

Counter Techniques (kaeshi-waza)

How physics makes Ju-Jitsu counters work | Featured principles | Why timing beats strength

In this issue, we're breaking down the biomechanical principles behind counter techniques (kaeshi-waza), the game-changing moves that flip an attacker's momentum back on themselves. Whether you're training or just curious about the science behind your practice, understanding these principles will change how you analyze and practice Jiu-Jitsu.

THE PHYSICS OF THE COUNTER

Counter techniques are where JiuJitsu meets Newton. Instead of meeting force with force, a good counter uses the attacker's own energy against them. Here are a few core principles at play:

1. Kuzushi — The Art of the Unbalance

Every throw starts with kuzushi, or breaking your opponent's balance. But here's something to consider: **when someone attacks, they break their own balance first.** The moment their centre of gravity shifts past their base of support, they're in a vulnerable zone. A skilled defender doesn't need to push hard—they just need to give that already-unstable body a nudge in the right direction. Think of it like a tall bookshelf that's already leaning. One tap at the right moment brings the whole thing down. Naturally all this must happen with the correct timing.

2. Momentum Redirection

When an attacker steps in for a throw, they're carrying forward momentum—mass in motion. Resisting that energy directly is not helpful. Instead, counters redirect it. The defender creates a new axis of rotation that aligns with where the attacker is already moving, converting straight-line momentum into rotational force. A small push at the right angle sends the attacker spinning.

3. Leverage — Work Smarter, Not Harder

Where you grab matters as much as how hard you pull. By gripping points far from the attacker's centre of gravity (think upper body, sleeves, collar), you maximize the leverage and multiply your

effectiveness. This is why grip fighting is such a big deal in competitive sports, when you control the grips, control the levers, control the fight.

4. Ground Reaction Force — Rooted Like a Tree

To throw someone else, you need to stay grounded yourself. When you push into the floor, the floor pushes back. Skilled practitioners channel this upward force through their legs and hips to power a throw without losing their own footing. Wide, deliberate foot placement creates a stable "support polygon" that keeps the defender balanced even while redirecting the attacker's weight.

5. Conservation of Momentum

Once an attacker commits to a movement, like the swinging leg of an Osoto Gari, they've locked their body into that spin. Their momentum is going one way, and it takes external force to change it. A counter provides exactly that force at the right pivot point, reversing or redirecting the rotation. The attacker literally can't stop themselves mid-throw, which is what makes a well-timed counter so devastating.

6. Inertia and the Window of Opportunity

Timing is everything. When an attacker extends their limbs and shifts weight forward, they become easier to rotate. But this vulnerability is temporary. The ideal counter window is within the first few moments after the attack begins. Too early, and the attacker hasn't committed enough to be off-balance. Too late, and they've recovered their posture.

Canadian Jiu Jitsu Council Directors



Shihan R. W. Forrester (d. 2013)

