THE BRUCE LEE BLUEPRINT · FREE SELF-CHECK SHEET

Did Your Hip Slow Down?

Film 5 crosses. At the frame your hand is fastest, check how much speed your hip has left. All you need is a phone and a pencil.

In my own clips, by the time my hand reached top speed, my hip had already slowed down, on all five crosses I measured. My hand's top speed came out about four times my hip's. This sheet shows you how to run the same two checks on yourself with a phone, a heavy bag and a pencil.

5 of 5	0 to 22%	3.6× to 5.2×
crosses where my hip had slowed by the frame my hand peaked	of its own top speed was what my hip had left at that frame	my hand's top speed compared with my hip's top speed

What this check is, and what it is not

It looks at **speed**, at one moment. It does not measure force or power. It does not tell you whether your punch is good or bad, and it does not show what is right for you. It is a few short clips, one camera angle and one day. Treat it as a way to look, not a verdict. The idea that a heavy part can hand its speed to a light one is **physics I did not measure**.

What you need

- A phone that films at **30 frames per second** or faster (60 is better)
- A stand, or something solid to lean it on
- A heavy bag, or open space to throw into
- 3 small stickers or bits of tape (they help a lot)
- A free app that steps through video **one frame at a time**. The free version of DaVinci Resolve does. So do many phone video editors.
- A pencil, a clear ruler and this sheet, printed

The 5 steps

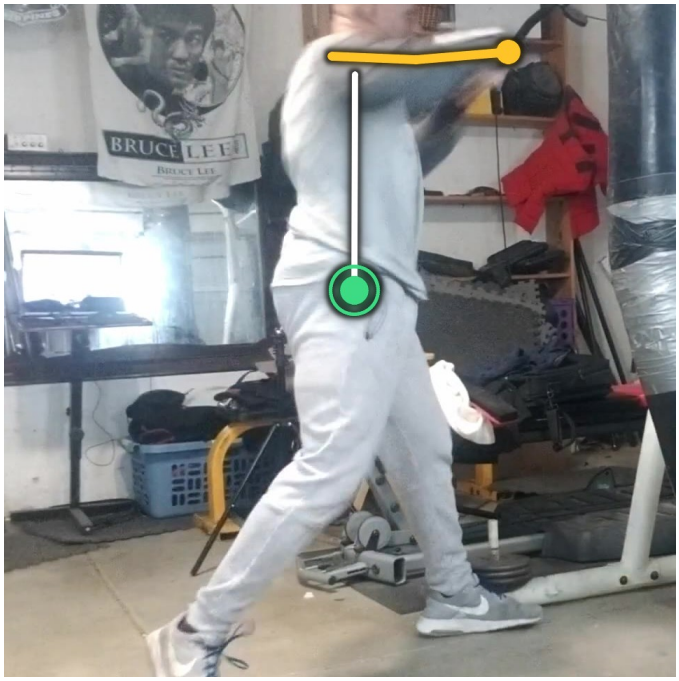
1. Set up the camera side-on (page 2)
2. Put on your dots (page 2)
3. Film 5 crosses (page 3)
4. Find the frame where your hand is fastest (page 3)
5. Check your hip at that frame, log it and plot it (pages 4 and 5), then read your result (page 8)

Safety first. Warm up. Throw at the effort you normally train at, and stop if anything hurts. I am 63 and I do my own research with sources checked. I am not a doctor, physical therapist or scientist, and this is not medical advice.

Step 1. Set up the camera

- Put the phone **side-on**: at a right angle to the line your punch travels, so the camera sees your body from the side.
- About 8 to 10 feet away, at hip height, on a stand or leaning on something solid. Do not hold it.
- Keep your **whole body** in the picture, head to feet, with the bag.
- Film at **30 frames per second or faster**. 60 is better here: your hip's slowing happens in a few frames, and 60 makes each frame half as long. Lock focus and exposure if your phone allows.
- Light the room evenly. No bright window behind you. Plain clothes make the dots easier to see.

Step 2. Put on your dots



My own frame, from my cross 2, at the moment my hand reached top speed. The dots show where yours go.

Stick a small dot, sticker or piece of tape on:

● **HIP.** The side of your hip that faces the camera, at belt height.

◆ **WRIST.** The wrist of your punching arm. The edge of the glove cuff works.

No stickers? You can still do the check by eye on a belt buckle or belt line and the glove cuff. It is harder, so expect more close calls.

Step 3. Film 5 crosses

- A cross is the straight punch from your **back hand**. Throw 5, one at a time, at the effort you normally train at. Pause a second or two between them so each one is easy to find.
- Throw them **your normal way**. Do not try to slow your hip on purpose. The check only works if you punch like you usually do.
- Watch the video once. Can you see both dots in every punch? If not, move the camera or the lighting and film again.

Step 4. Find the frame where your hand is fastest

A dot's **step** is how far it jumps from one frame to the next. When you step through a video one frame at a time, a fast dot jumps a long way and a slow dot barely moves. The frame where your wrist dot jumps the farthest is your **hand frame**: write that number down for each punch.

> **Only look at the punch going out toward the bag**
> Pulling the arm back also makes a big jump. Ignore it. Stop looking when your arm stops going forward.

The quick way (by eye)

1. Open the video in an app that steps **one frame at a time**, with the frame counter showing.
2. Find the start of punch 1. Step forward one frame at a time and watch only the wrist dot. Find the frame where it jumps farthest from the frame before. Write that **hand frame** down.
3. Go back to the start of the same punch. Now watch only the **hip dot**. Find its biggest jump in this punch.
4. Go to your hand frame. Look at the hip dot's jump **in that one frame** and compare it with the hip's biggest jump. Is it about as big, about half, or small? Write it down as **still racing**, **slowing** or **slowed**.
5. Do the same for punches 2 to 5.

This gives you a rough read. For numbers you can check later, use the careful way on the next page.

Step 5. The careful way (with a ruler)

Do one punch at a time. You will read two dots on a ruler, frame by frame, and then do two sums.

1. Pause on the first frame of the punch. Tape a clear ruler flat across your screen, left to right, with the numbers **increasing in the direction your punch travels**. Keep the video window the **same size** the whole time. Do not zoom between frames. A big window gives you a bigger ruler reading.
2. Start at the frame just before your hip begins to turn. End when your arm stops going forward. That is usually 20 to 30 frames.
3. For every frame, read the ruler (millimeters) at the **hip dot** and at the **wrist dot**. Write both down.
4. **Step** = this frame's reading minus the frame before. If a dot moved back, the step is a minus number.
5. Circle the **biggest step** in each of the two step columns. The wrist's biggest step is your **hand frame**.
6. Do the two sums below and copy the results to your log on page 5.

Frame number	Hip position (mm)	Hip step	Wrist position (mm)	Wrist step

The two sums

- **Hip left** = hip step **at your hand frame** ÷ hip's **biggest** step × 100. Result: _____ %
- **Hand ÷ hip** = wrist's biggest step ÷ hip's biggest step. Result: _____ ×

Make copies of this page: you need one per punch.

Log it and plot it

Cross	Hand frame	Hip step at hand frame (mm)	Hip's biggest step (mm)	Hip left (%)	Wrist's biggest step (mm)	Hand ÷ hip (×)
1						
2						
3						
4						
5						

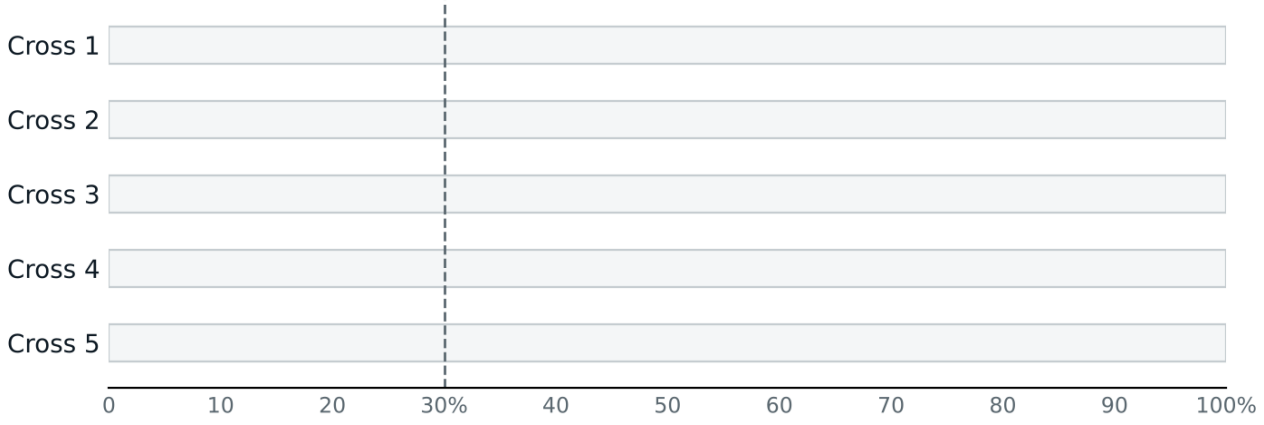
Date: _____ Camera: _____ frames per second Hand: _____

How I read the "Hip left" column

Under 30% = the hip had slowed. **30% to 60%** = a close call. **Over 60%** = the hip was still racing.
These cut-offs are my own rule of thumb, not a standard. The hip is falling fast at that moment, so a miss of a frame or two moves the percent a lot. In my clips, putting my hand frame just 2 frames earlier would have read 30% to 69% instead. Look at all five, not at one.

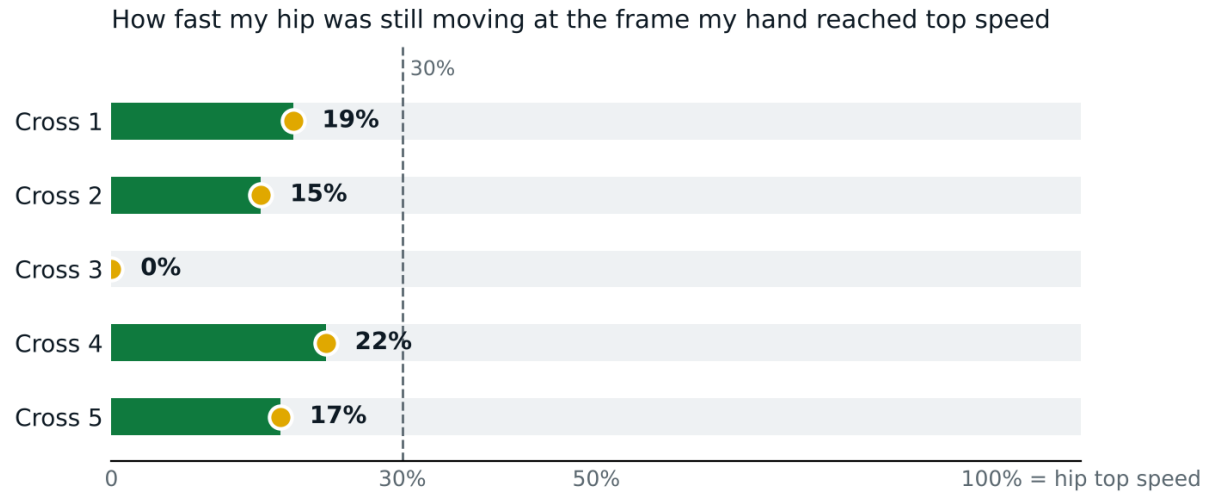
Plot your "Hip left" for the five crosses

Shade each row from 0 to your Hip left (%). The dashed line is 30%: a bar that stays short of it means your hip had slowed.

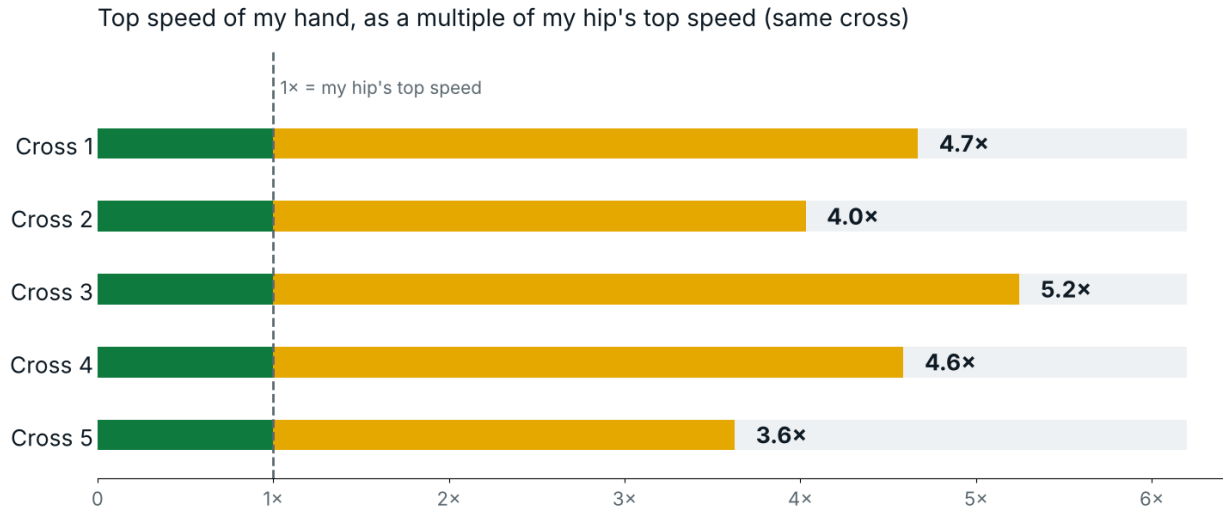


My count: _____ slowed _____ close calls _____ still racing (out of 5) **Hand ÷ hip:** ____ ×

My result: five crosses



Five right-hand crosses on a heavy bag, from three short clips in October 2026. The green bar is how fast my hip was still moving at the frame my hand reached top speed, as a percent of the hip's own top speed. The gold dot marks that frame. On cross 3 my hip was moving slightly *backward*, so I show it as 0%.



The green part is my hip's top speed (1×). The gold bar is my hand's top speed in the same cross. Both are how fast the dot moved across the screen, toward the bag. The hand number includes the push from my body moving forward.

Cross	Hip left when my hand peaked	Hip top speed to hand top speed	Hand ÷ hip top speed
1	19%	5 frames	4.7×
2	15%	5 frames	4.0×
3	0% (slightly backward)	6 frames	5.2×
4	22%	4 frames	4.6×
5	17%	6 frames	3.6×
Overall	**0 to 22%**	**4 to 6 frames**	**3.6× to 5.2× (average 4.4×)**

How I measured it, and what I did not

I filmed myself side-on on my phone at 30 frames per second. Software marked my hip (halfway between my two hip points) and my right wrist in every frame. Hip speed is how fast the hip point moved toward the bag on the screen. Hand speed is how fast the wrist moved the same way. For each cross I took the hip's top speed and the hand's top speed on the way out, and I looked at the hip's speed at the frame the hand was fastest. Speeds are in torso lengths per second so that clips filmed from different distances can be compared.

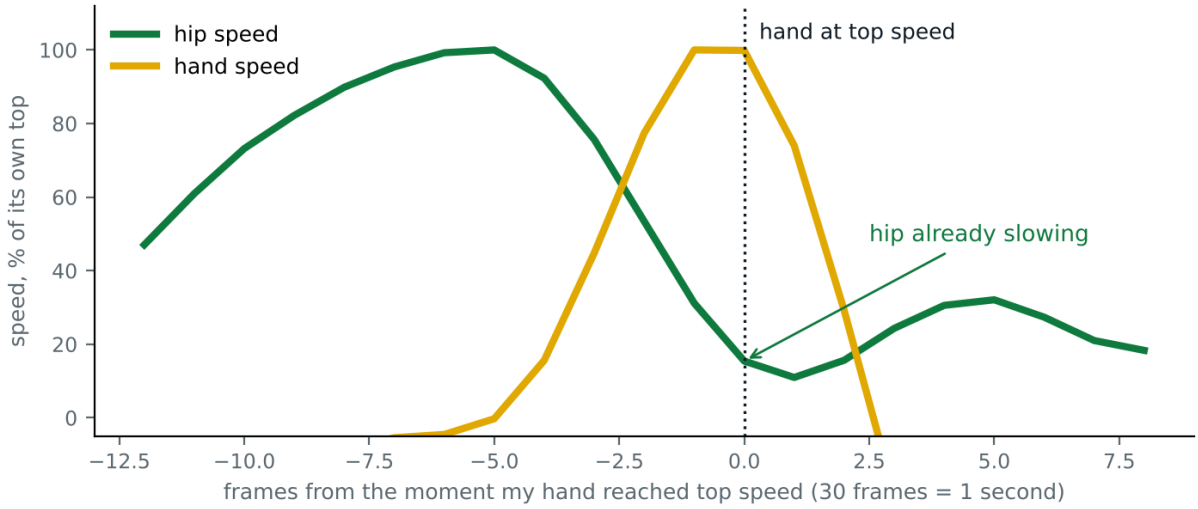
The software is approximate: about **2 frames** either way (about 0.07 second). The direction held on all five crosses. The exact percent does not: with the hand's peak 2 frames earlier my hip-left numbers read 30%, 38%, 53%, 54% and 69%; 2 frames later they read −5% to 44%.

What I did not measure

Force. Power. How hard the punch landed. The mass of any body part. Any punch other than a straight right hand. Anyone but me. A fight. This is one person, a few short clips and one heavy bag, and it says nothing about whether it holds for you.

The physics idea (not measured)

Momentum is mass × speed. A heavy part, like the hips and trunk, can give up speed while a light part, like the hand, picks it up and ends up moving much faster. That is the idea behind "the heavy hip slows, the light hand speeds up". I measured the speeds. I did not measure any mass or any force, so this page does not show that the idea is the whole story.



My cross 2. Hip speed (green) and hand speed (gold), each as a percent of its own top speed, in the frames around the moment my hand reached top speed (the dotted line).

Reading your result

What you found	What it means	What to do next
Slowed on 4 or 5 of your 5	The same pattern I found in my clips. That is all it says. It does not say how hard you hit.	Repeat in a week with the same setup. See if it holds.
A mix of slowed, close calls and still racing	Normal for a first look. A few punches can be thrown differently from the rest. A frame or two of error can also move a punch from one group to the next.	Look at which punches were different: the first one, the last one when tired, a hidden dot? Film 5 more, at 60 frames per second if you can.
Still racing on most	Not a verdict, and not a problem by itself. A tilted camera, a hidden dot or 30 frames per second being too coarse can all cause it.	Check the camera is side-on. Retest at 60 frames per second. If it still holds, show it to a coach you trust.

What this check cannot tell you

- How much **force** or **power** your punch has. This sheet only checks speed at two moments.
- Whether your **technique** is good or bad.
- Whether it **matters in a fight**.
- Anything about punches other than the one you filmed, or any day other than today.
- A camera sees only two dimensions. Your body moves in three, so this is a side view, and an approximate one.

Next steps

1. Tell me your count. Comment on my Short: **how many of your 5 crosses had the hip slow down before the hand peaked?**
2. Repeat the check in a week. Same camera spot, same dots, same hand.
3. Try your other hand and see if it comes out the same. I have not measured that.
4. Check which of your two dots **peaks first** with my other free sheet, “Hip First or Hand First?”.
5. Watch the full breakdown of how the body moves in a punch (link below).

The full breakdown: youtube.com/watch?v=aydD8CAM4OM
The channel: youtube.com/@ArtOfMotionPeace (The Bruce Lee Blueprint)

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