



ARM ACTION

Push *or* Whip

A pushing arm is not a style, a personality trait, or something a pitcher chooses. It is what an arm does when the body underneath it fails to carry it, and there are seven specific reasons it happens, most of them coming from the training rather than the athlete.

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A whipped arm is **carried** to the plate. A pushed arm **travels there under its own power**, because nothing else was going to take it.

The difference is not effort or intent, and it is rarely a habit the athlete could simply stop. Pushing is what is left when the chest does not deliver rotation, or when the arm is too tense to be left behind, or when a drill has taught the athlete that extending is how you get the ball to the target. It shows up as a triceps driven finish, a ball that cuts and flattens, and an elbow load bill that arrives without the velocity that is supposed to justify it.

The two arm actions

Both get the ball to the plate. Only one of them is being paid for by the rest of the body.

WHIP

The arm is carried

The chest rotates and the arm, being heavy and relaxed, gets left behind. The chest then slows and hands its speed forward. Elbow extension happens because the arm is being swung, not because the triceps decided to extend it.

The chest, lat and front of the shoulder go on stretch at peak layback and return that energy. The arm reverses over a **long arc**, which is why real layback comes with lower elbow load.

Feels like almost nothing in the arm, which is exactly what makes it hard to coach directly.

PUSH

The arm goes on its own

Elbow extension is being produced by the triceps rather than inherited from the chest. Maximum elbow extension velocity is **positively associated with elbow load** — it is the arm generating what it should have been handed.

The finish is linear and forward rather than rotational and across. The ball tends to cut and finish flat, because the hand is travelling through rather than around.

Feels like work, which is part of why it persists. It feels like trying harder.

The seven causes

Tread's list, which is the most useful thing published on this. Four of the seven are things done to the athlete rather than by him.

Caused by the training

The four that a program creates and a program can remove.

- 01 **Balls heavier than 1 lb.** Weight above that produces protective tensioning: the arm braces instead of relaxing, and a braced arm cannot be left behind. The result is triceps driven extension rather than reflexive chest and lat engagement. Be selective above 1 lb for high school and college, and **avoid 2 lb entirely for youth**.
- 02 **Standing too close on plyo wall work**, with the target directly in front. Close range forces either a cutting action or a pushing finish, because there is no room to rotate through. The drill teaches the fault.
- 03 **Overcueing strikes.** Emphasising accuracy hard enough reads to the athlete as a demand for control, and control gets interpreted as trunk flexion and a linear finish rather than rotation. Precision pressure produces a pushed arm.
- 04 **Drilling layback as a position.** Chasing the shape produces the fake version, which is elbow flexion standing in for rotation, which is itself a pushing pattern with a different name.

Caused by the delivery

Where the arm is compensating for something happening below it.

- 05 **The upper half flies open.** Opening the shoulders fully at landing removes the rotational space the arm needed, so there is nowhere left to rotate through and the only route to the plate is linear. This is the largest single mechanical cause.

Caused by the tissue

Where the arm physically cannot slot into the position that would let it be carried.

06 **Soft tissue restriction** in the chest, the small chest muscle underneath it, the subclavius, the upper trapezius, the lat and the long head of the triceps. Any of these prevents smooth layback, and an arm that cannot lay back cannot be whipped. Release comes first, before any throwing intervention.

07 **Fake external rotation.** Forcing the elbow forward into flexion produces the appearance of layback from the side, sometimes reading past 180 degrees, while preventing the real thing from developing. The athlete looks like he has range and has none.

Caused by the nervous system

The one that must not be coached through.

08 **Compensating after injury.** Following a shoulder or elbow problem the brain restricts range to protect the tissue, producing an altered arm path that avoids positions it does not trust. This looks identical to the other causes on video and needs the opposite response. Progress rehabilitation slowly through full range and prioritise quality of throws over building intensity.

What pushing costs

ARM Load without the velocity Faster elbow extension is associated with more elbow load. When the extension is being generated rather than inherited, the pitcher is paying for speed the delivery never produced.	BALL Cut and flat A hand travelling through the ball rather than around it changes the spin axis. Fastballs cut, secondaries lose depth, and the pitch shapes drift toward each other.	DISTANCE It loses long toss immediately Pushing cannot produce distance. This is the most useful property of the fault: it is self evident the moment you back the athlete up, without anyone needing to explain it.
LAYBACK It prevents the thing that would fix it A tense pushing arm cannot lay back, and an arm that cannot lay back has to push. The loop closes on itself, which is why single interventions often fail here.	DECELERATION A shorter runway to stop on The reversal happens over a compressed arc, so peak deceleration force climbs at the same time. The ball lands at both ends of the motion.	COMMAND It is not actually more accurate Which matters because accuracy pressure is what caused it in a third of cases. A linear finish feels controllable and does not deliver better command in exchange.

What it looks like

FINISH The arm finishes out front, not across A whipped arm ends up across the body because it was carried by rotation. A pushed arm ends up extended toward the target because it went there itself.	ELBOW Visible triceps extension You can see the elbow being straightened rather than being swung straight. Freeze the frames between peak layback and release and watch what is driving the forearm.	BALL FLIGHT Cutting fastball, flat secondaries Especially telling when it is new. A pitcher whose fastball has started cutting without any grip change is worth filming from behind.
LONG TOSS Distance collapses relative to velocity A pitcher who throws 90 off a mound and cannot get a ball to travel is pushing. The two numbers should not disagree that badly.	LANDING Shoulders already square Check the frame the front foot lands. If the chest is open there, the arm has no rotational space left and pushing is the only option available to it.	FEEL He says it feels like effort Ask where he feels the throw. A carried arm feels like almost nothing in the arm. Effort located in the triceps and the front of the shoulder is a pushed one.

Fixing it, in order

Tread's sequence, which puts tissue before drills and environment before cues. The order matters because several of these causes prevent the others from being addressed.

STAGE 1

Take the training causes out first

Four of the seven are self inflicted. Removing them costs nothing and sometimes resolves the whole thing without any further work.

- **Cap the ball weights.** Selective above 1 lb, never 2 lb for youth
- **Back him off the plyo wall** and **mark the target with tape** so the drill demands rotation through the target line rather than a push at it
- **Stop cueing strikes** during development work. Accuracy pressure and rotational arm actions do not coexist
- **Stop drilling layback** as a shape

STAGE 2

Release what is preventing the position

An arm that physically cannot lay back will keep pushing regardless of what the drills say. This comes before any throwing intervention.

- **Small chest muscle and subclavius** — manual work, partner release, or a barbell self release
- **Upper trapezius** — release plus form correction, since it is usually dominance rather than tightness alone
- **Lat and long head of the triceps** — partner and self release drills
- Do not chase the position afterward. Release the tissue and let the range appear

STAGE 3

Close the upper half at landing

The one delivery cause, and the one with the most leverage. If the chest is square at foot contact there is no rotational space for the arm to be carried through.

- **Keep the shoulders closed at landing** and rebuild separation with roll in style drills
- Screen back hip rotational range and mid back rotation, since both feed this
- Check the front hip too. A pelvis that opens early because the front hip cannot hold takes the chest with it

STAGE 4

Let long toss do the teaching

The fastest reteach available, because the feedback is immediate and requires no explanation. Pushing visibly loses distance, so the athlete corrects toward a rotational finish on his own.

- **Long toss with high intent**, which naturally reinforces a rotational finish
- Let distance be the only instruction. Adding cues here reintroduces the accuracy pressure that caused the problem
- Film again from behind and watch the finish rather than the release

Two things pushing is not



NOT THE SAME THING

A short arm action

Compact arm actions are a legitimate strategy, not a fault. Less time for the hitter to see the ball, easier to repeat, and common out of the bullpen. A short arm can still be **carried** by the chest, which is what makes it different from a push.

The test is what drives elbow extension, not how far the arm travels. Short and whipped is fine. Long and pushed is not.

NOT THE SAME THING

A cutter

If the cut is the pitch, and he lives on it, you are looking at a weapon rather than a symptom. Natural cutting actions are where a lot of good cutters and sweepers come from.

Confirm on ball flight data before removing it. The question is whether the pitch plays, not whether the hand does something unusual on the way through.

Where this sits in the library

The arm is downstream of everything

Cause five, the upper half flying open, has its own document in *Nothing Left to Turn*. Causes six and seven, tissue restriction and fake layback, are covered in full in *Allowed, Not Made*. And the reason a chest fails to deliver rotation in the first place is usually one of the three lower half documents.

Which is the pattern across this whole library: **an arm fault is almost always a report from somewhere else**. Fix the arm last.

Sources

- Tread Athletics — How to Fix a Pushing Arm Action: 7 Causes and Solutions
- Tread Athletics — Problem Solving Your Lower Half Pitching Mechanics
- Fleisig et al. — Kinematic Parameters Associated With Elbow Varus Torque in Elite Adult Baseball Pitchers
- ASMI — The Clinician's Guide to Baseball Pitching Biomechanics
- Driveline — A Different Model for Cueing Pitching Mechanics
- Driveline — How We Interpret Biomechanics Reports
- ASMI — Increases in Ball Weight and Size Decrease Elbow Varus Torque During Baseball Pitching
- Effects of a six week weighted implement throwing program on velocity, kinematics, arm stress and range of motion

Back him up and throw. Pushing cannot produce distance, which makes long toss the only diagnostic that explains itself.