

POSTURE FOR TAKE-OFFS AND LANDINGS

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Have you heard yourself saying, "Get your chest up for that take-off", or "Keep your chest up when you land" more than once? More than a million times? Have you noticed that your athletes, along with half of the population of the gymnastics world, lean way over to start their (insert one or more):

- Standing back handsprings
- Standing back tucks
- Punch fronts
- Jumps of almost any variety
- Leaps
- Etc.

I'm one of the many frustrated people who try over and over to correct this posture, and I've tried to figure out why it is such a universal error. I've come up with some possibilities, and though I'm sure there are many more, I'd like to address just a few. **To understand what's happening, look at the picture #1 and #2.**

Notice that in each picture the center of gravity (approximately the belly button) is over the feet. In picture #1, balance is maintained by keeping the hips over the heels, the chest over the core and, the head over the chest. As you can see in #2, a shift in one part of the body requires a shift in another to keep the balance working. If the athlete pushes her hips backward, she must lean her chest forward to stay in balance.

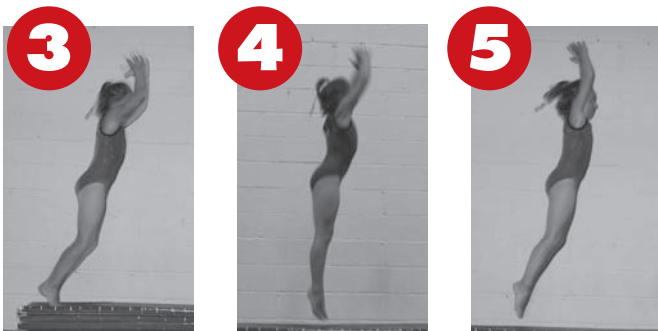
A. Let's talk about someone who is first learning a back handspring. We all know that the weight must be shifting backward while jumping for a back handspring, but a child who is nervous or unsure will not want to lean back and be off-balance as they are initiating the jump for this brand new skill! Therefore, while almost every coach in the world is telling this gymnast to "sit," shift the weight backward and jump, self-preservation, a very powerful motivator, is telling the gymnast to save her life by leaning forward to stay in balance. I think this lean forward can become the "comfort zone" as a take-off position, and is then carried forward to jumps and leaps.

To try to fix the posture for back handsprings, going back to basics and working with athletes to keep that weight shifting back by pushing the hips and core back, is one way to deal with the problem. As athletes grow in both maturity and skill level, it is easier to have them focus on the part or parts of the body that initiate movement to make the skill work; and to have them pay attention to their "placement" (alignment) while practicing their basics. Emphasizing the shape (vertical chest) going into a back handspring and correcting the weight shift will also help.



B. Trying to correct jumps and leaps is a different issue. Working the plié (bent knees) position and movement both before and after the skill can require several methods of attack. One of the first things I ask athletes to try is, instead of lifting the chest up, to push the knees forward. Moving the knees forward will help put the hips over the feet, thus allowing the chest to rise without effort. Look at the pictures below to see the difference in where the knees are in each picture. In #1, they are much more forward than in #2. Having the athlete focus on the knees and where they should be during the take-off and landing of jumps, can help keep the torso in its proper position.

One of the more common mistakes in leaps (switch leaps, split leaps, etc., is a forward lean in the upper body. (see picture #3)



Often this can be corrected by having the athletes do the following:

1. Jump as high as they can, with an arm swing, staying in place (#4). Usually this takes a few tries, as they really don't believe you want them to jump as high as they can. You can see from picture #4 that this athlete leans forward, even on her attempts to jump straight in the air.
2. Figure out how to travel that jump forward about two to three feet without leaning the chest forward at all. The challenge will catch their attention, and they usually rise to the occasion, figuring out that the hip push is what powers that forward motion. In picture #5, you can see that the athlete is just starting to figure out how to keep her chest more vertical by concentrating on her hips.
3. Repeat that forward jump a few times so that the athlete is comfortable with the hips initiating the forward motion.

4. Have the athlete do a leap, or leaps, concentrating on the same hip action, keeping the shoulders in a vertical position.

C. But what about the kids who just can't get or keep their chests up in the take-off position? Have you checked the stretch in their Achilles tendon?

There are some athletes who are physically unable to push the knees very far forward without the heels coming off the floor, due to tight

"Achilles" in the calf and down to the ankles. **Look at picture #6 to see the difference in the two athletes' ankle flexibility.**

Stretching and strengthening the calves in a lengthened position can be an area skipped over during workouts.



Some common and easy exercises/stretches to help in this area are:

1. Lean forward against a wall or stable surface, keeping the back leg very straight and the heel on the ground. With the toes pointing straight forward and the hips square, push the hips forward until the calf muscle is stretching. Do the same with a bent knee, as that stretches the other major flexor in the leg. Of course, this must be done on both legs.

Notice that in #7, this athlete has very tight ankles, and is unable to push her hips forward.

She is compensating for that tightness by creating a hip angle. **The athlete in #8 is able to keep her hip line more open.**





In #9, she is trying to bend her back knee, and cannot, due to her very tight calves. The athlete in #10 shows a good amount of flexibility.



2. Hang the heels off a step, and let the calves stretch with the weight of the body. Again, make sure the toes are in a parallel position, pointing straight ahead, and the torso is straight, without an arch in the lower back. Notice the difference in the flexibility in figures 11 & 12!



3. Sitting in a pike position on the floor, flex the feet so that the heels lift off the floor, the knees straighten, and the toes and balls of the feet are pulled back as far as possible. Some athletes can barely make the foot/leg angle 90°, which means they have a hard time standing vertical with their heels down! One way to help relax the muscles in the soles of the feet (another way to help allow for a greater range of motion in the ankles,) is to lean forward, placing the hands over the tops of the toes, pulling the toes backward towards the knees, and massaging the soles of the feet with the fingers. If the athlete is very tight in that area, this can be a painful experience. (#13)



4. Sit in a pike as above, and use a bungee to pull the feet back into a flexed position, stretching the Achilles and calves. (#14)

5. Sit on the floor with knees bent, feet flat and hands around the shins. Flex the feet, pulling the toes back as far as they can go, then put the feet back flat on the floor. Repeat this several times, in a relatively quick manner. Do often.

D. Sometimes when landing, an athlete will not let her knees bend forward. This can be her body's method of self-protection; her body telling her she's not strong enough to land that way. The landing mats, pits, spring floors, and other training tools used today to protect the athletes' bodies from overuse have also allowed our athletes to avoid learning the proper landing action. A correct landing uses the knees and ankles, with the core in an upright and straight, or very slightly hollowed position. During landings the body has to absorb the extra weight of the falling body somewhere. When the correct action does not happen, the force of the landing often ends up being absorbed in the hips with an arched lower back. Working the proper landing position will save some lower back pain, but requires strong knees and ankles through a larger range of motion than is used for tumbling. Punch take-offs, for example, are done on an almost straight leg and extended foot, and most athletes are fairly strong with the legs in that position. But often those same athletes cannot do a controlled demi or grande plie´ because the strength required to work through that more flexed position is not one they have developed. Strengthening the legs, knees, ankles and core through this larger range of motion will allow them to perform safer landings.

(Side note: "plie," is both a verb and a noun. An athlete can be "in plie," meaning she is standing with her knees bent, or she can be "plie´ -ing," meaning she is performing the action of bending her knees. Many times an athlete performs her landings "in plie," instead of bending her knees as she is landing. The loud noise a gymnast makes upon landing on beam, for example, is most likely from landing with her knees already bent and held tight in that position.)

Plie's (the movement kind) done correctly are a wonderful way of strengthening the legs, hips and feet. A conscious, slow bending and straightening of the leg, done with both parallel and turned out feet, is probably the most effective exercise to work these muscles, and can be done with minimum fuss. Faster plie's and releve's, done with the emphasis on proper placement through the core, are one of the easiest ways to reinforce the correct alignment for jump take-offs and landings.

Good luck with your athletes, and helping them take pressure off their lower backs by reinforcing proper posture for landings and take-offs. Start when they're young, and reinforce often! Another benefit? Higher leaps and jumps, higher punch fronts, and higher standing back tucks! ✖