
Effective Body Positioning

Article by Chuck Woodward; Ryan Ojerio photo

Rock climbing uses a wide variety of muscle groups throughout the body. Your shoulders, back, triceps, forearms, legs, abdominals, and even tiny muscles in your feet that you don't use when walking are all involved when climbing. So, as a basis for efficient climbing, you should understand the relative strengths of the different parts of your body. Pay attention to the incredibly important comparison between your torso and your lower body. How long can you stand on your hands? How long can you stand on your feet? Coming from this perspective, any position that allows the transference of your weight from your arms to your legs is going to be not only desirable, but also the most effective use of your energy.



There are several keys to effective body positioning. How you manage the force of gravity when you are up on a wall depends on many factors. How positive are the holds? How steep of an angle is the wall? How much oppositional force do you need to maintain to stay on the wall? How positive are the feet? Despite all of these variables, there are certain fundamentals of good body positioning that apply to all situations. (Tip of the hat to physics!) The three fundamentals are arm position, hip position, and the centerline of weight distribution with respect to positivity. Though clean and effective footwork is an integral part of body positioning, the focus these fundamentals provide help to clearly delineate the best implementation of this technical footwork for maximum efficiency.

The primary goal of good body position is to minimize the amount of energy used to stay on the wall thereby increasing efficiency. Following this principle, the first fundamental, arm position, focuses on finding positions that eliminate muscle tension in the arms as the means of attachment. This is accomplished by maintaining straight arms. Keeping your arms straight transfers the load of your weight from muscle tension in your arms to your skeletal structure, so hanging from your skeletal structure saves valuable energy. Any time you find your arms bent, you are potentially expending energy unnecessarily.

The actual orientation of your body while maintaining straight arms changes with the terrain and with the sequence. A crucial element in terms of the effectiveness of this orientation is the position of your hips, the second fundamental. When you climb with your hips open so that your knees both bend to the outside, it is called the frog position. This position forces the engagement of your core (a combination of the abdominal, back, and hip muscles) to hold it successfully. A substantial amount of energy is required for the frog. Another possible orientation of the hips is where the outside of one hip is turned in towards the wall. This has two important effects. First, by turning a hip into the wall while keeping your arms straight, you twist your torso. This twisting action locks your core mechanically rather than using active muscle tension. Second, though you are still using your hip muscles, they are used in conjunction with your legs instead of your back. The transference of load from the back to the stronger leg muscles and the elimination of core engagement are the distinct advantages to this hip orientation. Just like with effective arm position, if you find yourself frogging, you may be wasting energy needlessly.

The third fundamental is a little more intricate, a little more complex, and certainly more of a mouthful: the centerline of weight distribution with respect to positivity. Within the dynamics of climbing lies a fascinating relationship between positivity and gravity. In many respects, positivity is a vaguely quantifiable concept describing the ease with which you can hold on, or in other words, defy gravity. Yet, on a deeper level, it is not simply the constant struggle against gravity, but a delicate and sensitive dance with gravity. Climbing is comprised of measured instances of direct antagonism coupled with moments of embracing and redirecting the Earth's inexorable downward pull for the maximum benefit.

Certain positions on certain holds have very clearly defined directions of positivity. Placing your body in such a way that takes the greatest advantage of this directional positivity is an easy concept to comprehend, however, acting on this simple directive can be counterintuitive and can require a high level of mental and physical control. For some holds, the positivity is maximized by simply hanging straight below them and letting gravity magnify your contact strength. Other holds, like sidepulls and gastons, require obvious direct oppositional force to obtain the greatest purchase, usually hips turned into the wall while flagging a leg. The positivity is magnified when you align the centerline of your weight with the direction of the oppositional force. This position concentrates your muscle tension in the most advantageous direction and redirects gravity to enhance the positivity.

Slopers are a much more delicate beast. Since they afford no edge for gripping, the importance of body position is amplified. Contact friction, the means by which you stay on a sloper, is comprised of two integral factors: the surface area of contact and the directional pull. When you address a sloper, you want your weight to be situated directly below the hold so that your centerline of weight distribution aligns as closely as possible to the natural gravitational pull. In this position, you are actually using gravity to increase your contact friction. In some instances, this even allows your wrists to touch the hold thereby increasing the surface area of contact. The more you pull up and engage muscle tension in your arms, shoulders, and core, the more the positivity decreases. Relaxing and hanging down off of straight arms can feel like the last thing you should do, but this position actually lets gravity work in your favor.

The ideal body position for slopers is also the ideal body position for matching your hands on a hold. (VIDEO) Sagging down on straight arms directly below the hold increases the positivity and lessens the negative effects of gravity, which facilitates the transference of your weight from one hand to another. Increasing the positivity means that you need less surface area of contact friction to hold on so that during this delicate transference it is not necessary to maintain constant contact with all of your strongest fingers. You can switch out the stronger fingers and still remain on the hold. If the hold's directional positivity is not straight down, as on a sidepull, the arms are still straight and the centerline of your weight is still in line with the direction of

positivity.

In summary, the fundamentals of good body positioning are arm position, hip position, and weight distribution, and efficient climbing entails using the hands mainly for balance, allowing the stronger legs to propel you up the wall. So, how exactly do you combine good body positioning with movement in such a way as to encourage the legs to do most of the work? ([Link to Movement Principles](#))

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