



# **Velocity Program**

## **Level I**

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## Introduction

No doubt pitchers with more speed see more success. Everyone wants it but not everyone knows how to go about it. Drills are great ways to add speed. Timing of what, when and how many drills should be done is a technique only elite pitching coaches know how to coach.

Pitchers should spend the most time on speed drills during their off season training. This is when you have the most time to make gains and have plenty of time to improve control before games. It's very difficult to improve speed and maintain control.

This program will help you make the big push in the off season to add velocity. What you will also learn is how you can do things year round to continuously add speed. Technique is the easiest way to add speed year round but pitchers who strength training will see the most increase in speed. By following strength training program like the one included in this velocity program, will help pitchers become better and stronger athletes. Strong bodies produce the most power for increasing pitching speed without suffering from injuries.

The goal of this velocity program is to teach pitchers how to add healthy speed that will not lead to career ending injuries. Being persistent in your technique and working off the field to become stronger is the proven safe way to improve pitching velocity.

Before we really begin, find the average speed for your age using the speed chart. This chart is true to the students I have personally coached over 13 years. I have included ages 7-18 with ranges and averages. Speed typically improves after physical maturity. Aiming to be 50 mph before first high schools season is the only solid speed milestone I push my pitchers to reach.

## Average Pitching Speed By Age

Age	Range	Average
7	25-40 mph	33 mph
8	25-44 mph	36 mph
9	25-47 mph	38 mph
10	33-49 mph	41 mph
11	36-52 mph	43 mph
12	38-54 mph	45 mph
13	41-57 mph	48 mph
14	43-59 mph	50 mph
15	45-67 mph	53 mph
16	48-67 mph	55 mph
17	50-67 mph	58 mph
18	53-67 mph	60 mph

# What Determines Your Pitching Speed

## Techniques/Mechanics

Technique is the starting point to increase velocity. Great technique means getting all of your body parts to work together efficiently. Good technique should feel effortless. With a bad technique, pitchers fight their own motions and work extra hard just to have average speed. Good technique also helps pitchers be durable. Durability means the pitcher can last complete games without showing signs of fatigue or loss of control. Pitchers with great technique can even gain velocity the longer they pitch.

Some of the drills included in this program develop good mechanics and technique. Do not skip over these drills or injuries could develop. For a little more detail, here is the footwork needed to create a motion that can produce speed.

### *Footwork for Speed*

For right handed pitchers:

Right foot - shoelaces towards the catcher for the first six inches of the drag. Stay up on big toe and never on the bottom of the cleats once drag begins. Drag should be close to the power line.

Left foot - Land with toe pointed towards a right handed batter or towards the catcher with the knee in the direction of the target. Pitcher should also land with knee over ankle, striking with heel first or landing mid-foot.

The stride should be equal to height so the knee can land over the ankle.

## **Strength**

This is the biggest factor in speed development. The DI college pitchers throwing in the mid 60's or faster follow very intense weight lifting programs. Until an athlete is about 14, they do not need intense weight training. In fact, most 14 year olds do not have the basic strength to begin real weight training. Younger pitchers should focus on functional movements such as proper bodyweight squats, lunges, pushups and planks. Minimum requirement for my pitchers is to complete a 2 minute plank.

The workout included in this program focuses on functional movement. Pitchers who have imbalances and weaknesses will see speed improvement with the strength training program alone. It is very important to not skip over the workout part of this program.

## **Age/Hormones/Puberty**

Age and growth are really the final deciders for speed development. Younger girls typically do not begin to gain muscle until they are age 12-14. Athletes younger than 12 should focus on technique and improving balance. Trying to add speed to girls before their bodies are ready is just creating more problems that could lead to serious injuries. Hormones will determine when a girl can really begin to gain muscle.

# How to Lose Speed

## Improper Warm Up

Not paying attention to warm up drills can create bad habits that prevent good mechanics. All lingering bad habits are developed during the warmup routine. *Watch this video:*

[The Do's and Don'ts of your PreGame/Pre Practice Routine](#)

## Early Specialization

Focus on become athletes, not softball players. Specializing too early can cause pitchers to create imbalances and become more prone to injuries. Repetitive motions wear down muscles. Playing year round makes shoulders, knees and ankles weaker. I always encourage girls to go out for the volleyball teams. Volleyball and softball have a lot of overlap but more focus on the legs and core allowing the shoulders to take a little break.

Any other sport or activity that can improve the overall athleticism and coordination of the pitcher will help the pitcher be more successful.

## **Pre Velocity Program**

Before you begin this program, perform the following fitness test to determine if the athlete is ready to add speed.

**Athletes should score 12 out of 15 for this test to be physically ready to begin velocity training.**

**If athlete does not score above a 12, begin the strength training program and retest every 4 weeks until they pass.**

## **CoachataClick At Home Fitness Test**

### **#1 FLEXIBILITY - SIT AND REACH**

**You Need:** measuring tape, adhesive tape

**Set Up:** Tape the measuring tape to the floor. Place one piece of tape about 24 inches long across the measuring stick and at a right angle to it at the 15 inch mark

**Test:** Have the athlete then sit shoeless with the measuring stick between the legs with its zero end toward the body, the feet 12 inches apart, the toes pointed upward, and the heels nearly touching the edge of the taped line at the 15 inch mark. Have the athlete slowly reach forward with both hands as far as possible on the measuring stick, holding the position momentarily. To get the best stretch, the athlete should exhale and drop the head between the arms when reaching. Be sure the athlete keeps the hands adjacent to each other and does not lead with one hand. The fingertips should remain in contact

**Attempts:** 3

### **RESULTS**

3 = More than 21 inches

2 = 20-17 inches

1 = 16-13 inches

0 = Less than 12 inches

## **#2 STABILITY - TABLE TEST**

**Body Part:** Core (Area from top of knees to bottom of rib cage)

**You Need:** board, and a tester/recorder

**Test:** The athlete will get in a quadruped position with the board parallel to the spine in between the knees and in line with the head. The athlete will then attempt to bring the right elbow and the right knee together. The athlete will then attempt to bring the left elbow and the left knee together. The side that is in motion is the side that is being tested and the knee, hand of the opposite side must maintain contact with the floor for a high score.

**Attempts:** 3

### **RESULTS**

3 = the athlete performs a correct unilateral repetition

2 = if the athlete cannot perform a unilateral connection, then the athlete can then attempt to bring the right elbow to the left knee, and then the left elbow to the right knee

1 = if the athlete is unable to perform either the unilateral or opposite sides together

0 = any pain is experienced

## **#3 DEEP SQUAT**

**Body Part:** Shoulders, scapular region, and thoracic spine, hips, knees, and ankles

**You Need:** wooden dowel or broom handle

**Test:** The dowel being held overhead will require symmetrical mobility and stability of the shoulders, scapular region and the thoracic spine. The pelvis and core must establish stability and control throughout the entire movement to achieve the full squat.

**Attempts:** 3

### **RESULTS**

3 = upper torso is parallel with tibia or toward vertical, femur below horizontal, knees are aligned over feet, dowel aligned over feet.

2 = upper torso is parallel with tibia or toward vertical, femur is below



horizontal, knees are aligned over feet, dowel is aligned over feet, heels are elevated

1= tibia and upper torso are not parallel, femur is not below horizontal, knees are not aligned over feet, lumbar flexion is noted

0= any pain is experienced

#### **#4 SHOULDER FLEXIBILITY**

**Body Part:** Shoulder

**You Need:** measuring tape

**Set Up:** First measure the athlete's hand length by measuring the distance from the distal wrist crease to the tip of the longest digit.

**Test:** The athlete will stand with the feet together and make a fist with each hand, thumbs inside the fingers. The athlete then simultaneously reaches one fist behind the neck and the other behind the back. The athlete will perform this test with the right hand on top of the left hand three times and then alternate the hand positioning through raising the left over the top of the right.

Use the measurement of the athlete's hand length for scoring this test.

**Attempts:** 3

#### **RESULTS**

3 = Fists are within one hand length

2 = Fists are within one and a half hand lengths

1= Fists are not within one and half hand lengths

0 = any pain is experienced

## #5 PUSH UP TEST

**Body Part:** Upper Body

**You Need:** hand towel (for softball only), and a recorder

**Set Up:** Place hand towel parallel to the body and placed directly under the torso

**Test:** Start with hands shoulder width apart and elbows and body straight. The softball player will make contact with the hand towel; the baseball player must make touch the chest to the floor. The athlete may only pause in the up position and as many repetitions are performed within two minutes.

**Attempts:** 1

### RESULTS

3 = > 40

2 = 39-30

1 = 19-17

0 = < 16

Record Results:

Test	Result
#1	
#2	
#3	
#4	
#5	
Total	

*\*Fitness Test - Less than 12/15 score, begin workout schedule and repeat test every 4 weeks until reaching a score of 12 or better.*

## Strength Training Workout

Exercises	Pre-Season	In-Season	Summer Season	Off Season
<b>Range of Motion</b>				
Ground Base Mobility	3 Days per week	1-3 Days per week	2-3 Days per week	3-5 Days per week
Spiderman Walks	1 Set	1 Set	1 Set	1 Set
Reverse Walking Lunges	10-20 Reps	10-20 Reps	10-20 Reps	10-20 Reps
<b>Strength Training</b>				
Split Squats Squats	3-4 Days per week	1 Day per week	2-3 Days per week	3-5 Days per week
Pistol Box Squats	1-3 Sets	1 Sets	2-3 Sets	3-5 Sets
Single Leg Deadlift with W	10-15 Reps	15 Reps	10 Reps	10-15 Reps
Sprinter Sit Ups				
<b>Circuits</b>				
Push Up Circuit	1-3 Days per week	2-3 Days per week	2-5 Days per week	1-2 Days per week
Hip Circuit	1-2 Sets	1 Set	1-3 Sets	1-2 Sets
Planks	8-15 Reps	10-15 Reps	10 Reps	15 Reps

# Velocity Improving Drills

Velocity improving drills are divided into 3 categories:

1. **Technique Drills:** Used to improve pitching mechanics that build speed.
2. **Power Drills:** Focus on the power motions that lead to maximum speed. Most of the drills will focus on developing the 3 power motions.

## *Power Motions*

- Push/Stride and Glove Side – Using the entire body to drive off the mound. Look for complete knee extension and toe pointing. Throw glove at the target and the higher the glove, the higher the knee will raise. Try to raise knee at or above knee level.
- Landing – Landing strong and balanced is the key to transferring power from the leg drive into the upper body. Land with knee over ankle with toe and knee in the direction of the target.
- Push and Pull – Once the stride leg lands, pushing back hard while pulling arm down will generate the bulk of the speed.
- Forearm Fire - The pull down phase should feel like you're tucking your elbow into your hip. Once your elbow is tucked, the palm will be up towards the sky. Forearm fire is a strong flexion of the forearm towards the target. This is also called “internal rotation.”

3. **Speed Drills:** Teaches pitchers to move arms and legs faster

## **Where to Begin Velocity Program**

- Take fitness test
- Begin workouts immediately
- Begin technique drills immediately
- Begin Arm Care program immediately
- Score 12/15 or better on fitness test to begin Power and Speed Drills
- Complete 4 weeks of workouts, 4 weeks of arm care, and score 12/15 on fitness test to begin long toss (In Off Season Only)

## Annual Drill Schedule

<b>Drills</b>	<b>Pre-Season</b>	<b>In-Season</b>	<b>Summer Season</b>	<b>Off Season</b>
<b>Technique Drills</b>				
Flying K Drill	3-5 Days per Week	2-3 Days per Week	3-5 Days per Week	3-5 Days per Week
Walk Throughs	20-30 Reps	20-30 Reps	20-30 Reps	20-30 Reps
Windmill				
<b>Power Motions</b>				
Load and Explode	3 Days per week	0-2 Days per Week	3 Days per week	3-5 Days per Week
Lift	One Drill Per Power Motion	One Drill Per Power Motion	One Drill Per Power Motion	One Drill Per Power Motion
Windmill With Hip Rotations	15-20 Reps or Until Fatigue	10-15 Reps or Until Fatigue	15-20 Reps or Until Fatigue	15-20 Reps or Until Fatigue
	Perform at the end of pitching practice	Perform at the end of pitching practice	Perform at the end of pitching practice	Perform at the end of pitching practice
<b>Speed Drills</b>				
Run In's	2 Days per week	0-1 Days per week	2 Days per week	3 Days per week
Rapid Fire	20-30 Reps or Until Fatigue	20-30 Reps or Until Fatigue	20-30 Reps or Until Fatigue	20-30 Reps or Until Fatigue

## Bonus Workout and Drills

### Long Toss

Instead of trying to reinvent the long toss program, use this program developed by the experts and personal friends of mine at JaegerSports.

Learn from USA Women's Softball Pitcher Monica Abbott:

[https://coachtube.com/course\\_lesson/softball-pitching-velocity-program/jaeger-sports-monica-abbott-jband-long-toss-demo/8412663](https://coachtube.com/course_lesson/softball-pitching-velocity-program/jaeger-sports-monica-abbott-jband-long-toss-demo/8412663)

Here is the link to the complete program PDF file:

<https://www.jaegersports.com/j-bands-exercises-workout/>

### Arm Care

Shoulder Care Program should be performed 4-5 days per week year round using 3-5 pound weights.

1. [Shoulder Internal Rotation](#)
2. [Shoulder Shrugs](#)
3. [Shoulder Flexion](#)
4. [Shoulder External Rotation](#)
5. [Shoulder Horizontal Abduction](#)
6. [Shoulder Abduction](#)

Bonus Drills				
Long Toss	0 Days per week	0 Days per week	0 Days per week	Only Off Season

Arm Care	4-5 Days	4-5 Days	4-5 Days	4-5 Days
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