

BALLISTIC TRAINING

FOR **PITCHERS**

A GET STARTED GUIDE FOR SMART
WEIGHTED BALL PROGRAMMING



**BALLISTIC TRAINING FOR PITCHERS:
A Get Started Guide for Smart
Weighted Ball Programming**

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BOOK INFORMATION AND DISCLAIMERS

Consult a physician before starting any new workout regimen. This information is presented as a template only and not a specific recommendation for any individual athlete.

The book should be undertaken only by physically mature athletes who are medically cleared to throw.

Driveline Baseball will not be held responsible for injuries that happen as a result of following this or any other workout program. By voluntarily following this program, you agree to hold both Driveline Baseball, its owners and employees harmless.

All athletes should seek medical advice before beginning this workout program. If you are under the age of 18, seek parental or guardian consent before starting this program.

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DISTRIBUTED FREELY!**

If you paid a single dollar for this, please get a refund—and tell us (support@drivelinebaseball.com ) where you purchased it.

WHO SHOULD DO THIS PROGRAM? WHO SHOULD NOT?

This program is designed for biological-ly mature high school aged pitchers and up. As a general rule of thumb, we recommend the program in this book for 14 year olds who have a solid base of throwing and sound mechanics.

It is also recommended to put athletes through a detailed Functional Movement Screen to detect any functional deficiencies and asymmetries the athlete may have.

Importance of Screening

If you have an athlete with extreme deficiencies, we recommend addressing these with mobility and stability exercises and then re-testing on a regular schedule. If you do not know whether or not you or your athletes possess mobility deficits, investing in a comprehensive screen from a physical therapist is an inexpensive way to learn.

Consider it an investment in the length of your career.

Arm Injuries

Any athlete that has recently undergone a significant throwing arm injury needs to first finish any prescribed physical therapy and complete a physical therapist's throwing program all before starting this program.

You must be medically cleared to pitch.

We have a free 31 day [Return to Throwing Program](#) that is a more gradual on-ramp to address any underlying arm fitness issues post-PT which you can bring to your PT or consulting physician for guidance and clearance.

DO NOT DO THIS PROGRAM IF:

- 1 You are younger than physiologically 14 or pre-pubescent (use [Hacking the Kinetic Chain—Youth](#) instead)
- 2 You are not medically cleared to pitch (use your PT program or give them our [Return to Throwing Program](#))

Do not skip a program created by your doctor or physical therapist in favor of starting either our Return to Throwing Program or this On-Ramping Program.



HOW TO GET THE MOST FROM THIS PROGRAM

If you want to have the most success with the program, follow these guidelines:

1 Do the program as it is laid out.

Find 8 weeks to on-ramp yourself well.

If you find yourself panicking because you NEED VELOCITY FAST, there are hundreds of people on the internet who will let you buy something to scratch that itch.

Your actual results may vary.

Velocity creation and improved performance is a deliberate, slow process with many weeks of self-doubt and despair.

2 Do the program exclusively.

Resist the urge to mix and match. Resist the urge to “do more” simply because you feel great.

At the end of 8 weeks, you want your arm to feel great and to feel like you are ready for more work.

HOW TO TRAIN BALLISTICALLY... BADLY

“If a little is great, and a lot is better, then way too much is just about right!”

—Mae West

The overwhelming mistake we see when coaches and athletes encounter velocity programs is the tendency to do too much too fast.

Driveline’s programming works because it is a blend of work AND recovery. Results do not come from either in isolation.

3 Common Mistakes with Velocity Training and This Program

1

Doing this on-ramp program in addition to other velocity programs.

This is too much work. We wrote our program to be done by itself. Other programs are to be done by themselves.

Mixing them doesn’t give you the best of both worlds. It gives you the worst. You will be overworked and unrested. You are massively increasing your risk of both seeing a decline in velocity and injury.

2

Doing this on-ramp program in addition to playing games.

If you are playing games, do our in-season starter program.

There are three states for a pitcher: competing, training and resting. Mixing any of the three together likely lessens your results.

If you are competing, do not train for velocity with this or any spreadsheet program.

If you are regularly throwing in games *and* want to train for velocity, you are risking that your in-game performance suffers, your injury risk increases, or both.

Getting to the season and realizing you (or your team) needs more velocity is a mistake in planning committed six months prior.

Our best advice: play out the season and train with us when it is over.

Or stop playing and start training [↗](#). It is your career.

3

Doing this on-ramp without warming up or not doing the prescribed recovery work.

Warm Up. Train. Recover.

The “real work” is not done when you are throwing the ball. The real work is done on your rest days.

There is a specific reason warm-up and recovery drills are over 50% of the program time. They matter.

CASE STUDY

Unnamed Team Fails at Weighted Ball Training

A professional baseball team implemented a weighted ball program 3 times a week with some of its pitchers:

Warm-Up: Catch Play

Throwing Program: 20-30 weighted ball running throws

Recovery: None

After several weeks, 60% of the pitchers who participated had some form of arm injury. Why?

A significant contributing factor was a program designed with little warm-up and no recovery.

Minimal warm-up, no recovery, only high-output throwing. Again, we can't stress enough that this is not the correct approach.

INTRODUCTION: WHY TRAIN BALLISTICALLY?

Weighted balls as a training tool are largely misunderstood.

Most of the associated fear stems from bad program design or implementation and a misunderstanding of stress on a pitcher's arm.

At Driveline, we use overweight and underweight implements to both improve an athlete's efficiency of movement and their ability to produce and accept force.

But, if you're new to weighted balls, we understand the associated fears about getting started.

The Role of Stress

For the properly prepared athlete, stress is a benefit. It creates positive tissue adaptations through the mechanism of supercompensation—stressed tissue (given sufficient but not too much recovery time) will add capacity, increasing its overall fitness.

For an untrained, over-tired or unrecovered athlete, stress is a negative, leading the athlete on a downward spiral to poor performance and risk of injury.

THE PURPOSE OF THIS GET STARTED GUIDE IS TWO-FOLD:

1

Create a simple, actionable path from untrained athlete to on-ramped and fit athlete.

2

Clearly explain the logic and methodology behind the program's creation so coaches and athletes can make an informed choice about using it.



MORE ABOUT STRESS: PROGRESSING LOADS

A pitcher's body will adapt to the specific stressors/stimuli being applied to it—if a stressor stays exactly the same, week after week, month after month, adaptation comes to a halt.

This makes intuitive sense—you wouldn't lift the same weight for the same reps every week and expect to keep getting stronger without needing to add weight or reps.

Any thrown ball is a weighted ball. A 5-ounce baseball is not optimized to maximize throwing velocity and minimize injury risk.

Five ounces is an accident of history. We know of no weight of baseball that optimizes the performance/injury risk curve for all or even most athletes.

The benefit from training with the 5-ounce baseball is that it is the competition weight.

However, just like in the weight room, varying the weight of the training implement can build arm fitness and promote a more efficient movement in athletes by varying the feel of the throwing motion.

Are weighted balls dangerous?

What shines through in research, both at Driveline and at ASMI, is that throwing underweight or lighter balls increases the peak stress on the UCL. For that reason, you will notice that the bulk of the programming here is “overload”—heavier than 5 ounces.

However, despite the increased stress, underload throws also have a positive

impact for arm speed development. That risk associated with underload tools needs to be evaluated in the context of the arm speed it also develops.

We use underweight balls in our programs, but introduce them later in the programming and in small doses.

Review of Available Research

On the following page is a list of different studies of training methods and their effects on throwing velocity. You will notice that for a population of “novice” trainees, high school and college-age, both lifting (isotonic) and overload/underload training increased throwing velocity.

Dr. Coop Derenne is the foremost expert in this field and has published a number of research papers that indicate that

weighted baseball training creates a significant increase in velocity for those training with underweighted and over-weighted baseballs.

His most popular paper is *Effects of Under and Overweighted Implement Training on Pitching Velocity*, which concludes that training with either underweighted (4 oz) or overweighted (6 oz) baseballs improved pitching velocity when compared to simply throwing normal baseballs.

More throwing research is available at our [Pitching Research](#)  page.

SUMMARY OF THROWING VELOCITY RESISTANCE TRAINING STUDIES

STUDY	SUBJECTS	TRAINING METHOD	STRENGTH CHANGE	VELOCITY CHANGE
Bagonzi	High school	Isotonic		Increase
Edwards	College	Isotonic		Decrease
Jackson	High school	Isotonic	No change	No change
Newton and McEvoy	College	Isotonic	Increase	Increase
Potteiger	College	Isotonic		Increase
Popescue	High school	Isotonic		Increase
Shenk	College	Isotonic	No change	No change
Sullivan	College	Isotonic		Increase
Swangard	College	Isotonic		Increase
Thompson and Martin	College	Isotonic		Increase
Lachowetz et al.	College	Isotonic		Increase
McEvoy and Newton	Professional	Ballistic		Increase
Newton and McEvoy	College	Medicine Ball	Increase	No change
Wooden et al.	High school	Isokinetic		Increase
Bagonzi	High school	Overload Baseballs		Increase
Brose and Hanson	College	Overload Baseballs, Wall Pulley		Increase
DeRenne	High school	Weighted Baseballs		Increase
DeRenne	High school	Weighted Baseballs		Increase
DeRenne	High school, College	Weighted Baseballs		Increase
Egstrom et al.	College	Weighted Balls		Increase
Elias	College	Overload Baseballs		Increase
Logan et al.	College	Exer-genie		Increase
Railey	College	Wall Pulley		Increase
Shenk	College	Surgical Tube	No change	Increase
Sullivan	College	Wall Pulley		Increase
VanHuss et al.	College	Overload Baseballs		Increase

GENERAL

SPECIAL

SPECIFIC

General: traditional isotonic resistance training exercises that increase overall maximum strength of the muscles.
Special: explosive resistance training exercises for muscular power development.
Specific: resistance training exercises that attempt to mimic the high-velocity ballistic throwing motion.



[Weighted Baseballs, Safety and Consequences](#) 

[Hacking Your Arm Action: a Hidden Power of Overload Training](#) 

HOW THIS BALLISTIC TRAINING PROGRAM WORKS

This 8 Week Program is for coaches and athletes new to our training methods to implement ballistic programming with weighted implements from 3 ounces to 2,000 grams.

The program relies on constraint training to ingrain certain movement patterns beneficial to healthy, high-velocity pitchers. And the volume of the program helps athletes learn those movements without over-intervention.

Varying the weight of the implement thrown can improve a pitcher's mechanics by reinforcing better movements in a pitcher's mind.

Training this way can also improve a pitcher's arm fitness. A more efficient arm action plus the fitness to sustainably produce and accept force while throwing leads to an increase in velocity and accuracy.

Is this a throwing program or a pitching program?

This is the start of your pitching program. The reason we begin with throwing is that it is easier to learn better movements in increasingly constrained movements (drills).

The pitching motion itself is too complex to cue and teach alone.

In the end, it transfers. But there are 4 intermediate steps:

1 Arm Strength and Mechanical Patterning

This is you right now. Building better throwing patterns with overload implements and training the arm fitness levels to prepare for either off-season velocity work or in-season maintenance and durability program.

2 Throwing Range of Motion (ROM)

Elite pitchers have much higher external rotation ROM in the shoulder than mediocre pitchers (source: ASMI). Overload weighted baseballs and PlyoCare balls help gently stretch the shoulder into increased range of motion while *simultaneously building force generation capacity at those ranges of motion*—this is a critical point that is often overlooked.

This is one of the mechanisms going on during PlyoCare work and weighted ball throwing.

3

Improving Rate of Force Development (ROFD)

This is basically the rate at which a pitcher can produce force. This is achieved through the use of under-weight baseballs, the pitcher gets the stimulus of throwing a 3 or 4 oz. baseball much faster than he would throw a regulation weight 5 oz. baseball. He not only consciously learns how to develop intent, but subconsciously improves ROFD capacity in both the underlying musculature as well as the central nervous system (CNS).

This is another of the mechanisms going on during PlyoCare work and weighted ball throwing.

4

Reorganizing Proprioception for the Mound

Now that general arm fitness has improved, range of motion has increased, and rate of force development has gone through the roof, it's all about transferring it to a more specific preparatory exercise chain, the mound.

Training Carry-Over: Will I lose command?

Our data shows that command DOES tend to get better after a ballistic training program that heavily features recovery modalities, but the variance is quite large.

The mechanism at play over the long haul is backchaining. Building a base of fitness and learning a more efficient throwing pattern backchains into your pitching motion because pitching is a more complex motion than simply throwing.

The very nature of backchaining demands that the low-skill high-output training methods (i.e. throwing a ball hard into a wall) are put before the high-skill low-output training concepts (i.e. touch and feel bullpens).

Simply put we are learning to throw before learning to pitch. Just like you would learn to walk before learning to run.

A misconception is that maximum intensity throwing worsens command, probably because some academies and training

Following up this program with mound-specific blending work to prep for the season is the most-effective way to get tangible results from this starter program. Those programs are available in:

HACKING THE KINETIC CHAIN [↗](#)

facilities do not care where the ball goes and insist that high intensity training alone will yield command benefits.

We do care where the ball goes.

[Weighted Baseballs vs. Plyocare Balls—What's the Difference?](#) [↗](#)

[Crow-Hop Weighted Baseball Throws for Velocity Development](#) [↗](#)

[How to Transfer Weighted Baseball Velocity Gains to the Mound](#) [↗](#)

**READ
MORE ON
OUR BLOG**

GETTING STARTED: ASSESSING THE ATHLETE

Performing a thorough movement screen is something that should be done before and during any throwing program.

These screens should be done by qualified physical therapists and trainers throughout the course of an athlete's training. However, quick assessments can be done in order to ensure no gross deficiencies exist in the throwing athlete.

Directions:

1

If an athlete fails a certain category:

Follow the prescription for that movement.

2

Re-test failed athletes:

Every fifth day in the category that they failed.

3

If severe deficiencies remain after 2-3 re-tests:

Consult a team doctor or physical therapist.

4

If an athlete fails more than 2 categories:

They are likely not ready to begin high output training and should begin a maintenance load of corrective exercises/movement patterns as prescribed by a team doctor or physical therapist.

IF AN ATHLETE FAILS ANY OF THESE TESTS,

have them perform the specific correctives before beginning the on-ramp program.

1

SQUAT TEST

The athlete must be able to squat well below parallel pain and discomfort free. If they cannot pass, it is a red flag for tightness in the ankle, calf, hips, hamstrings and/or quads.

VIDEO



HOW TO PERFORM

Place feet approximately shoulder width and point the toes slightly outward, squat between the legs with neutral neck posture and a slight 45 degree angle of the back.

PASS

The athlete's upper leg is well below parallel to the ground they are free of pain and discomfort and can hold this position for 5-10 seconds without problem.

FAIL

The athlete cannot get below parallel or they can but with extreme discomfort and/or pain. Another sign of failing would be they can get below parallel but come to a hitch at or around parallel and have to push down through it.

WHAT TO DO IF YOU FAIL

Perform the following DAILY as a part of the athlete's warm up:

- Foam Roll and Lax Ball Roll as a part of warm up and recovery (calves, hamstrings, quads, IT band, hip flexors, groin)—10 seconds per body part
- Seated 90/90 stretch—3 sets of 15 seconds per leg
- Cradle Walks—2 sets of 10 each leg
- Wall Quad Stretch—2 sets of 15 seconds each leg
- Ichiro Stretch—3 sets of 15 seconds
- Cobra Pose—3 sets of 15 seconds
- Bodyweight Box Squats—3 sets of 10

2

SHOULDER EXTENSION

This test will disclose information about the upper back and upward rotation of the scapulae.

VIDEO



HOW TO PERFORM

Have the athlete lay on his back with legs together and arms down by the side, raise the hands over head and try to touch thumbs to the ground.

PASS

The athlete can touch his thumbs to the ground without any arching of the lumbar spine and/or flexion of the elbows.

FAIL

The athlete has to arch the lumbar spine, flexes the elbows or gets to a certain point overhead and has to “bounce” the rest of the way to get overhead.

WHAT TO DO IF YOU FAIL

Perform the following DAILY as a part of the athlete's warm up:

- Foam Roll and Lax Ball Roll as a part of warm up and recovery (Thoracic spine, lat, posterior shoulder, anterior shoulder, pec major, pec minor)—10 seconds per body part
- External Rotation Bands Holds—3 sets of 10 per arm
- Cobra Pose—3 sets of 15 seconds
- Band Pullapart Series—10 reps per exercise
- Cuban Press—3 sets of 10 with 10 lb. wrist weights (warm up and recovery)

3

GLENOHUMERAL INTERNAL ROTATION DEFICIT TEST

This test should be performed by either a qualified physical therapist or athletic trainer. GIRD is defined as the difference in internal rotation (IR) between each shoulder. Loss of IR in the throwing shoulder is completely normal for the baseball pitcher and is typically accompanied with a gain of external rotation (ER).

DO NOT stretch the throwing shoulder into External Rotation.



HOW TO PERFORM

Have the athlete lay on a table and gently stretch each arm into external rotation and then again into internal rotation. Make sure that arm is completely limp with no resistance when being stretched. Repeat on each arm.

PASS

Throwing arms show exact [or similar] total degrees IR and ER with no discomfort when being stretched into those positions.

FAIL

The athlete experiences discomfort during the test or the arms' IR and ER show vast differences compared to the non-throwing arm.

WHAT TO DO IF YOU FAIL

Perform the following DAILY as a part of the athlete's warm up:

- Foam Roll and Lax Ball Roll as a part of warm up and recovery (Thoracic spine, lat, posterior shoulder, anterior shoulder, pec major, pec minor)—10 seconds per body part
- Cross-Body Stretch—3 sets of 15 seconds each side
- Modified Sleeper Stretch—3 sets of 15 seconds
- PlyoCare Upward Tosses—3 sets of 10 with 2 lb ball
- PlyoCare Rebounders—2 sets of 10 with 1 lb and 2 lb ball

PROGRAM OVERVIEW—8 WEEKS

The 8 Week On-Ramping Program is broken down into four (4) two week phases, it lasts 8 weeks overall and is designed to be done consecutively. The program contains six different components:

1 Warm-up

We recommend taking the athlete through a full dynamic warm up as well as the Jaeger Sports J-Band routine.

2 PlyoCareProgram

Up to five different constraint drills using our [Driveline PlyoCare Balls](#) [↗](#).

3 Throwing Program

We encourage our athletes to follow the long toss protocols set forth by Alan Jaeger, including extension and compression phases. We highly endorse Alan's teaching methods on long toss. Read more about the facts on long toss [here](#) [↗](#). His Year-Round Throwing Manual is excellent and a good way to periodize long toss.

4

Weighted Ball Program

Done in a run-and-gun or pulldown drill and included in the off-season portion of the program. Record the top speed with each weight.

5

Practice

This obviously varies on the time of the year you are on-ramping the athlete, if this program is being done during a fall ball season—the athlete can go through normal practice activity (same as spring/in-season).

6

Recovery

The most important part of training, proper recovery protocols are to be executed with the same emphasis the athlete and coach place in throwing PlyoCare and weighted baseballs.

You have to do the boring recovery stuff with the same intent you have when throwing hard.

DO NOT SKIP!

ADJUSTING FOR BULLPENS

Schedule a bullpen for the same day weighted balls are scheduled to be thrown, but do not throw weighted balls.

Reduce rate of perceived exertion (RPE) on PlyoCare throws for that day to 70%.

ADJUSTING FOR LIFTING

If this program is being done in the offseason, the “practice” load should be substituted for weight training.

For the beginning athlete, any lifting program that stresses compound movements and shoulder stability should be sufficient for the first 8 weeks. [Mark Rippetoe's Starting Strength](#) [↗](#) and [Eric Cressey's Maximum Strength](#) [↗](#) are good programs for absolute beginners.

DRILL OVERVIEW AND VIDEO SERIES

JAEGER SPORTS J-BAND ROUTINE



We highly recommend Alan Jaeger's J-Band routine, and use J-bands exclusively at Driveline. You can download the exercise manual [here](#) . We recommend 10 reps of each exercise.

JAEGER SPORTS LONG TOSS ROUTINE



Jaeger Sports Year-Round Throwing manual gives great, actionable advice on how to periodize long toss between off-season, in-season and blend-to-season periods. When the program denotes "Extension" or "Extension/Compression", we mean specific to the time of year you are beginning the program.

There is no set number of throws for this portion of the program.

When adding weighted balls into a long toss routine, use them during the extension phase. Throw them under 80% effort on an arc while going out.

WRIST WEIGHT SERIES

Light dumbbells have been used in shoulder strengthening for decades. Wrist weights do a better job for a couple of reasons: first, they generate a physiological response and, second, they teach the body to move more efficiently through the throwing range of motion.

- ▶ These drills “throw” the weight in a ballistic fashion with the weight held loosely in the fingertips (not gripped tightly).
- ▶ To start, each of the drills should be done at 70% effort working on arm path. As the weeks pass, work up the effort level while maintaining good technique.



Pronation Swings



2-Arm Swings



Pivot Picks

Cuban Presses

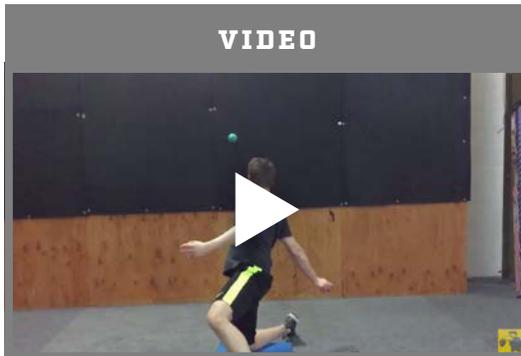


VIDEO



REVERSE THROWS

- ▶ This drill trains the posterior shoulder to be able to accept the force produced by higher velocities. As well as some thoracic spine mobility work.
- ▶ The athlete kneels onto throwing side knee and starts with torso stacked, create some momentum forward and drive shoulder and elbow back through the natural arm slot.



DOING IT WELL

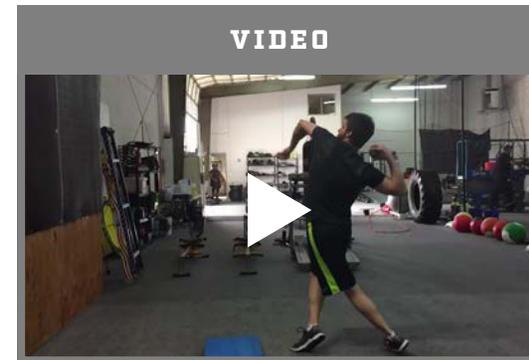
Ball should hit the wall at head height, directly behind the athlete.





PIVOT PICKOFF THROWS

- ▶ This drill improves forward rotation in the delivery, medial forearm strength and pronation speed/timing.
- ▶ Start with throwing side perpendicular to target, counter rotate so torso now faces the target and hang throwing hand back in supinated position. Before throwing, fold glove arm down and then drive the wrist over the elbow.



DOING IT WELL

Ball hits the wall at head height.

ROLL-IN THROWS

- ▶ Stand facing the target with ball in throwing hand at waist level, take a walking step with throwing side leg and drive powerfully into foot strike—be sure to minimize hip rotation and keep toes point to target as walking steps are taken.
- ▶ Drive throwing arm directly back into scapular retraction, no arm swing.
- ▶ As soon as stride foot contact is made, fold glove arm down and deliver ball to target.
- ▶ Rotate around a braced (not flexed) front leg.



DOING IT WELL

Lead leg braces. Ball hits the wall at head height.





ROCKER THROWS

- ▶ Start this drill with feet near stride length and front foot slightly closed off from target. Create momentum by rocking forward and then back, and then throw ball toward target—finish by bring back leg through.
- ▶ Be sure to rotate around a braced (not flexed) front leg.

VIDEO



DOING IT WELL

Lead leg braces. Shoulder rotates forward.
All balls hit the wall at eye level.

WALKING WINDUPS

- ▶ Facing your target with ball in your throwing hand, take a step forward and rotate your foot as if to use the rubber to throw off a mound. Bring your leg up, stride out and throw the ball.
- ▶ Generate momentum toward the target, try not to pause at balance point



DOING IT WELL

Good momentum through leg lift. Lead leg braces. Shoulder rotates forward. All balls hit the wall at eye level.





UPWARD TOSSES

- Holding the ball in your throwing hand with arm out to the side, throw the ball up and catch it as it begins to fall.

VIDEO

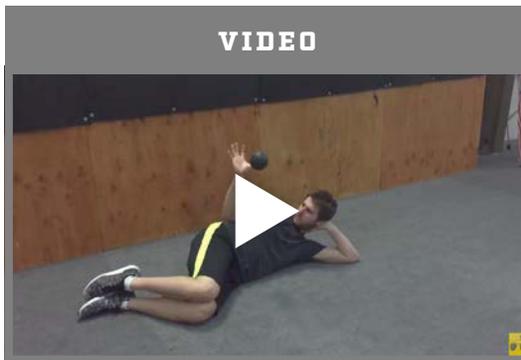


DOING IT WELL

Let it drop until it passes your fingertips, so you catch it in a decelerating, stabilizing fashion.

SIDE LYING ER TOSSES

- Laying on the ground on your glove side and holding the ball in your throwing hand with your throwing elbow resting on your ribcage, throw the ball up and catch it as it begins to fall.



DOING IT WELL

Let it drop until it passes your fingertips, so you catch it in a decelerating, stabilizing fashion.





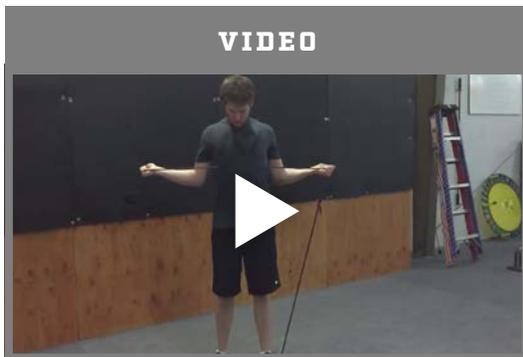
BAND PULLAPARTS

- Using a J-Band, either both strands or one depending on the athlete's strength levels or desired resistance, the band apart with straight arms. Exercises are behind the head (elbows can flex for this), two diagonals and straight across the chest.



NO MONEY DRILL

- Using a J-Band, either both strands or one depending on the athlete's strength levels or desired resistance, tuck elbows to rib cage forming two 90 degree angles—and with hands supinated, pull the bands across the midsection.





WEIGHTED BALL LONG TOSS

- ▶ Done at less than full effort, throwing weighted balls during the Extension phase of long toss allows the overload balls to help promote a better arm action.
- ▶ Throwing overload balls likely reduces the stress on the arm experienced during the throw.

DOING IT WELL

Beginning with a 9-ounce ball, the athlete throws at 50-80% effort out to 100 feet. Beyond 100 feet, he continues throwing with a baseball, both going out and coming back in, until long toss is finished.

As the athlete gains experience and gets stronger, he should graduate to an 11-ounce ball.

WEIGHTED BALL COMPRESSION THROWS

- ▶ “Run and Gun” throw into a net from 20-40 feet away as hard as possible—intent, intent, intent to throw hard!
- ▶ Throwing should be one-way only and not to a partner. Nobody wants to catch a max-effort 7-ounce ball in the palm.



DOING IT WELL

Your first throw at each weight is 80%, and all the others are as hard as possible.



EQUIPMENT LIST

To complete the 8 Week On-Ramping Program, you will need the following equipment:

1 A weighted baseball set that has these weights in them:

- ▶ 3 oz. baseball
- ▶ 4 oz. baseball
- ▶ 6 oz. baseball
- ▶ 7 oz. baseball
- ▶ 9 oz. baseball
- ▶ 11 oz. baseball

2 A set of PlyoCare balls with the following weights:

- ▶ 2 kg PlyoCare ball
- ▶ 1 kg PlyoCare ball
- ▶ 450g PlyoCare ball
- ▶ 225g PlyoCare ball
- ▶ 150g PlyoCare ball
- ▶ 100g PlyoCare ball

3 A set of 10-pound wrist weights [↗](#):

Be sure to buy the 20-pound pair set (2x10-pound weights) and not the 10-pound pair set (2x5-pound weights).

PLYOCARE
BALLS



WHAT ARE THE DIFFERENCES BETWEEN THE BALLS?

PlyoCare balls are our throw-every-day balls, meant for submaximal throwing and for constraint training (the drills), as well as general arm care.

Weighted baseballs are meant for maximal intent throwing to build velocity or to affect changes at near 100% intensity.

4 A bucket of baseballs:

To complete the long toss / high-intensity throwing portion of this program with regulation weight (5 oz) baseballs. Ideally you'd have three dozen (36) baseballs, but you can make do with as few as six (6) if you don't mind running around and picking them up repeatedly!



5 Jaeger Year-Round Throwing Manual:

For long toss, we like and use the year-round protocols Alan Jaeger outlined in his Year-Round Throwing manual.

ALAN JAEGER
YEAR ROUND
THROWING

6 Resistance bands:

Last, but not least, some resistance bands / surgical tubing to do a series of arm exercises.

J-BANDS



**BELIEVE IT OR NOT,
WE SELL ALL OF
THIS EQUIPMENT!**

The Driveline Velocity and Arm Care Starter Kit is the ideal package to complete this program. It comes with a full set of PlyoCare Balls, Elite Weighted Baseballs, and a Jaeger Sports J-Band PLUS Alan's Year Round Throwing Manual. If you already have some of the equipment and don't need the full package, you can get the equipment piecemeal by going to the Driveline Baseball Online Shop:

- ▶ [Driveline PlyoCare Balls](#)
- ▶ [Driveline Elite Weighted Baseballs](#)
- ▶ [Jaeger Sports J-Bands](#)
- ▶ [Alan Jaeger Year Round Throwing](#)
- ▶ [Wrist Weights](#)

IMPORTANCE OF RECOVERY

**REST DAYS ARE REST DAYS.
DON'T THROW.**

Adding more work doesn't make a good program better. Many athletes and coaches starting out think, "If throwing weighted balls once a week is good, doing them every day will be 7x better!"

This is a flawed approach and neglects how important recovery is. You might make yourself over trained or put yourself at increased risk of an injury.

Below is a basic breakdown of training activities by time spent per week during the off-season for an on-boarded athlete in our MaxVelo program:

1. WARM UP
25-35%
2. THROWING PROGRAM
15-25%
3. WEIGHTED BALL PULLDOWNS
2.5-7.5%
4. RECOVERY
30-50%

55-85% of time is spent on warm-up and recovery.

If you want to see benefits from high-output training of any kind (lifting, throwing, etc.) you have to be willing to put in time doing the boring prep work.

**READ
MORE ON
OUR BLOG**

[Demonizing Weighted Balls—
A Review of Criticisms](#) ↗

BONUS: GETTING THE MOST OUT OF THE PROGRAM

Beyond what we've outlined here, executing a few extra-curricular activities can help you maximize your 8-week experience:

1 Track your workouts.

High compliance has shown itself to be the #1 separator for great results in our facility across a lot of different variables.

2 Sleep.

It is anabolic. 9 hours a day would be ideal for most athletes—if you are under 17, try for 10.

3 Eat.

We have yet to encounter a novice athlete who was eating enough. Use MyFitnessPal to track your calories. A rule of thumb is 20–25 cal/lb of bodyweight. Consult a nutrition expert for a breakdown of macros or more tailored advice.

4 Lift weights.

For novice lifters (this is most anyone who hasn't been lifting heavy for two years), a simple program like [Starting Strength \(Rippetoe\)](#) or [Maximum Strength \(Cressey\)](#) will work. When lifting, lift after throwing work.



WEEKS 9 AND BEYOND: WHAT DO I DO WHEN I'M DONE?

This program is designed as an on-ramp, gearing the athlete up and getting them ready for either more aggressive ballistic weighted ball training and/or an in-season maintenance program.

Coaches

Both of these programs and many others come standard with the online content available when you purchase our [Hacking the Kinetic Chain](#)  training system.

Hacking the Kinetic Chain contains a huge video library and is written so that you can teach yourself how to get more out of your current pitchers.

Think of it as another tool in the toolbelt.

Athletes

Completing this program means you are fully on-ramped and ready for more advanced training. The best results come from athletes who [train at Driveline](#) . Alternatively, [Driveline U](#)  is our remote training program that integrates custom throwing, strength and mobility programming plus teaches you how to train more independently.

If you're looking for just a program, [Hacking the Kinetic Chain](#)  has all of the templates we use with everyone who comes in to train.

We have options to fit most any athlete, so get in [touch](#) .

THANK YOU

Thank you for downloading and reading this program.

This program can be started in the fall, winter, spring or summer—assuming your athletes are also getting what they need in terms of rest or time off.

For instance, if one of your pitchers throws a total of 100 plus innings in spring and summer combined—we do recommend they rest for 2-4 weeks before beginning this program in the fall.

Coaches, share this program with your colleagues or other coaches in your league, we just ask that you send them the link to our [Free Coaches Starter Kit](#) so that can also check out the rest of our site and the 100+ free articles on our [blog](#).

Athletes, [come train with us](#)!

GET IN TOUCH

Feel free to email support@drivelinebaseball.com with questions and one of our team members will be in touch with you as fast as possible!

APPENDIX: 8 WEEK ON-RAMPING PROGRAM

Purpose of Program

The On-Ramp program is designed for an athlete and coach new to ballistic training with weighted balls. Its goal is to prepare the athlete for more extensive work. Consult our eBook for additional information. **All exercises are meant to be done in LISTED ORDER for pre and post-throwing purposes, except alternating where listed.**

		DAYS						
		1	2	3	4	5	6	7
WEEKS	1	ASSESS ATHLETE	WEEK 1/2		WEEK 1/2		WEEK 1/2	
	2		WEEK 1/2		WEEK 1/2		WEEK 1/2	
IF YOU ARE DOING THIS PROGRAM IN-SEASON OR DURING ANY TIME YOU WILL BE EXPECTED TO PITCH, REPEAT WEEKS 1 AND 2 UNTIL OFF-SEASON.								
	3	WEEK 3/4 REGULAR	ASSESS ATHLETE	WEEK 3/4 REGULAR		WEEK 3/4 REGULAR		WEEK 3/4 VELOCITY
	4	WEEK 3/4 REGULAR		WEEK 3/4 REGULAR		WEEK 3/4 REGULAR		WEEK 3/4 VELOCITY
	5	WEEK 5/6 REGULAR	ASSESS ATHLETE	WEEK 5/6 REGULAR		WEEK 5/6 REGULAR		WEEK 5/6 VELOCITY
	6	WEEK 5/6 REGULAR		WEEK 5/6 REGULAR		WEEK 5/6 REGULAR		WEEK 5/6 VELOCITY
	7	WEEK 7/8 REGULAR	ASSESS ATHLETE	WEEK 7/8 REGULAR		WEEK 7/8 REGULAR		WEEK 7/8 VELOCITY
	8	WEEK 7/8 REGULAR		WEEK 7/8 REGULAR		WEEK 7/8 REGULAR		WEEK 7/8 VELOCITY

WEEK 1/2: BASIC ON-RAMP

1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE	1 set of 10 reps
FOAM ROLL	2-3 passes per body part
WRIST WEIGHT SERIES	1 set per exercise of 5 reps at 70% effort

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS	2 sets of 10 (1kg Green)
PIVOT PICKOFFS	2 sets of 10 (1kg Green)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 7oz ball out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

4. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

5. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE	1 set of 10 reps
UPWARD TOSSES	2 sets of 15 (either 2kg Black OR 1kg Green)
BAND PULLAPARTS	2 sets of 15
NO MONEY DRILL	2 sets of 10
SIDE LYING ER TOSSES	2 sets of 10 (either 2kg Black OR 1kg Green)

WEEK 3/4: REGULAR



1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE	1 set of 10 reps
FOAM ROLL	2-3 passes per body part
WRIST WEIGHT SERIES	1 set per exercise of 10 reps at 80% effort

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS	2 sets of 10 (2kg Black) 2 sets of 10 (1kg Green)
PIVOT PICKOFFS	2 sets of 10 (2kg Black) 2 sets of 10 (1kg Green)
ROLL-IN	1 set of 10 (450g Blue)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 9oz ball out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

Once maximum distance is reached, begin the compression phase, putting throws on a line and moving in 5-10 feet with each throw.

Year-Round Throwing gives more specific recommendations on how to periodize this for different times of year (in-season, off-season, summer).

4. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

5. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE	1 set of 10 reps
UPWARD TOSSES	2 sets of 15 (either 2kg Black OR 1kg Green)
BAND PULLAPARTS	2 sets of 15
NO MONEY DRILL	2 sets of 10
SIDE LYING ER TOSSES	2 sets of 10 (either 2kg Black OR 1kg Green)

WEEK 3/4: VELOCITY



1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE

1 set of 10 reps

FOAM ROLL

2-3 passes per body part

WRIST WEIGHT SERIES

1 set per exercise of 10 reps at 80% effort

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS

2 sets of 10 (2kg Black)
2 sets of 10 (1kg Green)

PIVOT PICKOFFS

2 sets of 10 (2kg Black)
2 sets of 10 (1kg Green)

ROLL-IN

1 set of 10 (450g Blue)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 9oz ball out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

4. WEIGHTED BALL PROGRAM

Throw the following weights into a net, in order (video):

5 OZ

4 total throws (1st throw at 80%)

6 OZ

4 total throws (1st throw at 80%)

4 OZ

4 total throws (1st throw at 80%)

5. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

6. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE

1 set of 10 reps

UPWARD TOSSES

2 sets of 15 (either 2kg Black OR 1kg Green)

BAND PULLAPARTS

2 sets of 15

NO MONEY DRILL

2 sets of 10

SIDE LYING ER TOSSES

2 sets of 10 (either 2kg Black OR 1kg Green)

WEEK 5/6: REGULAR



1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE	1 set of 10 reps
FOAM ROLL	2–3 passes per body part
WRIST WEIGHT SERIES	1 set per exercise of 10 reps

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS	2 sets of 10 (2kg Black) 2 sets of 10 (1kg Green)
PIVOT PICKOFFS	1 set of 10 (2kg Black) 1 set of 10 (1kg Green)
ROLL-IN	1 set of 10 (1kg Green) 1 set of 10 (450g Blue)
ROCKER THROWS	1 set of 4 throws each ball (Blue, Red, Yellow, Grey—in order)
WALKING WINDUP	1 set of 4 throws each ball (Blue, Red, Yellow, Grey—in order)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 90z OR 110z balls out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

Once maximum distance is reached, begin the compression phase, putting throws on a line and moving in 5–10 feet with each throw.

Year-Round Throwing gives more specific recommendations on how to periodize this for different times of year (in-season, off-season, summer).

4. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

5. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE	1 set of 10 reps
UPWARD TOSSES	2 sets of 15 (either 2kg Black OR 1kg Green)
BAND PULLAPARTS	2 sets of 15
NO MONEY DRILL	2 sets of 10
SIDE LYING ER TOSSES	2 sets of 10 (either 2kg Black OR 1kg Green)

WEEK 5/6: VELOCITY

1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE	1 set of 10 reps
FOAM ROLL	2-3 passes per body part
WRIST WEIGHT SERIES	1 set per exercise of 10 reps

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS	2 sets of 10 (2kg Black) 2 sets of 10 (1kg Green)
PIVOT PICKOFFS	1 set of 10 (2kg Black) 1 set of 10 (1kg Green)
ROLL-IN	1 set of 10 (450g Blue)
ROCKER THROWS	1 set of 4 throws each ball (Blue, Red, Yellow, Grey—in order)
WALKING WINDUP	1 set of 4 throws each ball (Blue, Red, Yellow, Grey—in order)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 9oz OR 11oz ball out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

4. WEIGHTED BALL PROGRAM

Throw the following weights into a net, in order (video):

5 OZ	4 total throws (1st throw at 80%)
6 OZ	4 total throws (1st throw at 80%)
7 OZ	4 total throws (1st throw at 80%)
5 OZ	4 total throws (All at 100%)
4 OZ	4 total throws (1st throw at 80%)

5. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

6. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE	1 set of 10 reps
UPWARD TOSSES	2 sets of 15 (either 2kg Black OR 1kg Green)
BAND PULLAPARTS	2 sets of 15
NO MONEY DRILL	2 sets of 10
SIDE LYING ER TOSSES	2 sets of 10 (either 2kg Black OR 1kg Green)

WEEK 7/8: REGULAR

1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE	1 set of 10 reps
FOAM ROLL	2–3 passes per body part
WRIST WEIGHT SERIES	1 set per exercise of 10 reps

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS	2 sets of 10 (2kg Black) 2 sets of 10 (1kg Green)
PIVOT PICKOFFS	1 set of 10 (2kg Black) 1 set of 10 (1kg Green)
ROLL-IN	1 set of 10 (1kg Green) 1 set of 10 (450g Blue)
ROCKER THROWS	2 sets of 4 throws each ball (Blue, Red, Yellow, Grey—in order)
WALKING WINDUP	2 sets of 4 throws each ball (Blue, Red, Yellow, Grey—in order)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 110z ball out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

Once maximum distance is reached, begin the compression phase, putting throws on a line and moving in 5–10 feet with each throw.

Year-Round Throwing gives more specific recommendations on how to periodize this for different times of year (in-season, off-season, summer).

4. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

5. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE	1 set of 10 reps
UPWARD TOSSES	2 sets of 15 (either 2kg Black OR 1kg Green)
BAND PULLAPARTS	2 sets of 15
NO MONEY DRILL	2 sets of 10
SIDE LYING ER TOSSES	2 sets of 10 (either 2kg Black OR 1kg Green)

WEEK 7/8: VELOCITY



1. WARM UP

FULL DYNAMIC WARM-UP

J-BAND ROUTINE	1 set of 10 reps
FOAM ROLL	2-3 passes per body part
WRIST WEIGHT SERIES	1 set per exercise of 10 reps

2. PLYOCARE PROGRAM

Perform the following drills, in order:

REVERSE THROWS	1 set of 10 (2kg Black) 1 set of 10 (1kg Green)
PIVOT PICKOFFS	1 set of 10 (2kg Black) 1 set of 10 (1kg Green)
ROLL-IN	1 set of 10 (1kg Green) 1 set of 10 (450g Blue)
ROCKER THROWS	2 sets of 4 throws each ball (Blue, Red, Yellow, Grey—in order)
WALKING WINDUP	2 sets of 4 throws each ball (Blue, Red, Yellow, Grey—in order)

3. THROWING PROGRAM

Extension throwing. Play catch at below 80% exertion putting lots of loft under the ball. Use the 110z ball out to 90ft using as many throws as necessary to get loose. Once 90 feet is reached, switch to a regular baseball and continue the extension phase.

4. WEIGHTED BALL PROGRAM

Throw the following weights into a net, in order (video):

5 OZ	4 total throws (1st throw at 80%)
6 OZ	4 total throws (1st throw at 80%)
7 OZ	4 total throws (1st throw at 80%)
5 OZ	4 total throws (All at 100%)
4 OZ	4 total throws (1st throw at 80%)
3 OZ	4 total throws (1st throw at 80%)

5. PRACTICE

Go into normal practice activity from here; batting practice, team defense, PFP, etc.

6. RECOVERY

Post-Practice recovery methods as follows:

J-BAND ROUTINE	1 set of 10 reps
UPWARD TOSSES	2 sets of 15 (either 2kg Black OR 1kg Green)
BAND PULLAPARTS	2 sets of 15
NO MONEY DRILL	2 sets of 10
SIDE LYING ER TOSSES	2 sets of 10 (either 2kg Black OR 1kg Green)

