets of varying repetitions for all exercises. Again, the POWER DAY is indicated in the workout chart. On the POWER DAYS, the exercises are to be performed explosively. The (NP) next to some exercises indicate that the exercise is not to be performed as a power exercise that day. If the suggested weight is too heavy, decrease the weight to achieve the recommended repetitions. Rest approximately 30 to 60 seconds in between sets.

Rotator Cuff (RTC) Exercises

The tubing and weighted rotator cuff exercises are performed three days a week. When choosing a desired weight, be sure the exercise can still be performed comfortably without any pain while maintaining the correct exercise technique. RTC exercises are not to be exercised to failure or "burnout". Refer to the appendix for suggested RTC exercises.

Plyometrics

Plyometric drills are performed three times a week through this phase. Refer to the appendix for suggested plyometric exercises.

Coordination / Skill

Pitchers now throw exclusively from the mound, simulating the game environment and game situations at the discretion of the pitching coach.

| MONDAY | | (3 SETS x 10 RE | | (3 SETS x 10 | REPS) |
|------------------------------|----------------|------------------------------|-------------|------------------------|-------------|
| | | WEDNESDAY | | FRIDAY | |
| Squat | 65% max | Latissimus Pull-Down (Front) | 60% max | Squat | 4.00/ |
| Leg Press | 65% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Jump Lunge | 5-10 lbs | Dumbbell Incline Press | 60% max | Step-Up | 60% max |
| Knee Extension | 65% max | Hammer Curl | 60% max | Side Lunge | 20 LBS |
| Leg Curl | 65% max | Triceps Kick-Back | 3-5 lbs | Standing Calf Raise | BAR + 15 II |
| Latissimus Pull-Down (Front) | 65% max | Back Extension | BW BW | Seated Row | 60% max |
| Dumbbell Bench Press | 65% max | Forearm Pronation | 3-5 lbs | | 60% max |
| Seated Row | 65% max | Forearm Supination | 3.5 lbs | Push Up | 25 reps |
| Biceps Curl | 65% max | RTC Exercises | | Bent Over Row | 10-20 lbs |
| Triceps Extension | BAR + 5-10 lbs | Plyometrics (Series B) | 1 x 10 reps | Biceps Curl | 60% max |
| RTC Exercises (NP) | 1 x 10 reps | Crunch | 2 x 10 reps | Triceps Press Down | 50-55 lbs |
| Plyometrics (Series A) | 2 x 10 reps | Reverse Crunch | 2 x 60 reps | RTC Exercises | 1 x 10 reps |
| Crunch (NP) | 2 x 60 reps | Sprinting | 2 x 60 reps | Plyometrics (Series A) | 2 x 10 reps |
| Weighted Crunch (NP) | 2 x 60 reps | Opt many | 10 x 60 yds | Crunch | 2 x 60 reps |
| Bike/Run/Stairmaster | 35 mins | or requirement | | Crunch With Twist | 2 x 60 reps |
| | - PERTIES | j | | Bike/Run/Stairmaster | 35 mins |

WEEK 18 POWER DAY (3 SETS x 6 REPS) (3 SETS x 12 REPS)

| MONDAY | | WEDNESDAY | | (3 SETS x 12 | KEPS) |
|------------------------------|-----------------|------------------------------|-------------|------------------------|--------------|
| Count | | | | FRIDAY | |
| Squat | 70% max | Latissimus Pull-Down (Front) | 60% max | Squat | 60% max |
| Leg Press | 70% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Jump Lunge | 10-15 lbs | Dumbbell Incline Press | 60% max | Step-Up | |
| Knee Extension | 70% max | Hammer Curl | 60% max | Side Lunge | 20 LBS |
| Leg Curl | 70% max | Triceps Kick-Back | 3-5 lbs | | BAR + 15 lbs |
| Latissimus Pull-Down (Front) | 70% max | Back Extension | BW | Standing Calf Raise | 60% max |
| Dumbbell Bench Press | 70% max | Forearm Pronation | | Seated Row | 60% max |
| Seated Row | 70% max | Forearm Supination | 3-5 lbs | Push Up | 25 reps |
| Biceps Curl | 70% max | | 3-5 lbs | Bent Over Row | 10-20 lbs |
| Triceps Extension | BAR + 10-15 lbs | RTC Exercises | 1 x 10 reps | Biceps Curl | 60% max |
| RTC Exercises (NP) | | Plyometrics (Series A) | 2 x 10 reps | Triceps Press Down | 50-55 lbs |
| Plyometrics (Series B) | 1 × 10 reps | Crunch | 2 x 60 reps | RTC Exercises | 1 x 10 reps |
| | 2 x 10 reps | Reverse Crunch | 2 x 60 reps | Plyometrics (Series B) | 2 x 10 reps |
| Crunch (NP) | 2 x 60 reps | Sprinting | 12 x 60 yds | Crunch | 2 x 60 reps |
| Weighted Crunch (NP) | 2 x 60 reps | | | Crunch With Twist | 2 x 60 reps |
| Bike/Run/Stairmaster | 40 mins | | | Bike/Run/Stairmaster | 40 mins |

| MONDAY | | (3 SETS x 15 RE | | (3 SETS x 15 | reps) |
|--------------------------------|-----------------|------------------------------|-------------|------------------------|-------------|
| MOMP | | WEDNESDAY | | FRIDAY | |
| Squat | 75% max | Latissimus Pull-Down (Front) | 60% max | Squat | F 556/ |
| Leg Press | 75% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Jump Lunge | 15-20 lbs | Dumbbell Incline Press | 60% max | Step-Up | 60% max |
| Knee Extension | 75% max | Hammer Curl | 60% max | Side Lunge | 20 LBS |
| Leg Curl | 75% max | Triceps Kick-Back | 3-5 lbs | J. | BAR + 15 lb |
| Latissimus Pull-Down (Front) | 75% max | Back Extension | BW | Standing Calf Raise | 60% max |
| Dumbbell Bench Press | 75% max | Forearm Pronation | 3-5 lbs | Seated Row | 60% max |
| Seated Row | 75% max | Forearm Supination | 3-5 lbs | Push Up | 25 reps |
| Biceps Curl | 75% max | RTC Exercises | | Bent Over Row | 10-20 lbs |
| Triceps Extension | BAR + 15-20 lbs | Plyometrics (Series B) | 1 x 10 reps | Biceps Curl | 60% max |
| RTC Exercises (NP) | 1 × 10 reps | Crunch | 2 x 10 reps | Triceps Press Down | 50-55 lbs |
| Plyometrics (Series A) | 2 x 10 reps | Reverse Crunch | 2 x 60 reps | RTC Exercises | 1 x 10 reps |
| Crunch (NP) | 2 x 60 reps | | 2 x 60 reps | Plyometrics (Series A) | 2 x 10 reps |
| Weighted Crunch (NP) | 2 x 60 reps | Sprinting | 15 x 60 yds | Crunch | 2 x 60 reps |
| Bike/Run/Stairmaster | 45 mins | | | Crunch With Twist | 2 x 60 reps |
| - over over present a constant | *J HIIIS | | | Bike/Run/Stairmaster | 45 mins |

WEEK 20 POWER DAY (3 SETS x 8 REPS) (3 SETS x 10 REPS) (3 SETS x 10 REPS)

| MONDAY | | WEDNESDAY | ······································ | FRIDAY | |
|------------------------------|----------------|--|--|------------------------|------------------------|
| Squat | 65% max | Latissimus Pull-Down (Front) | 60% max | Squat | 60% max |
| Leg Press | 65% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Jump Lunge | 5-10 fbs | Dumbbell Incline Press | 60% max | Step-Up | 20 LBS |
| Knee Extension | 65% max | Hammer Curl | 60% max | Side Lunge | BAR + 15 lbs |
| Leg Curt | 65% max | Triceps Kick-Back | 3-5 lbs | Standing Calf Raise | 60% max |
| Latissimus Pull-Down (Front) | 65% max | Back Extension | BW | Seated Row | 60% max |
| Dumbbell Bench Press | 65% max | Forearm Pronation | 3-5 lbs | Push Up | 25 reps |
| Seated Row | 65% max | Forearm Supination | 3-5 lbs | Bent Over Row | 10-20 lbs |
| Biceps Curl | 65% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 60% max |
| Triceps Extension | BAR + 5-10 lbs | Plyometrics (Series B) | 2 x 10 reps | Triceps Press Down | 50-55 lbs |
| RTC Exercises (NP) | 1 x 10 reps | Crunch | 2 x 60 reps | RTC Exercises | 1 x 10 reps |
| Plyometrics (Series A) | 2 x 10 reps | Reverse Crunch | 2 x 60 reps | Plyometrics (Series A) | 2 x 10 reps |
| Crunch (NP) | 2 x 60 reps | Sprinting | 10 x 60 vds | Crunch | 2 x 60 reps |
| Weighted Crunch (NP) | 2 x 60 reps | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 30 310 | Crunch With Twist | 2 x 60 reps |
| Bike/Run/Stairmaster | 35 mins | of the state of th | | Bike/Run/Stairmaster | 2 x ov reps 35 mins |

| I POWER DAY (3 SET | co a o ren o) | (3 SETS x 12 RE | PS) | (3 SETS x 12 | REPS) |
|------------------------------|-----------------|--|-------------|------------------------|-------------|
| MONDAY | | WEDNESDAY | | FRIDAY | |
| Squat | 70% max | Latissimus Pull-Down (Front) | 60% max | Squat | 60% max |
| Leg Press | 70% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Jump Lunge | 10-15 lbs | Dumbbell Incline Press | 60% max | Step-Up | 20 LBS |
| Knee Extension | 70% max | Hammer Curl | 60% max | Side Lunge | BAR + 15 |
| Leg Curl | 70% max | Triceps Kick-Back | 3-5 Ibs | Standing Calf Raise | 60% max |
| Latissimus Pull-Down (Front) | 70% max | Back Extension | BW | Seated Row | 60% max |
| Dumbbell Bench Press | 70% max | Forearm Pronation | 3-5 lbs | Push Up | 25 reps |
| Seated Row | 70% max | Forearm Supination | 3-5 Ibs | Bent Over Row | 10-20 lbs |
| Biceps Curl | 70% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 60% max |
| Triceps Extension | BAR + 10-15 lbs | Plyometrics (Series A) | 2 x 10 reps | Triceps Press Down | 50-55 lbs |
| RTC Exercises (NP) | 1 x 10 reps | Crunch | 2 x 60 reps | RTC Exercises | 1 x 10 reps |
| Plyometrics (Series B) | 2 x 10 reps | Reverse Crunch | 2 x 60 reps | Plyometrics (Series B) | 2 x 10 reps |
| Crunch (NP) | 2 x 60 reps | Sprinting | 12 x 60 yds | Crunch | 2 x 60 reps |
| Weighted Crunch (NP) | 2 x 60 reps | 1,000 mm 1,0 | | Crunch With Twist | 2 x 60 reps |
| Bike/Run/Stairmaster | 40 mins | | | Bike/Run/Stairmaster | 40 mins |

WEEK 22 POWER DAY (3 SETS x 4 REPS) (3 SETS x 15 REPS)

| MOND AV | | (3 SE 15 X 15 RE | £ 53 J | (3 SETS x 15 | REPS) |
|------------------------------|--|--|-------------|------------------------|--------------|
| MONDAY | 1444-1441 - 1444-1441 - 1444-1441 - 1444-1441 - 1444-1441 - 1444-1441 - 1444-1441 - 1444-1441 - 1444-1441 - 14 | WEDNESDAY | | FRIDAY | |
| Squat | 75% max | Latissimus Pull-Down (Front) | 60% max | Squat | 60% max |
| Leg Press | 75% max | Reverse Flys | Tubing | Leg Press | 60% max |
| Forward Jump Lunge | 15-20 lbs | Dumbbell Incline Press | 60% max | Step-Up | 20 LBS |
| Knee Extension | 75% max | Hammer Curl | 60% max | Side Lunge | BAR + 15 fbs |
| Leg Curf | 75% max | Triceps Kick-Back | 3-5 lbs | Standing Calf Raise | 60% max |
| Latissimus Pull-Down (Front) | 75% max | Back Extension | BW | Seated Row | 60% max |
| Dumbbell Bench Press | 75% max | Forearm Pronation | 3-5 lbs | Push Uo | 25 reps |
| Seated Row | 75% max | Forearm Supination | 3-5 lbs | Bent Over Row | 10-20 lbs |
| Biceps Curl | 75% max | RTC Exercises | 1 x 10 reps | Biceps Curl | 60% max |
| Triceps Extension | BAR + 15-20 lbs | Plyometrics (Series B) | 2 x 10 reps | Triceps Press Down | 50-55 lbs |
| RTC Exercises (NP) | 1 x 10 reps | Creach | 2 x 60 reps | RTC Exercises | 1 x 10 reps |
| Plyometrics (Series A) | 2 x 10 reps | Reverse Crunch | 2 x 60 reps | Plyometrics (Series A) | 2 x 10 reps |
| Crunch (NP) | 2 x 60 reps | Sprinting | 15 x 60 yd; | Crunch | 2 x 60 reps |
| Weighted Crunch (NP) | 2 x 60 reps | 11 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 7 | Crunch With Twist | 2 x 60 reps |
| Bike/Run/Stairmaster | 45 mins | | | Bike/Run/Stairmaster | 45 mins |

Competition Period

Goals

The goal of this period is to bring the athlete to peak performance. Flexibility, strength, power, and endurance are maintained or possibly increased to prevent tissue breakdown and subsequent injuries.

Flexibility

As in the hypertrophy/endurance phase. Partner stretches may be used.

Aerobic / Anaerobic

Maintenance of cardiovascular endurance continues to include running, stationary bicycle, or stairmaster for periods of 15-30 minutes, 2-3 times per week. Sprinting continues 2 days a week. Rest 15-45 seconds in between sprints.

Strength

For starting pitchers, sprinting workouts and weight training are incorporated into a five-day cycle to coincide with their position in the pitching rotation. The athlete is allowed to rest the day after pitching except for some preventative exercises, then performs the outlined workouts the next three days. Light throwing is allowed the day before competition. Use light weights and low intensities (e.g., 3-8 pound dumbbells) for arm exercises. For relief pitchers, the cycle will vary because of possibility of pitching back-to-back days. If the suggested weight is too heavy, decrease the weight to achieve the recommended repetitions. Rest approximately 30 to 60 seconds in between sets.

Rotator Cuff (RTC) Exercises

The tubing and weighted rotator cuff exercises are performed at least four days a week. When choosing a desired weight, be sure the exercise can still be performed comfortably without any pain while maintaining the correct exercise technique. RTC exercises are not to be exercised to failure or "burnout". Refer to the appendix for suggested RTC exercises.

Plyometrics

Plyometric drills are performed at least twice per week. Refer to the appendix for suggested plyometric exercises.

Coordination / Skill

None in this period.

| GAMEDAY | |
|------------------------|-------------|
| BEFORE PITCHING | |
| RTC Exercises (#1- #6) | 1 x 10 reps |
| AFTER PITCHING | |
| RTC Exercises (#1- #6) | 1 x 10 reps |
| Bike/Run/Stairmaster | 15-20 mins |

| RTC Exercises | 1 x 10 reps |
|------------------------|-------------|
| | 1 × 10 lebs |
| Plyometrics (Series A) | 2 x 10 reps |
| Crunch | 2 x 50 reps |
| Reverse Crunch | 2 x 50 reps |
| Sprinting | 10 x 60 yds |

| DAY 2 AFTER GAME | | |
|------------------------------|------------|--------------|
| Seated Row | 55-60% max | 2 x 10 reps |
| Latissimus Pull-Down (Front) | 55-60% max | 2 x 10 reps |
| Dumbbell Bench Press | 55-60% max | 2 x 10 reps |
| Leg Press | 55-60% max | 2 x 10 reps |
| Forward Lunge | 15 lbs | 2 x 1.0 reps |
| Hammer Curl | 55-60% max | 2 x 10 reps |
| Triceps Press Down | 45-50 lbs | 2 x 10 reps |
| Rice Bucket | 30-45 sec | |
| Bike/Run/Stairmaster | 20-30 mins | |

| DAY 3 AFTER GAME | |
|------------------------|-------------|
| Plyometrics (Series B) | 2 x 10 reps |
| Crunch | 2 x 50 reps |
| Weighted Crunch | 2 x 50 reps |
| Sprinting | 10 x 60 yds |

| DAY 4 AFTER GAM | E | |
|------------------------|-------------|-------------|
| Bent Over Row | 10-20 lbs | 2 x 10 reps |
| Reverse Flys | Tubing | 2 x 10 reps |
| Dumbbell Incline Press | 55-60% max | 2 x 10 reps |
| Squat | 55-60% max | 2 x 10 reps |
| Knee Extension | 55-60% max | 2 x 10 reps |
| Biceps Curl | 55-60% max | 2 x 10 reps |
| Triceps Kick-Back | 5 lbs | 2 x 10 reps |
| Rice Bucket | 30-45 sec | |
| RTC Exercises | 1 x 10 reps | |
| Plyometrics (Series A) | 2 x 10 reps | |
| Bike/Run/Stairmaster | 10 mins | 1 |

Active Rest Period

Goals

The goal of this period is to allow the athlete to recuperate mentally and physically from the competitive season. It is important that the athlete maintain a basic level of fitness, which can be attained through physical activities that he enjoys. Sport specific exercise (e.g. baseball, softball, throwing activities, racquet sports) should be avoided. Active rest should last between 4-6 weeks post-competition.

Flexibility

As in the hypertrophy/endurance phase.

Aerobic / Anaerobic

In order to prevent a major loss of conditioning due to inactivity, the athlete should perform activities which are enjoyable, such as golf, swimming, jogging, basketball, or aerobics. These activities should be performed for 20-45 minutes at a frequency of at least three times per week.

Strength

None in this period.

Plyometrics

None in this period.

Coordination / Skill

None in this period.

Youth, High School, and College Pitchers

While the conditioning program outlined is based upon the minor league or professional pitcher, it may be used by the younger developing pitcher. To do so, the length of the periods will need to be modified based upon the starting date and length of the competition period. Some scholastic athletes participate in more than one sport; therefore, the content and duration of each phase must be individualized to the athlete's needs.

Little research is available regarding conditioning programs for adolescents, and the topic of strength training in adolescents has been controversial. In the past, it was believed that resistance training pre-disposed skeletally immature athletes to injury and that strength gains were minimal. Now it has been proven that resistance exercise with proper technique and supervision, does not increase the risk of musculoskeletal injury. Also, it has been shown that adolescents can increase their strength. Strength gains do not occur solely by muscle fibers becoming larger. Strength increases also occur when the nervous system becomes more efficient at causing the muscle fibers to contract.

Exercises for the pre-adolescent and adolescent athlete may vary depending on age, physical maturity, and experience of each individual. Initially, the exercises are designed to gradually adapt the young athlete to the stresses of strength and conditioning programs. Light weight and high volume exercises should be performed for a variety of large muscle groups. As the athlete matures and becomes more experienced, greater weight may be used, as well as exercises for smaller muscle groups and sport specific drills.

Plyometric exercise can also be beneficial to adolescents, but this type of training needs to be monitored carefully. The quick stretch of the muscle, which helps increase muscle contraction, also places large stresses on tendons. Inflammatory conditions of the tendon or tendon insertion, such as Osgood Schlotters disease are common in adolescents; therefore, plyometrics must be used with caution. If an athlete begins to complain or unusual musculoskeletal pain after starting plyometrics, these exercises should be taken out of the athlete's conditioning program.

It is important that the adolescent's training program be supervised to insure proper lifting technique and proper progression of resistance. A 1 RM test should not be used when setting up the program. Instead, have the athlete choose a weight that he feels he can lift 10 times. If the athlete is unable to finish the set, allow time for recovery; decrease the weight by 10%, and attempt 10 repetitions with the new weight. Continue this cycle until the athlete has found his 10 RM. When beginning resistance training in the preparation period cycle 1, the athlete will decrease the weight by 10% of his 10 RM.

The following are sample periodized schedules for athletes of various levels:

| | JAN | FER | MAR | APR | MAY | NOC | JOE | AUG | SEP | OCT | NON | DEC |
|--|-----------------------|----------------------|-----------------------|-----------------------|-----|-------------|-----------------------|-----------------------|-------------|-------------|-------------|-----------------------|
| Professional Pitcher | Preparation Period | | Pre-Season Períod | Competitive Period | | | | | | Active Rest | | Preparation Period |
| High School or College | Pre-Season Period | | Competitive Period | | | Active Rest | | Preparation Period | | | | |
| 2 Sport High School Athlete Fall/Spring | Preparation Period | Pre-Season Period | Competitive Period | | | Active Rest | Preparation Period | Pre-Season Period | Competitive | | Active Rest | Preparation Period |
| College Athlete with Fall / Spring Baseball | Preparation Period | Pre-Season Period | Competitive | | - 1 | Active Rest | Preparation Period | Pre-Season Period | Competitive | | | Active Rest |

Stretching and Warm-Up

Prior to warm-up activities, the athlete must go through their stretching routine. Stretch the larger muscle groups first and then the smaller muscles. Stretch the lower body muscles before you stretch the upper body. It is also very important to stretch after your workout is complete. The post-exercise stretch lengthens the muscles back out and keeps the pitcher from becoming tight.

A proper warm-up should be performed before each workout in order to prepare the body for the activity and to minimize the risk of injury. Warm-up activities should increase blood flow to the muscles and increase the heart rate. Several different warm-up programs are acceptable, but a few suggestions will be given here.

In order to increase heart rate and core body temperature, five to ten minutes of an aerobic activity is necessary. This may include a slow jog, stationary bicycle, or a stairmaster.

To increase the blood flow to muscles, active movements must be performed by the target muscles. Each exercise should be performed for 20 to 30 seconds.

- Upper Body Warm-Up:
- Arm Circles (forward and backward)
- Slapping Your Back
- Trunk Warm-Up
- Standing Trunk Twist
- Windmill (touch the outside of each foot)
- Lateral Bends
- Lower Body Warm-Up
- Side Lunge
- Half Squat
- Heel-to-Toe Rock
- Knee Lifts

A dynamic warm-up can also be included in the general warm-up, especially if the workout will include dynamic activities. Each dynamic exercise should be performed 3 to 5 times for a distance of 20 to 30 yards. Examples of dynamic activities are:

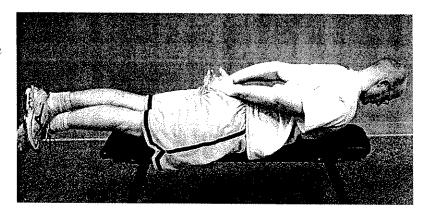
- 1. High Knees
- 2. Butt Kicks
- 3. Straight Leg Shuffle
- 4. Side Shuffle
- 5. Cariocas
- 6. Skipping (forward and backward)

Flexibility exercises should be performed immediately after the warm-up is completed.

Strengthening Exercises

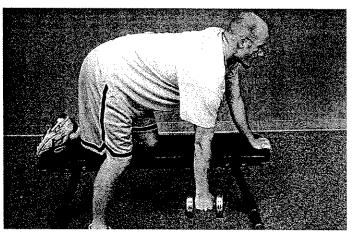
1. BACK EXTENSION

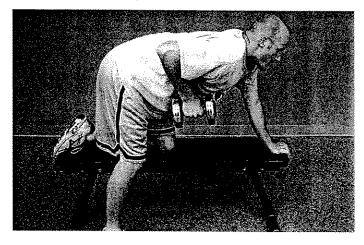
Lie on the floor or a bench face down with arms at side. Lift chest and shoulders off the floor, arching the low back.



2. BENT-OVER ROWS

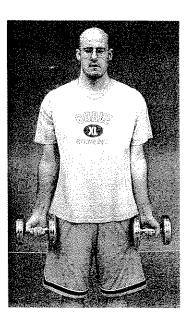
Hold a dumbbell in one hand. Kneel with opposite leg on bench and lean forward so free hand supports upper body. Allow weighted hand to straighten to floor. Pull elbow up toward the ceiling. Slowly lower.

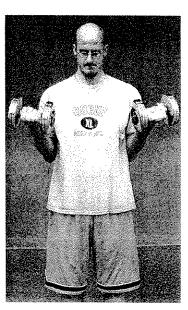




3. BICEPS CURL

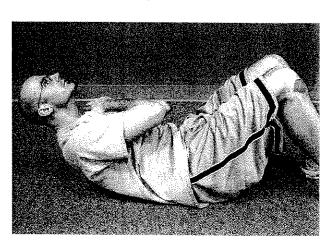
Stand with a dumbbell in each hand, palms facing in toward body. Rotate palms up as you bend your elbow and pull the weight up. Slowly lower to starting position.





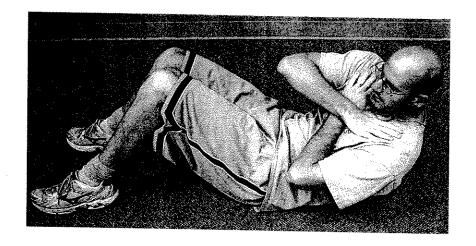
4. CRUNCHES

Lie on the floor on your back with knees bent and hands over chest. Keep chin up toward the ceiling as you raise your chest until your shoulder blades lift off the floor. Slowly lower back to floor.



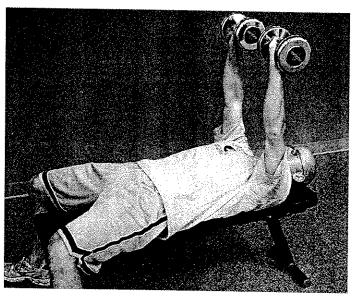
5. CRUNCH WITH TWIST

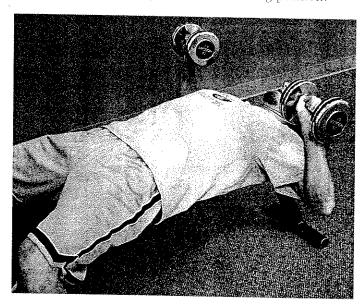
Start in the same position as for crunches. As you lift up, rotate upper body toward one side, then rotate back to center as your lower back to floor. Alternate sides.



6. DUMBBELL BENCH PRESS

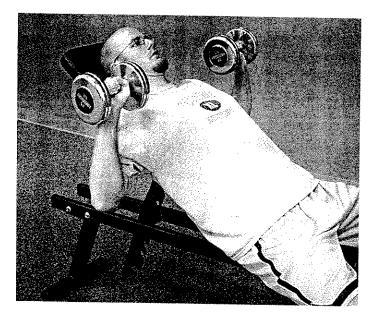
Lie on back on a bench. Hold dumbbell weights in each hand with arms up toward ceiling and elbows straight. Palms should be turned out. Allow elbows to bend so that dumbbells approach chest, then push back to starting position.

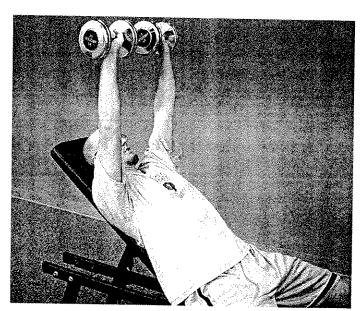




7. DUMBBELL INCLINE PRESS

Sit on an incline bench with a dumbbell in each hand. Start with weights by shoulders, palms facing forward. Press forward from shoulders until arms are straight. Slowly lower.





8. FOREARM PRONATION

Sit with forearm supported on your knee or across the corner of a table. Hold a dumbbell with your thumb pointing up toward ceiling. Rotate palm down. Return to starting position.



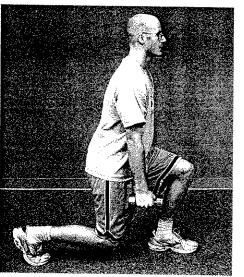
9. FOREARM SUPINATION

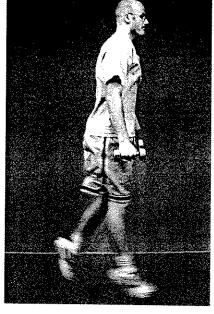
Sit with forearm supported on your knee or across the corner of a table. Start with arm in a neutral position (thumb up toward ceiling). Rotate palm up. Return to starting position.

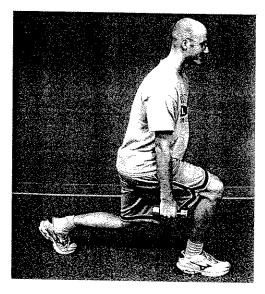


10. FOREWARD JUMP LUNGE

Take one large step forward with your left leg. Slowly lower your body straight down, allowing the back leg to bend and stopping when a 90 degree angle is reach with the front leg. Jump up and alternate legs in the air and land with the right leg forward. Repeat.

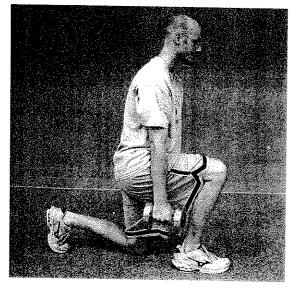






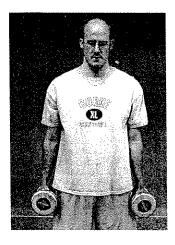
11. FORWARD LUNGE

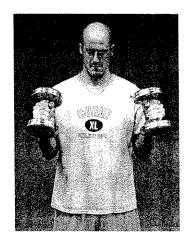
Take one large step forward with your right leg. Slowly lower your body straight down, allowing the back leg to bend and stopping when a 90 degree angle is reach with the front leg. Push body up, stepping back to the starting position. Alternate sides.



12. HAMMER CURL

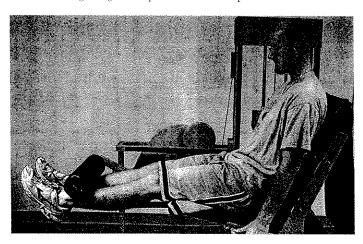
Stand with a dumbbell in each hand, palms facing in toward body. Keep palms facing the body as you bend your elbow and pull the weight up. Slowly lower to starting position.





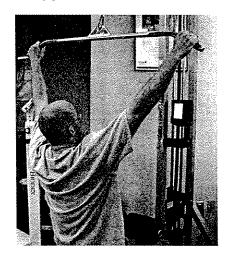
13. KNEE EXTENSION

Sit on a knee extension machine with legs behind the pad. Kick up, stopping just before your knees are locked out. Slowly lower weight. Perform this exercise in a smaller range if you experience knee pain.



14. LATISSIMUS PULL-DOWNS

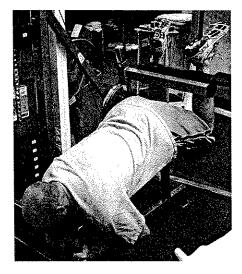
Sit on a pull down machine. Lean upper body back about 45 degrees with elbows slightly bent. Pull bar in front of chest, then return to starting position. This exercise should not be performed by pulling the bar behind the neck.



15. LEG CURL

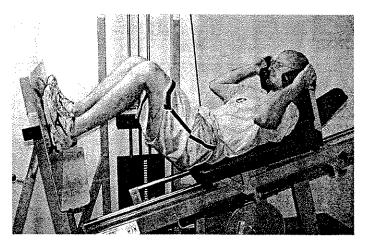
Lie face down on a leg curl machine.

Start with feet under the pad and legs straight. Lift weight by bringing heels toward the buttocks as far as is comfortable. Slowly lower weight.



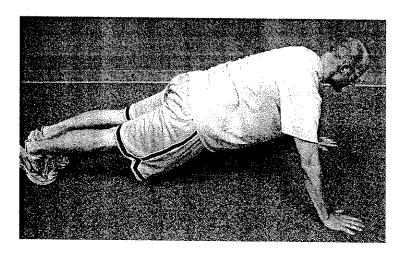
16. LEG PRESS

Lie on your back on a leg press machine. Start with your knees bent to about 90 degrees. Push back until legs are almost fully straightened, but not locked out. Slowly lower to starting position.



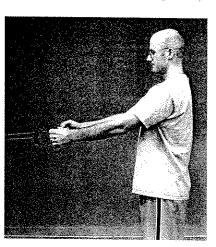
17. PUSH-UPS

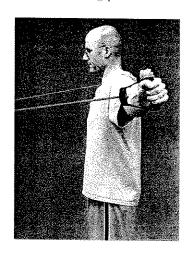
Start in the traditional push-up position with body weight supported on your hands and toes. Slowly lower body to floor, keeping your back straight. Return to starting position.



19. REVERSE FLYS

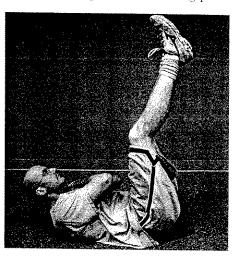
Face the direction where the tubing is coming from. Grab the tubing with arms stretched out to the wall. Keeping the arms only slightly bent, pull the tubing back to shoulder level (pinching the shoulder blades together). Return to starting position.





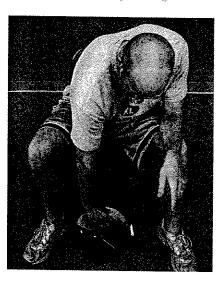
18. REVERSE CRUNCHES

Start in the same position as for crunches. Keep upper body on floor as you pull knees in toward chest. Slowly lower legs back to starting position.



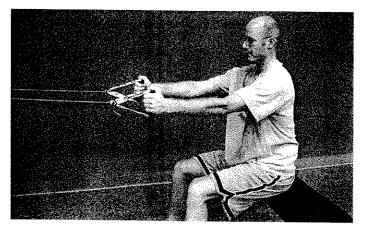
20. RICE BUCKET

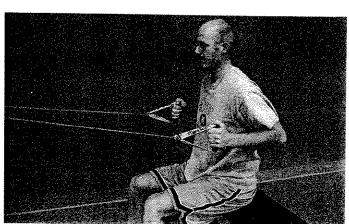
Sit with hand in bucket of dried rice filled up past your wrist. Dig hand into rice while squeezing the rice and supinating the forearm.



21. SEATED ROWS

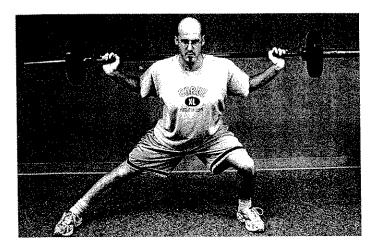
Sit on the floor or bench with knees straight. Grip the handles of a cable pulley or of tubing that is affixed in front of you with your elbows in at your side. Pull elbows back, squeezing shoulder blades together. Slowly return to starting position.





22. SIDE LUNGE

Stand with feet slightly wider than shoulder width apart. Allow feet to rotate out slightly. Shift weight over right leg, allowing right knee to bend. Return to center. Repeat to left side. Alternate sides.



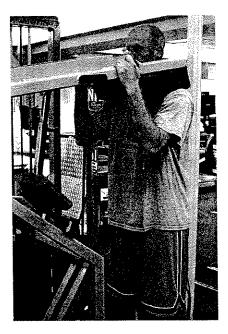
23. SQUAT

Perform a traditional squat with a barbell placed across your shoulders. Keep trunk upright during the squat. Feet should be positioned with toes pointed forward or slightly toed-out. Limit the depth of your squat if you experience knee pain.



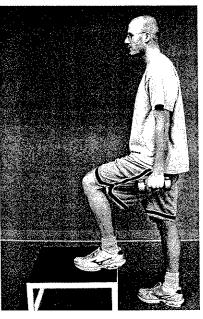
24. STANDING CALF RAISE

Stand under the padding of a calf raise machine. Raise your heels until you are on the balls of your feet. Slowly lower.



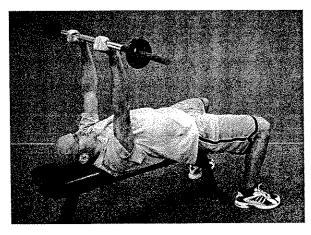
25. STEP-UP

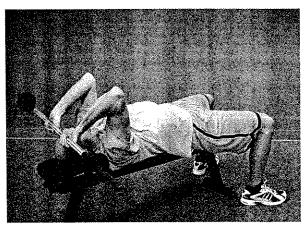
Hold a dumbbell in each hand. Step up on an 8 to 12 inch box, leading with your left leg. Step down leading with your right leg. Repeat exercise going up with your right leg and coming down on your left leg. Continue alternating sides.



26. TRICEPS EXTENSION

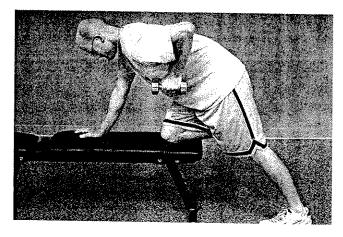
Lie back on a bench. Hold a weighted bar (EZ curl bar: NOT Olympic bar) in both hands, arms pointing up to the ceiling and palms turned away from body. Keep shoulders still as you allow elbows to bend so that the bar approaches your head. Return to the starting position.





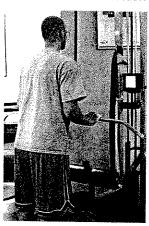
27. TRICEPS KICK-BACK

Hold a dumbbell in one hand. Kneel on a bench with the opposite knee, then lean forward from your waist and support your body weight on your free hand. Keep upper arm of weighted hand fixed to your side, and allow the elbow to bend to 90 degrees. Push hand back until elbow is straight. Slowly lower to starting position.



28. TRICEPS PRESSDOWN

Standing in front of a pull down machine, grab the bar or rope with hands close together. Bring bar down until arms are parallel to the floor. Start exercise from this position. Keeping elbows stationary, press the bar or rope down until full elbow extension. Return slowly to starting position.

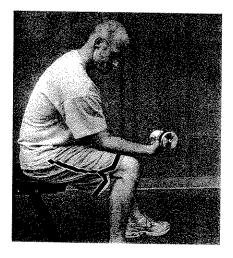


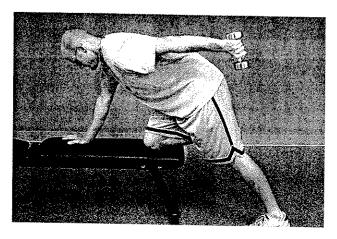


30. WRIST CURLS

Sit with forearm palm up on your knee or across the corner of a table. Holding a small dumbbell weight, start with hand pointing down toward floor. Curl wrist

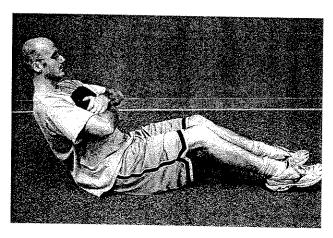
to raise weight up. Slowly lower. Can also be performed as a Reverse Wrist Curl (shown to the right).





29. WEIGHTED CRUNCH

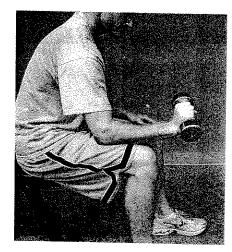
Hold a 25 to 45 lb. plate against your chest as you perform a crunch.



31. REVERSE WRIST CURLS

Sit with forearm palm down on your knee or across the corner of a table. Holding a small dumbbell weight, start with hand pointing down toward floor. Curl wrist to raise weight up.

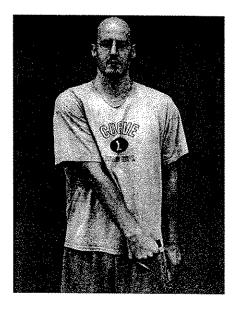
Slowly lower.

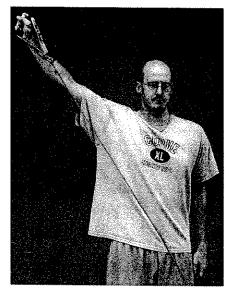


Rotator Cuff (RTC) Exercises

1. TUBING D2 PNF FLEXION

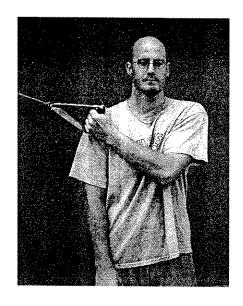
Affix surgical tubing to the floor near opposite foot. Stand facing the tubing. Involved hand will grip tubing handle across body, near opposite hip, with thumb pointing in toward hip. Rotate thumb so that it points behind you as you raise your arm toward the ceiling. Rotate thumb back in toward pocket as you return to the starting position.

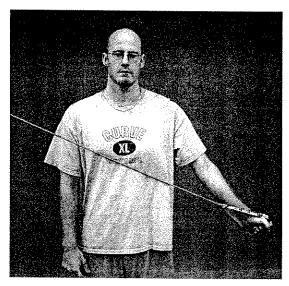




2. TUBING D2 PNF EXTENSION

Affix surgical tubing above shoulder height. Stand with back to tubing. Hold tubing in hand with arm pointed toward ceiling and thumb pointing behind you. Rotate thumb in toward pocket as you pull the tubing down toward opposite pocket. Rotate thumb back behind you as you return to the starting position.





3. TUBING ER @ 0 DEGREES OF ABDUCTION

Affix a piece of surgical tubing to the wall at elbow height. Stand with your pitching arm opposite the tubing side with shoulder abducted to 0 degrees, elbow bent to 90 degrees and hand pointing toward the tubing. Keeping elbow tucked, quickly rotate forearm until hand is pointing straight ahead, then quickly return to the starting position. Pause slightly at the starting position.





4. TUBING IR @ 0 DEGREES OF ABDUCTION

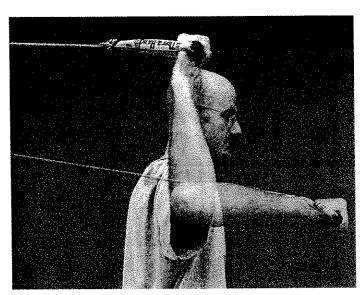
Affix a piece of surgical tubing to the wall at elbow height. Stand with your pitching arm on the tubing side with shoulder abducted to 0 degrees, elbow bent to 90 degrees and hand pointing straight ahead. Keeping elbow tucked, quickly rotate forearm until palm is facing the body, then quickly return to the starting position. Pause slightly at the starting position.





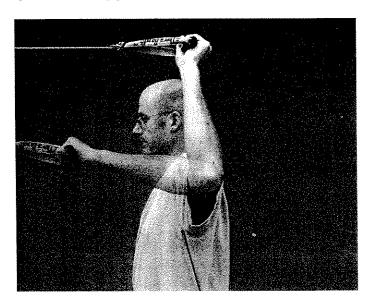
5. TUBING IR @ 90 DEGREES OF ABDUCTION

Affix a piece of surgical tubing to the wall at about head height. Stand with back to tubing, shoulder abducted to 90 degrees, elbow bent to 90 degrees, and hand pointing up to the ceiling. Keeping shoulder abducted, quickly rotate shoulder forward until forearm is parallel with the ground, then quickly return to the starting position. Pause slightly at the starting position.



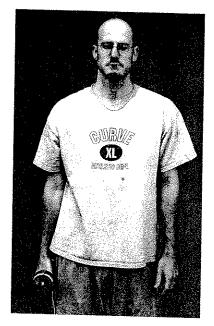
6. TUBING ER @ 90 DEGREES OF ABDUCTION

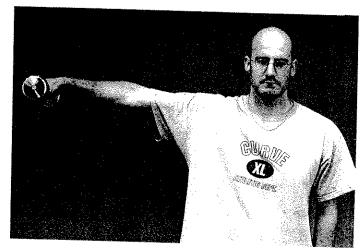
Affix a piece of surgical tubing to the wall at shoulder height. Stand facing the tubing with shoulder abducted to 90 degrees, elbow bent to 90 degrees and hand pointing straight ahead. Keeping shoulder abducted, quickly rotate shoulder until hand is pointing up to the ceiling, then quickly return to the starting position. Pause slightly at the starting position.



7. DUMBBELL LATERAL RAISE

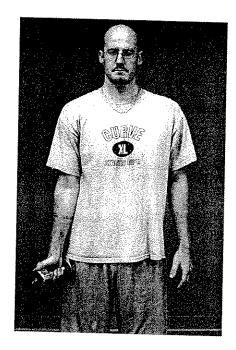
Stand with a dumbbell in each hand, palms facing in toward body. Raise arm out to side with palms facing downward, stopping at shoulder level. Slowly lower. Return to the starting position.

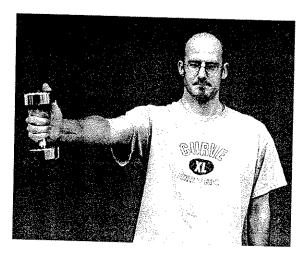




8. SUPRASPINATUS RAISE (FULL CAN)

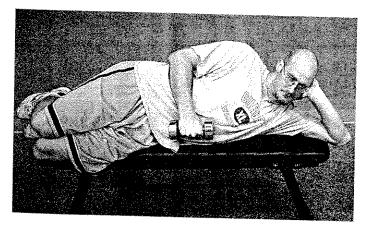
Stand with arm straight and thumb pointing 45 degrees away from body. Raise arm to shoulder level. Slowly lower.



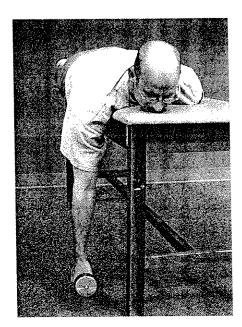


9. SHOULDER EXTERNAL ROTATION

Lie on your pitching non-throwing side. Keep the upper part of your arm against your side and bend your elbow to 90 degrees. Raise the weight up, keeping arm against your side. Slowly lower. Also perform this exercise lying on your other side.

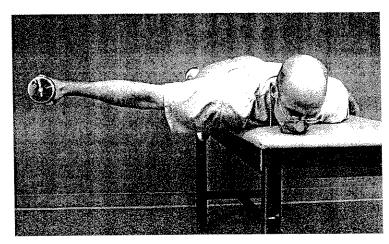






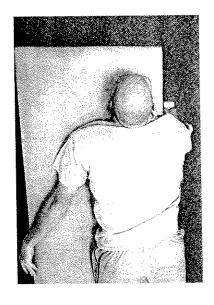
10. PRONE HORIZONTAL ABDUCTION

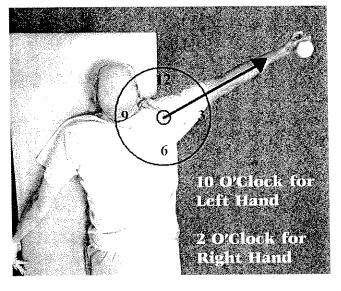
Lie on table face down with arm hanging straight to the floor, thumb facing forward. Raise arm out to the side until it is parallel to the floor. Slowly lower.



11. PRONE SHOULDER FLEXION @ 105-110 DEGREES OF ABDUCTION

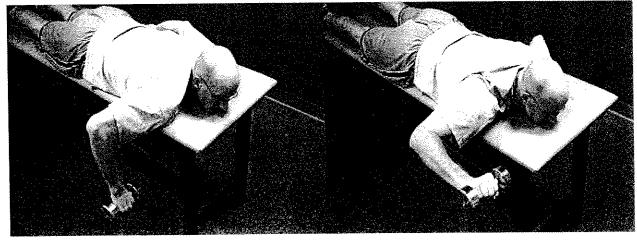
Lay on a weight bench face down. Hold a dumbbell with thumb rotated up (hitchhiker). Raise arm out to the side at an angle of 105 degrees from your side (about 2 o'clock) – slightly in front of shoulder – until arm is parallel with the floor. Lower slowly.





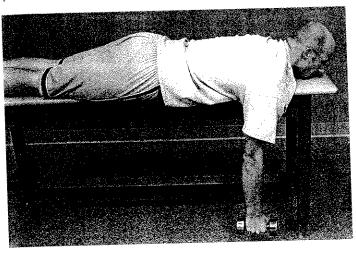
12. PRONE ROW WITH EXTERNAL ROTATION

Lie on table face down with elbow abducted to 90 degrees and hand pointing to the ground. Keeping the elbow stationary, slowlyraise the dumbbell until it is parallel to the floor. Slowly lower.



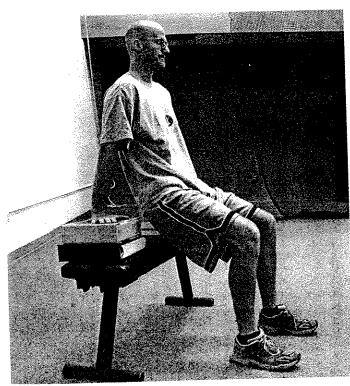
13. PRONE SHOULDER EXTENSION

Lie on table face down with arm hanging straight to the floor, thumb facing forward. Raise arm straight back until it is parallel to the floor. Slowly lower.



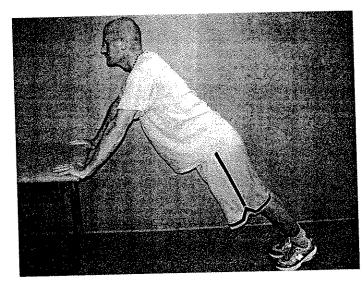
14. PRESS-UP

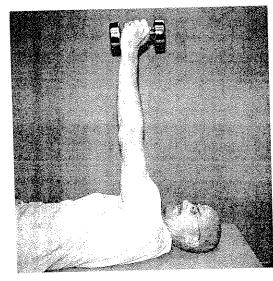
Sit on a weight bench. Set a block or thick book on both sides of you. Put hands on block and push body until elbows are fully straightened. From this position, allow the elbows to bend as you lower body toward bench, then push back up.



15. PUSH-UP WITH A PLUS

Standing in a neutral position with your hands placed on the edge of a table and arms extended, push away from the table by extending the shoulder. Do not lose contact with the table.





16. SUPINE SERRATUS PUNCH

Lie on your back with a 2-5 pound dumbbell in your hand. Outstretch your arm to full extension. Push towards the sky lifting only the shoulder off the table. Return the shoulder to the table. Repeat.

Plyometrics

Series A

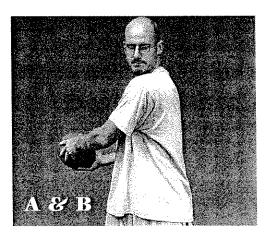
- 1. Medicine Ball Rotations
- 2. Medicine Ball Side Bends
- 3. Medicine Ball Wood Chop
- 4. Wall Dribble
- 5. 90 / 90 Throw
- 7. Two Hand Side Throw
- 9. Chest Pass

Series B

- 1. Medicine Ball Rotations
- 2. Medicine Ball Side Bends
- 3. Medicine Ball Wood Chop
- 4. Wall Dribble
- 6. Two Hand Overhead Throw
- 8. Two Hand Underhand Throw

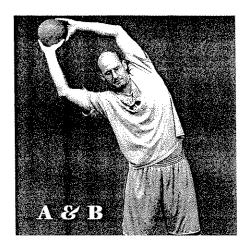
1. MEDICINE BALL ROTATIONS

Hold medicine ball out in front of you with straight arms. Turn from waist and ankles to rotate from one side, then the other.



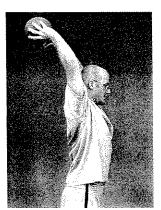
2. MEDICINE BALL SIDE BENDS

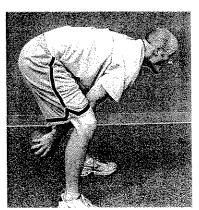
Hold medicine ball overhead with straight arms. Bend to one side, then the other.



3. MEDICINE BALL WOOD CHOP

Hold medicine ball overhead with straight arms. Stand with feet shoulder width apart. Keeping arms straight, bend at the waist, hips and knees to allow ball to pass between the legs. Return to starting position.

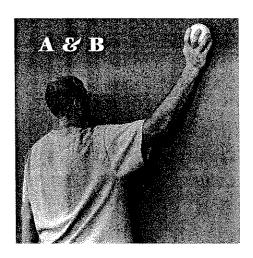




A & B

4. WALL DRIBBLE

Dribble a 1 or 2 pound medicine ball against the wall with the fingertips of one hand. Perform this exercise above the height of your head. This exercise can also be performed by dribbling in an arc.



5. 90 / 90 THROW

Stand facing a plyoback. Hold a 1 or 2 pound medicine ball in your pitching hand. Abduct the shoulder to 90 degrees, and bent the elbow to 90 degrees. Throw the ball into the plyoback using only a forearm movement. Catch the ball in the same position and repeat.

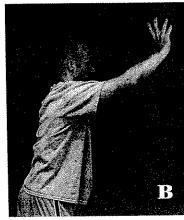




6. TWO HAND OVERHEAD THROW

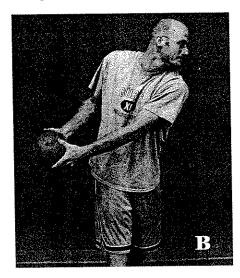
Stand facing a plyoback. Hold a medicine ball overhead with both hands. Throw the ball against the plyoback. Catch the ball overhead, allowing the ball to pull your arms back as you catch the ball.

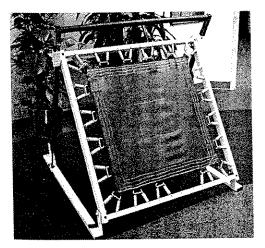




8. TWO HAND UNDERHAND THROW

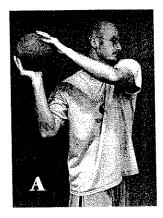
Stand facing a plyoback. Hold a medicine ball with both hands in front of you, below waist level. Bring the ball over to one side, then throw it in an underhand fashion against the plyoback. Catch the ball on the other side, then throw it again. Continue alternating sides.

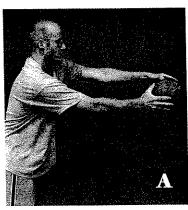




7. TWO HAND SIDE THROW

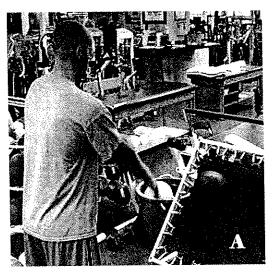
Stand facing a plyoback. Hold a small medicine ball in both hands. Bring the ball over one shoulder, then throw in a side arm fashion into the plyoback. Catch the ball on the opposite side, allowing body to turn slightly. Continue alternating sides.





9. CHEST PASS

Stand close to a plyoback, leaning forward slightly. Hold a medicine ball in both hands, at chest level, with elbows pointing out to the side.. Push ball away from body into the plyoback. Perform this exercise rapidly.



Shown to the left is a PLYOBACK (Exertools, Inc). This is referred to in some of the plyometric exercises. A plyoback is a small trampoline that is used to return the medicine ball to the athlete

Stretches

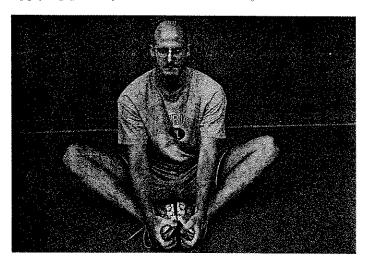
1. TRUNK ROTATION STRETCH

Lie on your back on the floor. Bend your knees up toward chest, then allow them both to fall to one side. Reach both arms over to the opposite side.



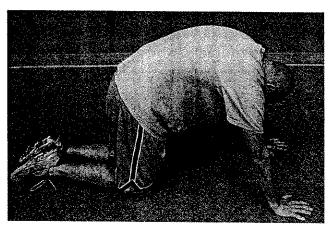
3. BUTTERFLY GROIN STRETCH

Sit on the floor with your heels together. Allow your knees to fall out to the side. Increase the stretch by applying gentle pressure downward on your knees.



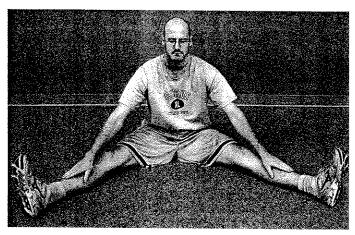
2. MAD CAT STRETCH

Get on your hands and knees on the floor. Arch your back up to the ceiling.



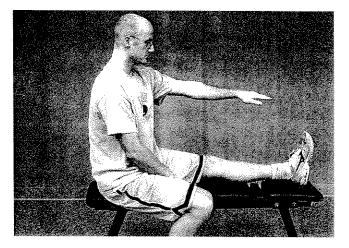
4. ADDUCTOR STRETCH

Sit on the floor with your legs spread apart in a V-position. Lean forward between your legs until you feel a stretch. This stretch can also be performed in a standing position with feet slightly wider than shoulder width apart. Lunge over to one side until you feel a stretch in the inner thigh of your opposite leg. Repeat for the other leg.



5. HAMSTRING STRETCH

Sit on the side of a bench with one leg on the bench straight in front of you and the opposite leg off the side of the bench. Lean forward from your hips, keeping your back straight, until your feel a stretch in the back of your thigh. Do not allow your knee to bend.



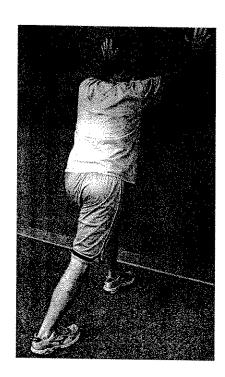
6. QUADRICEPS STRETCH

In a standing position, bring one foot up toward your buttocks. Reach back with the hand on the same side, grab your foot and pull your thigh back. Keep your trunk upright. Switch legs



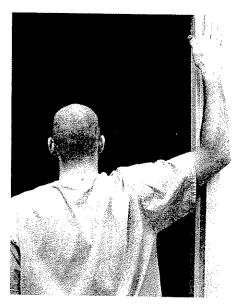
7. CALF STRETCH Stand facing a wall. Step one leg back approximately one step length. Push the heel of your back leg down as you lean forward, allowing your front leg to bend. Stop when you feel a stretch in the calf of your back leg. Also perform this stretch with your back knee slightly bent while pushing your heel

down.



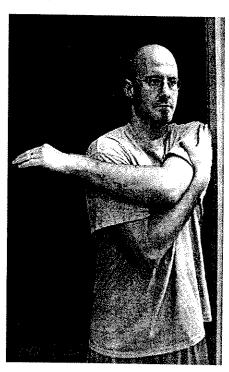
8. ANTERIOR MUSCULATURE STRETCH

Hold the corner of a wall or the inside of a door frame and step away until your arm is out away from your body at shoulder height with the elbow straight. Slowly rotate your body away from your arm until you feel a stretch in the front of your arm.



9. POSTERIOR MUSCULATURE STRETCH

Bring one arm across your chest. Apply gentle pressure at the elbow with your opposite hand to push the arm closer to your body.



Interval Throwing Program for Baseball Players: Phase I

The Interval Throwing Program (ITP) is designed to gradually return motion, strength, and confidence in the throwing arm after injury or surgery by slowly progressing through graduated throwing distances. The ITP is initiated upon clearance by the athlete's physician to resume throwing, and preformed under the supervision of the rehabilitation team (physician, physical therapist, and athletic trainer). The program is set up to minimize the chance of re-injury and emphasizes pre-throwing warm up and stretching. In development of the interval throwing program, the following factors are considered most important:

- 1. The act of throwing the baseball involves the transfer of energy from the feet through the legs, pelvis, trunk, and out the shoulder through the elbow and hand. Therefore, any return of throwing after injury must include attention to the entire body.
- 2. The chance of re-injury is lessened by a graduated progression of interval throwing.
- 3. Proper warm-up is essential.
- 4. Most injuries occur as a result of fatigue.
- 5. Proper throwing mechanics lessen the incidence of re-injury.
- 6. Baseline requirements for throwing include a pain-free range of motion of all joints involved and adequate muscle power and resistance to fatigue.

Because there is an individual variability in each throwing athlete, there is no set timetable for completion of the program. Most athletes, by nature, are highly competitive individuals and wish to return to competition at the earliest possible moment. While this is a necessary quality of all athletes, the proper channeling of the athlete's energies into a rigid, controlled throwing program is essential to lessen the chance of re-injury during the rehabilitation period. The athlete may have the tendency to want to increase the intensity of the throwing program, which could possibly increase the incidence of re-injury and may greatly retard the rehabilitation process. It is recommended to follow the program rigidly, as this will by the safest route to return to competition. During the recovery process the athlete will probably experience soreness and a dull, diffuse aching sensation in the muscles and tendons. If the athlete experiences sharp pain, particularly in the joint, stop all throwing activities until the pain ceases. If pain continues, contact your physician.

Weight Training:

The athlete should supplement the ITP with a high repetition, low weight exercise program. Strengthening should address a good balance between anterior and posterior musculature so that the shoulder will not be predisposed to injury. Special emphasis must be given the posterior rotator cuff musculature for any strengthening program. Weight training will not increase throwing velocity, but will increase the resistance of the arm to fatigue and injury. Weight training should only be done after your throwing is completed. Remember not to neglect exercises that will increase flexibility and range of motion about your shoulder, elbow, and hip joints. The athlete should also allow a recovery period in between throwing and weight training. A weight training pattern or routine should be stressed at this point as a "maintenance program." This pattern can and should accompany the athlete into and throughout the season as a deterrent to further injury.

Individual Variability:

The ITP is designed so that each level is achieved without pain or complications before the next level is started. This sets up a progression that a goal is achieved prior to advancement instead of advancing according to a specific time frame. Because of this design, the ITP may be used for different levels of skill and abilities, ranging from high schoolers to professionals. The reasons for being in the ITP will vary from person to person. **Examples:** 1: One athlete may wish to use alternate throwing days throwing with or without using weights in between. 2: Another athlete may have to throw every third or fourth day due to pain or swelling.

"Listen to your body-it will tell you when to slow down." Again, completion of the steps of the ITP will vary from person to person. There is no set timetable in terms of days to completion.

Warm-up:

Jogging increases blood flow to the muscles and joints thus increasing their flexibility and decreasing the chance of re-injury. Since the amount of warm-up will vary from person to person, the athlete should jog until developing a light sweat, then progress to the stretching phase.

Stretching:

Since throwing involves all muscles in the body, all muscle groups should be stretched prior to throwing. This should be done in a systematic fashion beginning with the legs and including the trunk, back neck, and arms. Continue with capsular stretches and a t-bar range of motion exercises.

Throwing Mechanics:

A critical aspect of the ITP is maintenance of proper throwing mechanics throughout the advancement. The use of the Crow-Hop method simulates the throwing act, allowing emphasis of the proper body mechanics. This throwing method should be adopted from the onset of the ITP. Throwing flat-footed encourages improper body mechanics, placing increased stress on the throwing arm and, therefore, predisposing the arm to re-injury. The pitching coach and sports biomechanist (if available) may be valuable allies to the rehabilitation team with their knowledge of throwing mechanics.

Components of the Crow-Hop method are first a hop, then a skip, followed by the throw. The velocity of the throw is determined by the distance, whereas the ball should have only enough momentum to travel each designed distance. Again, emphasis should be placed upon proper throwing mechanics when the athlete begins phase two (Throwing off the mound or throwing from his respective position) to decrease chance of re-injury.

Throwing:

Using the Crow-Hop method, the athlete should begin warm-up throws at a comfortable distance (approximately 30-45 ft) and then progress to the distance indicated for that phase (refer to Table 1). The object of each phase is for the athlete to be able to throw the ball without pain the specific number of feet (45ft., 60ft., 90ft., 120ft., 150ft., 180ft.) 75 times at each distance. After the athlete can throw 180 ft. 50 times without pain he will be ready for throwing off the mound or return to this respective position (step 14). At this point, full strength and confidence should be restored in the athlete's arm. It is important to stress the Crow-Hop method and proper mechanics in for each throw. Just as the advancement to this point has been gradual and progressive, the return to unrestricted throwing must follow the same principles. A pitcher should first only throw fastballs at 50%, progressing to 75%, and 100%. At this time, he may start more stressful pitches such as breaking balls. The position player should simulate game situation again progressing from 50%-75%-100%. Once again, if an athlete has increased pain, particularly at the joint, the throwing program should be backed off and re-advanced as tolerated, under redirection of the rehabilitation team.

Batting:

Depending on the type of injury that the athlete has, the time of return to batting should be determined by the physician. It should be noted that the stress placed upon the arm and shoulder in tee batting motion are very different from the throwing motion. Return to unrestricted use of the bat should also follow the same progressive guidelines. Begin with dry swings progressing to hitting off the tee, then soft toss, and finally live pitching.

Summary:

In using the Interval Throwing Program (ITP) in conjunction with structured rehabilitation program, the athlete should be able to return to full competition status, minimizing any chance of re-injury. The program and its progression should be modified to meet the specific needs of each individual athlete. A comprehensive program consisting of a maintenance strength and flexibility program, appropriate warm-up and cool-down, proper pitching mechanics, and progressive throwing and batting will assist the baseball player in returning safely to competition.

| 45' Phase | | | 60' Phase | ě | | 90' Phase | 94 | | 120' Phase | se | |
|-----------|-------------------|--|-----------|---|--|-----------|---------------|---|------------|-----------------|--|
| Step 1: | ଝିଛିଠରିଲି | Warm-up throwing 45 (25 throws) Rest 5-10 minutes Warm-up throwing 45 (25 throws) | Step 3. | (A) (C) (C) (A) (A) | Warm-up throwing 60' (25 throws) Rest 5-10 minutes Warm-up throwing 60' (25 throws) | Step 5: | E 6 0 8 9 | Warm-up throwing 90' (25 throws) Rest 5-10 minutes Warm-up throwing 90' (25 throws) | Step 7: | (L) (C) (B) (S) | Warm-up throwing 120° (25 throws) Rest 5-10 minutes Warm-up throwing 120° (25 throws) |
| Step 2: | Î Û 1 Û 6 C Û B F | Warm-up throwing 45' (25 throws) Rest 5-10 minutes Warm-up throwing 45' (25 throws) Rest 5-10 minutes Warm-up throwing 45' (25 throws) | Step 4: | $\widehat{\mathfrak{T}}$ $\widehat{\mathfrak{G}}$ $\widehat{\mathfrak{G}}$ $\widehat{\mathfrak{G}}$ $\widehat{\mathfrak{G}}$ $\widehat{\mathfrak{G}}$ $\widehat{\mathfrak{G}}$ $\widehat{\mathfrak{F}}$ | Warm-up throwing 60° (25 throws) Rest 5-10 minutes Warm-up throwing 60° (25 throws) Rest 5-10 minutes Warm-up throwing 60° (25 throws) | Step 6: | £ 6 5 6 6 8 8 | Warm-up throwing 90 (25 throws) Rest 5-10 minutes Warm-up throwing 90 (25 throws) Rest 5-10 minutes Warm-up throwing 90 (25 throws) | S 69 8. | Î 0 1 6 0 0 8 9 | Warm-up throwing 120 (25 throws) Rest 5-10 minutes Warm-up throwing 120' (25 throws) Rest 5-10 minutes Warm-up throwing 120' (25 throws) |

| | Warm-up throwing | 120' (25 throws) | Rest 5-10 minutes | Warm-up throwing | 120' (25 throws) | Warm-up throwing | 120' (25 throws) | Rest 5-10 minutes | Warm-up throwing | 120' (25 throws) | Rest 5-10 minutes | Warm-up throwing | 120' (25 throws) | |
|------------|------------------|--------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|-------------------|------------------|------------------|--|
| ase | æ | $\widehat{\omega}$ | ô | $\widehat{\Box}$ | ш | Â | 8 | () | | ũ | ũ. | <u> </u> | Î | |
| 120' Phase | Step 7: | | | | | Step 8: | | | | | | | | |
| | | | | | | | | | | ,,,,, | | ,,,,, | , | |
| | | | | | | | | | | | | | | |

| 150' Phase | 283 | | 180' Phase | se | |
|------------|-----|-------------------|------------|------------------|-------------------|
| Step 9: | A) | Warm-up throwing | Step 11: | A) | Warm-up throwing |
| | (a) | 150' (25 throws) | | <u>@</u> | 180' (25 throws) |
| | 0 | Rest 5-10 minutes | | Û | Rest 5-10 minutes |
| | 0 | Warm-up throwing | | â | Warm-up throwing |
| | Û | 150' (25 throws) | | ω | 180' (25 throws) |
| Step 10: | A) | Warm-up throwing | Step 12: | Ð | Warm-up throwing |
| | â | 150' (25 throws) | | ති | 180' (25 throws) |
| | 0 | Rest 5-10 minutes | | 6 | Rest 5-10 minutes |
| | ā | Warm-up throwing | | $\widehat{\Box}$ | Warm-up throwing |
| | Ê | 150' (25 throws) | | ίω | 180' (25 throws) |
| | ũ | Rest 5-10 minutes | | û | Rest 5-10 minutes |
| | Ô | Warm-up throwing | | (5 | Warm-up throwing |
| | Î | 150' (25 throws) | | Ŧ | 180' (25 throws) |

| Step 13: | A) | Warm-up throwing | Step 14: |
|----------|--------------------|--|----------------------------------|
| | ගි | 180' (25 throws) | Return to respective position or |
| | 0 | Rest 5-10 minutes | progress to Step 14 below |
| | â | Warm-up throwing | |
| | (Li) | 180' (25 throws) | |
| | Œ | Rest 5-10 minutes | |
| | Î | Warm-up throwing | |
| | Ŧ | 180' (20 throws) | |
| | ~ | Rest 5-10 minutes | |
| | () | Warm-up throwing | |
| | $\widehat{\Sigma}$ | 15 throws progressing from 120' to 90' | 120' to 90' |

Throwing program should be performed every other day, unless otherwise specified by your physician or rehabilitation specialist.

| Groun | nd Ti | Flat Ground Throwing | Flat Ground Throwing | und Tl | rowing |
|----------|--|---|-------------------------------|----------|---|
| Step 14: | A | Warm-up throwing | Step 15: | Θ | Warm-up throwing |
| | <u>a</u> | Throw 60' (10-15 throws) | | <u>@</u> | Throw 60' (10-15 throws) |
| | Ô | Throw 90' (10 throws) | | () | Throw 90' (10 throws) |
| | â | Threw 120 (10 throws) | | Ô | Throw 120' (10 throws) |
| | ŵ | Throw 60' (flat ground) using pitching mechanics (20-30 throws) | | ω | Throw 60' (flat ground) using pitching mechanics (20-30 throws) |
| | - WILLIAM TO THE TANK | | - A LINE ALL A VOICE BE VIS V | Ú. | Throw 60'-90' (10-15 throws) |
| | | | | G | Throw 60' (flat ground) using pitching mechanics (20-30 throws) |

| Progress to Phase II. Throwing Off the Mound | |
|--|----------|
| | |
| | Mound |
| | che |
| | Off |
| | Throwing |
| | _ |
| | Phase |
| | 9 |
| | |

Interval Throwing Program Starting Off the Mound: Phase II

STAGE ONE: FASTBALL ONLY

Step 1: Interval Throwing

15 throws off mound at 50%

Step 2: Interval Throwing

30 throws off mound at 50%

Step 3: Interval Throwing

45 throws off mound at 50%

Step 4: Interval Throwing

60 throws off mound at 50%

Step 5: Interval Throwing

30 throws off mound at 50%

Step 6: 30 throws off mound at 75%

45 throws off mound at 50%

Step 7: 45 throws off mound at 75%

15 throws off mound at 50%

Step 8: 60 throws off mound at 75%

STAGE TWO: FASTBALL ONLY

Step 9: 45 throws off mound at 75%

15 throws in batting practice

Step 10: 45 throws off mound at 75%

30 throws in batting practice

Step 11: 45 throws off mound at 75%

45 throws in batting practice

STAGE THREE

Step 12: 30 throws off mound at 75%: Warm-Up

15 throws off mound at 50%: Breaking Balls

45-60 throws in batting practice (fastballs only)

Step 13: 30 throws off mound at 75%

30 Breaking Balls

30 throws in batting practice

Step 14: 30 throws off mound at 75%

60-90 throws in batting practice--25% breaking balls

Step 15: Simulated Game: Progressing by 15 throws per workout

(Use interval throwing to 120' Phase as warm-up)

All throwing off the mound should be done in the presence

of your pitching coach to stress proper throwing mechanics.

(Use speed gun to aid in effort control)

Youth Baseball Interval Throwing Program

30' Phase

C)

D)

E)

F)

G)

H)

Rest 10 minutes

45' (25 throws)

Rest 10 minutes

45' (25 throws)

Warm-up throwing

Warm-up throwing

The youth baseball interval throwing program parallels the interval throwing program in returning the youth baseball player to a graduated progression of throwing distances. Warm-up and stretching should be performed prior to throwing.

60' Phase

| 00 | * | | | **** | |
|---------|-----|------------------|--------------------|------|------------------|
| Step 1: | A) | Warm-up throwing | Step 5: | A) | Warm-up throwing |
| | B) | 30' (25 throws) | | B) | 60' (25 throws) |
| | C) | Rest 15 minutes | | C) | Rest 15 minutes |
| | D) | Warm-up throwing | | D) | Warm-up throwing |
| | E) | 30' (25 throws) | | E) | 60' (25 throws) |
| Step 2: | A) | Warm-up throwing | Step 6: | A) | Warm-up throwing |
| | B) | 30' (25 throws) | | B) | 60' (25 throws) |
| | C) | Rest 10 minutes | | C) | Rest 10 minutes |
| | D) | Warm-up throwing | | D) | Warm-up throwing |
| | E) | 30' (25 throws) | | E) | 60' (25 throws) |
| | F) | Rest 10 minutes | | F) | Rest 10 minutes |
| | G) | Warm-up throwing | | G) | Warm-up throwing |
| | H) | 30' (25 throws) | | H) | 60' (25 throws) |
| 45' Ph | ase | | 90 [,] Ph | ase | |
| Step 3: | A) | Warm-up throwing | Step 7: | A) | Warm-up throwing |
| | B) | 45' (25 throws) | | B) | 90' (25 throws) |
| | C) | Rest 15 minutes | | C) | Rest 15 minutes |
| | D) | Warm-up throwing | | D) | Warm-up throwing |
| | E) | 45' (25 throws) | | E) | 90' (25 throws) |
| Step 4: | A) | Warm-up throwing | Step 8: | A) | Warm-up throwing |
| | B) | 45' (25 throws) | | B) | 45' (25 throws) |

C)

D)

E)

F)

Rest 10 minutes

Rest 10 minutes

90' (25 throws)

Warm-up throwing

Warm-up throwing 90' (25 throws)

Maximum Repetition Chart

| MAX REPS | (RM) | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------|-----|-----|-----|-----|-----|----------|-----|-----|--------------|-----|-----|--------------|--------------|
| % 1RM | | 90% | 87% | 85% | 83% | 80% | 77% | 75% | 70% | 67% | 65% | 60% | 55% | 50% |
| LOAD (lbs) | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 |
| | 10 | 9 | 9 | 9 | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 6 | 6 | 5 |
| | 15 | 14 | 14 | 13 | 13 | 12 | 12 | 12 | 11 | 11 | 10 | 9 | 8 | 8 |
| | 20 | 18 | 17 | 17 | 17 | 16 | 15 | 15 | 14 | 13 | 13 | 12 | 11 | 10 |
| | 25 | 23 | 23 | 22 | 21 | 21 | 20 | 19 | 18 | 19 | 17 | 15 | 14 | 13 |
| | 30 | 27 | 26 | 26 | 25 | 24 | 23 | 23 | 21 | 20 | 20 | 18 | 17 | 15 |
| | 35 | 33 | 32 | 30 | 30 | 29 | 28 | 27 | 25 | 26 | 23 | 21 | 19 | 18 |
| | 40 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 28 | 27 | 26 | 24 | 22 | 20 |
| | 45 | 42 | 41 | 39 | 38 | 37 | 36 | 35 | 32 | 34 | 30 | 27 | 25 | 23 |
| | 50 | 45 | 44 | 43 | 42 | 40 | 39 | 38 | 35 | 34 | 33 | 30 | 28 | 25 |
| | 55 | 51 | 50 | 48 | 47 | 46 | 44 | 42 | 39 | 41 | 37 | 33 | 30 | 28 |
| | 60 | 54 | 52 | 51 | 50 | 48 | 46 | 45 | 42 | 40 | 39 | 36 | 33 | 30 |
| | 65 | 60 | 59 | 57 | 55 | 54 | 52 | 50 | 46 | 49 | 44 | 39 | 36 | 33 |
| | 70 | 63 | 61 | 60 | 58 | 56 | 54 | 53 | 49 | 47 | 46 | 42 | 39 | 35 |
| | 75 | 70 | 68 | 65 | 64 | 62 | 60 | 58 | 53 | 56 | 50 | 45 | 41 | 38 |
| | 80 | 72 | 70 | 68 | 66 | 64 | 62 | 60 | 56 | 54 | 52 | 48 | 44 | 40 |
| | 85 | 79 | 77 | 74 | 72 | 71 | 68 | 65 | 60 | 64 | 57 | 51 | 47 | 43 |
| | 90 | 81 | 78 | 77 | 75 | 72 | 69 | 68 | 63 | 60 | 59 | 54 | 50 | 45 |
| | 95 | 88 | 86 | 83 | 81 | 79 | 76 | 73 | 67 | 71 | 64 | 57 | 52 | 48 |
| | 100 | 90 | 87 | 85 | 83 | 80 | 77 | 75 | 70 | 67 | 65 | 60 | 55 | 50 |
| | 105 | 98 | 95 | 91 | 89 | 87 | 84 | 81 | 74 | 79 | 70 | 63 | 58 | 53 |
| | 110 | 99 | 96 | 94 | 91 | 88 | 85 | 83 | 77 | 74 | 72 | 66 | 61 | 55 |
| | 115 | 107 | 104 | 100 | 98 | 95 | 92 | 89 | 81 | 86 | 77 | 69 | 63 | 58 |
| | 120 | 108 | 104 | 102 | 100 | 96 | 92 | 90 | 84 | 80 | 78 | 72 | 66 | 60 |
| | 125 | 116 | 113 | 109 | 106 | 104 | 100 | 96 | 88 | 94 | 84 | 75 | 69 | 63 |
| | 130 | 117 | 113 | 111 | 108 | 104 | 100 | 98 | 91 | 87 | 85 | 78 | 72 | 65 |
| | 135 | 126 | 122 | 117 | 115 | 112 | 108 | 104 | 95 | 101 | 90 | 81 | 74 | 68 |
| | 140 | 126 | 122 | 119 | 116 | 112 | 108 | 105 | 98 | 94 | 91 | 84 | 77 | 70 |
| | 145 | 135 | 131 | 126 | 123 | 120 | 116 | 112 | 102 | 109 | 97 | 87 | 80 | 73 |
| | 150 | 135 | 131 | 128 | 125 | 120 | 116 | 113 | 105 | 101 | 98 | 90 | 83 | 75 |
| | 155 | 144 | 140 | 135 | 132 | 129 | 124 | 119 | 109 | 116 | 104 | 93 | 85 | 78 |
| | 160 | 144 | 139 | 136 | 133 | 128 | 123 | 120 | 112 | 107 | 104 | 96 | 88 | 80 |
| | 165 | 153 | 149 | 144 | 140 | 137 | 132 | 127 | 116 | 124 | 111 | 99 | 91 | 83 |
| | 170 | 153 | 148 | 145 | 141 | 136 | 131 | 128 | 119 | 114 | 111 | 102 | 94 | 85 |
| | 175 | 163 | 158 | 152 | 149 | 145 | 140 | 135 | 123 | 131 | 117 | 105 | 96 | 88 |
| | 180 | 162 | 157 | 153 | 149 | 144 | 139 | 135 | 126 | 121 | 117 | 108 | 99 | 90 |
| | 185 | 172 | 167 | 161 | 157 | 154 | 148 | 142 | 130 | 139 | 124 | 111 | 102 | 93 |
| | 190 | 171 | 165 | 162 | 158 | 152 | 146 | 143 | 133 | 127 | 124 | 114 | 105 | 95 |
| | 195 | 181 | 176 | 170 | 166 | 162 | 156 | 150 | 137 | 146 | 131 | 117 | 107 | 98 |
| | 200 | 180 | 174 | 170 | 166 | 160 | 154 | 150 | 140 | 134 | 130 | 120 | 110 | 100 |
| | 205 | 191 | 185 | 178 | 174 | 170 | 164 | 158 | 144 | 154 | 137 | 123 | 113 | 103 |
| | 210 | 189 | 183 | 179 | 174 | 168 | 162 | 158 | 147 | 141 | 137 | 126 | 116 | 105 |
| | 215 | 200 | 194 | 187 | 183 | 178 | 172 | 166 | 151 | 161 | 144 | 129 | 118 | 108 |
| | 220 | 198 | 191 | 187 | 183 | 176 | 169 | 165 | 154 | 147 | 143 | 132 | 121 | 110 |
| | 225 | 209 | 203 | 196 | 191 | 187 | 180 | 173 | 158 | 169 | 151 | 135 | 124 | 113 |
| | 230 | 207 | 200 | 196 | 191 | 184 | 177 | 173 | 161 | 154 | 150 | 138 | 127 | 115 |
| | 235 | 219 | 212 | 204 | 200 | 195 | 188 | 181 | 165 | 176 | ļ | | | } |
| | 240 | | 209 | 204 | 199 | 192 | 185 | · | | | 157 | 141 | 129 | 118 |
| | | 216 | | + | | -i | <u> </u> | 180 | 168 | 161 | 156 | 144 | 132 | 120 |
| | 245 | 228 | 221 | 213 | 208 | 203 | 196 | 189 | 172 | 184 | 164 | 147 | 135 | 123 |
| | 250 | 225 | 218 | 213 | 208 | 200 | 193 | 188 | 175 | 168 | 163 | 150 | 138 | 125 |

Maximum Repetition Chart

| MAX REPS | (RM) | 4 | 5 | 6 | ブ | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|
| % 1RM | | 90% | 87% | 85% | 83% | 80% | 77% | 75% | 70% | 67% | 65% | 60% | 55% | 50% |
| LOAD (lbs) | 255 | 237 | 230 | 222 | 217 | 212 | 204 | 196 | 179 | 191 | 171 | 153 | 140 | 128 |
| | 260 | 234 | 226 | 221 | 216 | 208 | 200 | 195 | 182 | 174 | 169 | 156 | 143 | 130 |
| | 265 | 246 | 239 | 231 | 225 | 220 | 212 | 204 | 186 | 199 | 178 | 159 | 146 | 133 |
| | 270 | 243 | 235 | 230 | 224 | 216 | 208 | 203 | 189 | 181 | 176 | 162 | 149 | 135 |
| | 275 | 256 | 248 | 239 | 234 | 228 | 220 | 212 | 193 | 206 | 184 | 165 | 151 | 138 |
| | 280 | 252 | 244 | 238 | 232 | 224 | 216 | 210 | 196 | 188 | 182 | 168 | 154 | 140 |
| | 285 | 265 | 257 | 248 | 242 | 237 | 228 | 219 | 200 | 214 | 191 | 171 | 157 | 143 |
| | 290 | 261 | 252 | 247 | 241 | 232 | 223 | 218 | 203 | 194 | 189 | 174 | 160 | 145 |
| | 295 | 274 | 266 | 257 | 251 | 245 | 236 | 227 | 207 | 221 | 198 | 177 | 162 | 148 |
| | 300 | 270 | 261 | 255 | 249 | 240 | 231 | 225 | 210 | 201 | 195 | 180 | 165 | 150 |
| | 305 | 275 | 265 | 259 | 253 | 244 | 235 | 229 | 214 | 204 | 198 | 183 | 168 | 153 |
| | 310 | 279 | 270 | 264 | 257 | 248 | 239 | 233 | 217 | 208 | 202 | 186 | 171 | 155 |
| | 315 | 284 | 274 | 268 | 261 | 252 | 243 | 236 | 221 | 211 | 205 | 189 | 173 | 158 |
| | 320 | 288 | 278 | 272 | 266 | 256 | 246 | 240 | 224 | 214 | 208 | 192 | 176 | 160 |
| | 325 | 293 | 283 | 276 | 270 | 260 | 250 | 244 | 228 | 218 | 211 | 195 | 179 | 163 |
| | 330 | 297 | 287 | 281 | 274 | 264 | 254 | 248 | 231 | 221 | 215 | 198 | 182 | 165 |
| | 335 | 302 | 291 | 285 | 278 | 268 | 258 | 251 | 235 | 224 | 218 | 201 | 184 | 168 |
| | 340 | 306 | 296 | 289 | 282 | 272 | 262 | 255 | 238 | 228 | 221 | 204 | 1.87 | 170 |
| | 345 | 311 | 300 | 293 | 286 | 276 | 266 | 259 | 242 | 231 | 224 | 207 | 190 | 173 |
| | 350 | 315 | 305 | 298 | 291 | 280 | 270 | 263 | 245 | 235 | 228 | 210 | 193 | 175 |
| | 355 | 320 | 309 | 302 | 295 | 284 | 273 | 266 | 249 | 238 | 231 | 213 | 195 | 178 |
| | 360 | 324 | 313 | 306 | 299 | 288 | 277 | 270 | 252 | 241 | 234 | 216 | 198 | 180 |
| | 365 | 329 | 318 | 310 | 303 | 292 | 281 | 274 | 256 | 245 | 237 | 219 | 201 | 183 |
| | 370 | 333 | 322 | 315 | 307 | 296 | 285 | 278 | 259 | 248 | 241 | 222 | 204 | 185 |
| | 375 | 338 | 326 | 319. | 311 | 300 | 289 | 281 | 263 | 251 | 244 | 225 | 206 | 188 |
| | 380 | 342 | 331 | 323 | 315 | 304 | 293 | 285 | 266 | 255 | 247 | 228 | 209 | 190 |
| | 385 | 347 | 335 | 327 | 320 | 308 | 296 | 289 | 270 | 258 | 250 | 231 | 212 | 193 |
| | 390 | 351 | 339 | 332 | 324 | 312 | 300 | 293 | 273 | 261 | 254 | 234 | 215 | 195 |
| | 395 | 356 | 344 | 336 | 328 | 316 | 304 | 296 | 277 | 265 | 257 | 237 | 217 | 198 |
| | 400 | 360 | 348 | 340 | 332 | 320 | 308 | 300 | 280 | 268 | 260 | 240 | 220 | 200 |
| | 405 | 365 | 352 | 344 | 336 | 324 | 312 | 304 | 284 | 271 | 263 | 243 | 223 | 203 |
| | 410 | 369 | 357 | 349 | 340 | 328 | 316 | 308 | 287 | 275 | 267 | 246 | 226 | 205 |
| | 415 | 374 | 361 | 353 | 344 | 332 | 320 | 311 | 291 | 278 | 270 | 249 | 228 | 208 |
| | 420 | 378 | 365 | 357 | 349 | 336 | 323 | 315 | 294 | 281 | 273 | 252 | 231 | 210 |
| | 425 | 383 | 370 | 361 | 353 | 340 | 327 | 319 | 298 | 285 | 276 | 255 | 234 | 213 |
| | 430 | 387 | 374 | 366 | 357 | 344 | 331 | 323 | 301 | 288 | 280 | 258 | 237 | 215 |
| | 435 | 392 | 378 | 370 | 361 | 348 | 335 | 326 | 305 | 291 | 283 | 261 | 239 | 218 |
| | 440 | 396 | 383 | 374 | 365 | 352 | 339 | 330 | 308 | 295 | 286 | 264 | 242 | 220 |
| | 445 | 401 | 387 | 378 | 369 | 356 | 343 | 334 | 312 | 298 | 289 | 267 | 245 | 223 |
| | 450 | 405 | 392 | 383 | 374 | 360 | 347 | 338 | 315 | 302 | 293 | 270 | 248 | 225 |
| | 455 | 410 | 396 | 387 | 378 | 364 | 350 | 341 | 319 | 305 | 296 | 273 | 250 | 228 |
| | 460 | 414 | 400 | 391 | 382 | 368 | 354 | 345 | 322 | 308 | 299 | 276 | 253 | 230 |
| | 465 | 419 | 405 | 395 | 386 | 372 | 358 | 349 | 326 | 312 | 302 | 279 | 256 | 233 |
| | 470 | 423 | 409 | 400 | 390 | 376 | 362 | 353 | 329 | 315 | 306 | 282 | 259 | 235 |
| | 475 | 428 | 413 | 404 | 394 | 380 | 366 | 356 | 333 | 318 | 309 | 285 | 261 | 238 |
| | 480 | 432 | 418 | 408 | 398 | 384 | 370 | 360 | 336 | 322 | 312 | 288 | 264 | 240 |
| | 485 | 437 | 422 | 412 | 403 | 388 | 373 | 364 | 340 | 325 | 315 | 291 | 267 | 243 |
| | 490 | 441 | 426 | 417 | 407 | 392 | 377 | 368 | 343 | 328 | 319 | 294 | 270 | 245 |
| | 495 | 446 | 431 | 421 | 411 | 396 | 381 | 371 | 347 | 332 | 322 | 297 | 272 | 248 |
| | 500 | 450 | 435 | 425 | 415 | 400 | 385 | 375 | 350 | 335 | 325 | 300 | 275 | 250 |



American Sports Medicine Institute

1. Another aspect of a baseball pitcher that needs to be addressed is the biomechanics of his pitching delivery. Proper mechanics, in combination with proper total body conditioning, gives the pitcher the best possible opportunity to avoid injuries and physically excel. One way for the ASMI to assist pitchers in the understanding of baseball pitching injuries is to give you the opportunity to have us analyze your pitching mechanics in our biomechanics laboratory in Birmingham, Alabama.

- The biomechanical evaluation will be administered using the reflective markers, infrared cameras, and motion analysis software.
- Your evaluation movements will be run through a computer program developed at ASMI. The computer program will determine the exact kinematic motions of your delivery.
- Your kinematics will be compared to the kinematics of our database of elite pitchers.
- You will receive a packet including your written evaluation with our comments concerning the efficiency of your pitching delivery.

You will also be videotaped during the evaluation with our Kodak high-speed video cameras. Each of these cameras records your motion at 500 frames per second (standard video is 30 frames per second). The video will be copied to a VHS or a CD-R and mailed to you along with your evaluation. You will also be videotaped using a regular camcorder so your motion can be seen at real speed. From this video, we will capture still photos at various instances during your delivery. This video and these photos will also be sent to you along with your evaluation.

2. ASMI also offers individual, group, and/or team strength and conditioning programs during the year that are available to the public at the ASMI facility in Birmingham, Alabama. The number of pitching related injuries to young pitchers is growing at an alarming rate. As one of the premier sports medicine institutions in the country, we believe that it is our responsibility to offer our expertise to the public in matters such as this. By teaching young pitchers how to condition and strengthen their bodies, we hope to assist in the longevity of their pitching careers. Our programs have been designed according to the general conditioning guidelines presented by the National Strength and Conditioning Association. Our programs are tailored to be specific for baseball pitchers according to the forces and torques placed on the shoulder and elbow. The goal is to increase core strength, as well as the strength, stability, and endurance of the shoulder and elbow joints.

To find out about scheduling an evaluation and/or the cost, or to inquire about the dates and cost of the pitcher's strength and conditioning programs, please contact ASMI at (205) 918-0000 or visit www.asmi.org.