

## Healing (and Preventing) Wrist Injuries

*Proper alignment of the hands and balanced muscle tone in the forearms can protect vulnerable wrists.*

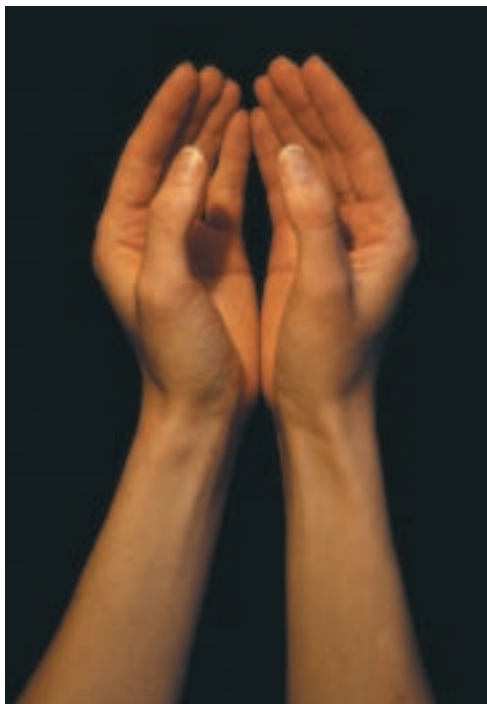
By DOUG KELLER

Few things put the brakes on a yoga practice like a wrist injury. And though it may seem like the injury is the result of your practice, the cause actually lies in the imbalanced way we use our wrists in daily life. Once we become aware of these imbalances, asana practice can become a powerful tool for correcting them.

The health of our wrists depends upon the strength and tone of the muscles on the tops and bottoms of our forearms, as well as upon how thoughtfully we bear weight on our hands and wrists. Although damaging muscular tension comes from repetitive use, wrist injuries themselves are usually caused by the way we put weight upon our hands.

The top of the forearm—from the back of the hand through the upper part of the forearm—is usually tense from habitual overuse, thanks to many common activities: typing, driving, writing, chopping vegetables, or playing musical instruments or sports. Nearly any activity you can think of involves lifting the arms, bending the wrists back to some degree, and holding them that way. This hardens the forearm and contracts the top of the wrist joint, causing tightness and pinching between the bones at the crease of the wrist.

For most of us, the bottom of the forearm—from the palm through the underside of the wrist and forearm to the inner elbow—is chronically weak and underused. We use these muscles when we push with our hands; we use the tops of the forearms to lift our hands when bending at the wrists. In most hand-intensive activities, we rest the weight of our hands on the wrists while actively working our fingers and tops of the wrists. Over time, the imbalance in muscle tone leads to tendonitis in the wrist and elbow. But even more is at stake than just muscular ten-



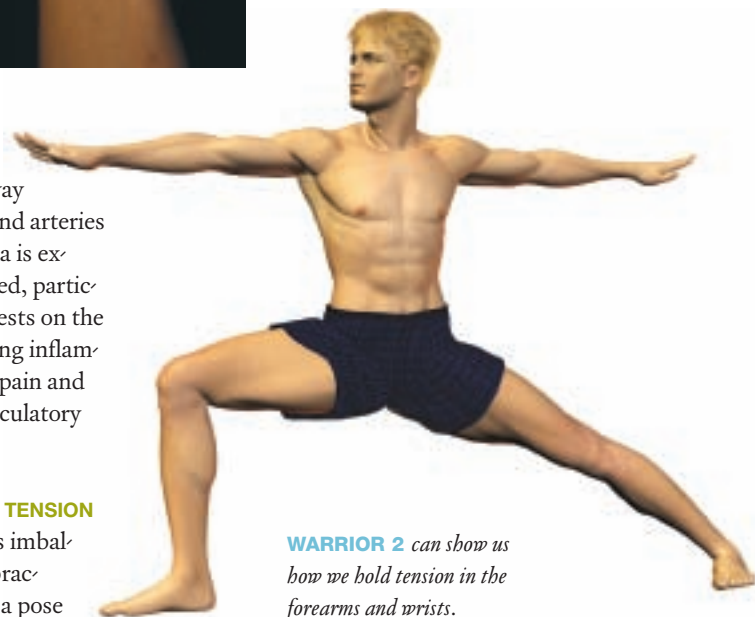
sion, because the underside of the wrist is the passageway for sensitive nerves and arteries of the hand. This area is exposed and unprotected, particularly when weight rests on the wrist, and the resulting inflammation causes nerve pain and damage as well as circulatory problems.

### HABITS OF HOLDING TENSION

We tend to bring this imbalance into our asana practice. For example, in a pose

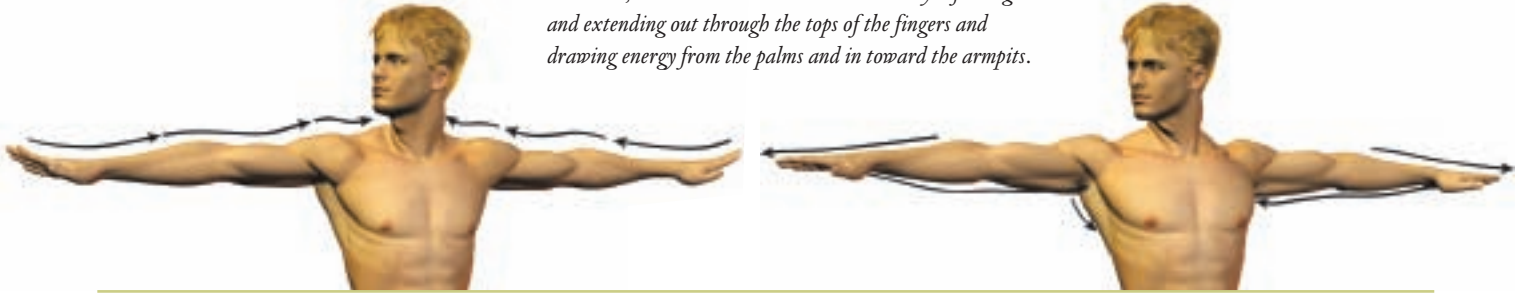
such as *virabhadrasana II* (warrior 2), we aim to keep the arms lifted and extended, thus opening the chest. No weight is placed on the hands, but holding the arms up makes the tops of the forearms and the shoulders, and even the sides of the neck, work all the harder. This effort shows itself in the fingers, which often bend upward in an attempt to stretch fully, hardening the forearms where they are already chronically tense. As is often the case, our effort to give 100 percent in a pose increases the imbalance.

To experience this feeling—and to see if it is familiar—stretch your arms to either side as in *virabhadrasana II*. Reach strongly through your arms and flex your fingers (not your wrists) >>



**WARRIOR 2** can show us how we hold tension in the forearms and wrists.

**CORRECTION** *Flexing the fingers hardens the forearms, shoulders, and neck. Correct this imbalance by softening and extending out through the tops of the fingers and drawing energy from the palms and in toward the armpits.*



upward. Feel how your forearms harden and your shoulders quickly tire. Even the sides of your neck begin to fatigue because you are holding your arms up from your neck. Ask yourself if you do this in your practice, at least to some degree.

We can do the pose differently, firming the undersides of the arms to provide support, thus relieving tension on the tops. In fact, virabhadrasana II can provide a constructive lesson in how to hold

our arms up and extend them with the proper tone and support of the muscles on the undersides of the arms. Do the pose again, but this time, while extending through your arms, soften your wrists and lengthen through the tops of your fingers. Now bring your attention to the palms of your hands and draw energy through the palms and up to your armpits, as if breathing in through the palms. Firm the undersides of your forearms as if you were gently pressing down

through your palms, and feel how your arms seem to float as your shoulder blades settle into your back. This shifts the support of your arms to your shoulder blades and the stronger muscles of your upper back—where it should be—and relieves tension in your deltoids and neck. As the tops of your hands, forearms, and shoulders soften and relax, the pose will feel lighter.

We may also bring our bad habits into poses in which the hands bear

weight, and these are potentially more damaging. In downward-facing dog, for example, the majority of practitioners put far too much weight on the heels of the hands. In some cases, the hands appear almost cupped, with the mounds

away from the ground, while weakness in the underside of the forearm (as well as tightness in the saddle of the thumb) makes it difficult to press through the palm firmly enough to relieve the weight on the wrist.

Despite these challenges and common misalignments, the hands are designed to bear weight. Certain parts of the hand are more suited to this task than others, however, and it is essential to know the difference. >>

*Weakness and imbalance in the forearms may make it almost impossible to bring the hands into proper alignment in downward-facing dog.*

of the index fingers coming away from the floor. This is not necessarily the result of a lack of awareness; rather, weakness and imbalance in the forearms may make it almost impossible to bring the hands into proper alignment.

To check yourself, hold downward-facing dog for 30 seconds. Then look at the palms of your hands. The part of the palm that carried the most weight will turn red the most quickly. For many of us, that will be the heel of the hand on the little finger side. Tension in the top of the forearm causes the finger mounds to pull

**DOWNWARD DOG** *This popular pose is key to learning how to properly bear weight on the hands.*



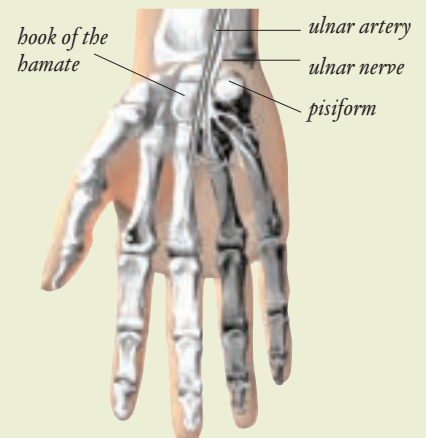
### CORRECT HAND ALIGNMENT FOR WEIGHT-BEARING POSES

The bones of the wrist are organized so that the strongest bones transfer weight from the mounds of the thumb and the index and middle fingers directly to the radius, which is the stronger of the two bones of the forearm. The radius in turn transfers the weight to the upper arm bone—the humerus—which sits directly on top of the radius, and thus to the shoulder girdle.

By contrast, the ring and little fingers connect to a bone in the heel of the hand called the pisiform, which you can feel as a small but prominent bump at the heel of your hand, in line with your little finger. The ulna rests on this part of the wrist; at the other end it forms the knob of the elbow. The ulna is not meant to be directly weight-bearing, but facilitates the rotation of the forearm.

The ulnar artery and ulnar nerve pass through a space just to the inside of the pisiform, protected by a small sheath of fascia. If we consistently put weight on the heel of the hand, we not only irritate the soft tissues of the wrist, causing them

**ANATOMY OF THE WRIST** *The bones shown in white are suited for bearing weight; those in gray are not. This is because the pisiform and the hook of the hamate form a passageway at the base of the wrist through which the ulnar artery and the ulnar nerve pass.*

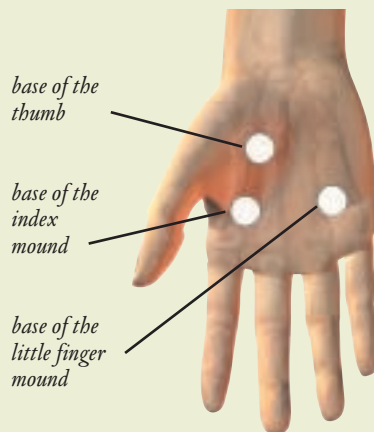


to swell, but risk damaging the wrist by putting pressure on this nerve. The sensitive carpal tunnel at the center of the wrist can become inflamed as well. The hand is simply not built to take weight here.

In order to protect and strengthen the wrist when the whole palm of the hand is on the floor, the greater part of your weight should be directed not to the heel of your hand but primarily to the mounds of the fingers—particularly the mound of the index finger. By pressing down through the mounds of the fingers, you are also engaging the underside of the forearm. The weight should be placed on the heel of the hand only secondarily when the whole palm is the foundation for bearing weight.

This alignment ensures proper muscular lift at the wrist, protecting the sensitive carpal tunnel, while the effort to work the underside of the forearm balances the muscle tone between >>

**ENGAGING THE FOREARM** *Place your weight on the mounds of the fingers and lift energy in the palm of the hand from these three points to work the forearm correctly.*



*Doug Keller has a master's degree in philosophy from Fordham University. His yoga journey includes 14 years of practicing in Siddha Yoga ashrams, intensive training in the Iyengar and Anusara methods, and nearly a decade of teaching in the United States and abroad. Asana instruction, essays, and other enlightening information is available on his website: [DoYoga.com](http://DoYoga.com).*

the top and bottom of the forearm.

If the wrists are weak or injured, they need to be progressively stretched and strengthened with a series of exercises.

#### **STRETCHING AND STRENGTHENING**

To stretch the muscles on top of the forearm and at the same time strengthen those on the underside, make a loose fist, with the palm facing upward, then do curls with the fist. This is an active stretch, meaning that your muscles must work to perform the stretch without assistance from a supporting hand or prop. You can add a one- or two-pound weight to increase the strengthening action. As a counterbalance to this exercise, turn the fist palm down and do small upward curls



**FIST CURLS** *Stretch the top of the forearm and strengthen the underside.*

with a small weight. This may seem counterintuitive, but in fact the tension in the top of the forearm is further released by strengthening in combination with stretching the muscles there.

#### **PROGRESSING INTO WEIGHT-BEARING POSES**

When there is persistent pain in the wrists or when weight-bearing is painful, work with this stretching and strengthening for a week or so before proceeding. (Caution: Persistent wrist pain may be a symptom of a deep injury to the shoulder. If you suspect shoulder involvement, see your doctor.)

When weight-bearing is no longer painful, use the strengthening and stretching exercises as a warm-up for weight-bearing poses. Begin with this preparation for downward-facing dog. Place your hands on a table with your fingers spread comfortably. Your index fingers should point straight forward, with

your hands shoulder-distance apart and turned slightly outward, so that your index fingers are parallel to each other. Practice pressing into the table through the mounds of your fingers—particularly the mounds of your index fingers—so that the heels of your hands become light or even lift slightly. Soften the tops of your hands and fingers, gently lengthening from your wrists out through your fingertips, as if your fingernails were growing. There's no need to grip or claw with your fingertips, as that would only tighten the undersides of your wrists. Instead, press through the mounds of the fingers so that the palms of your hands gently lift and hollow, particularly at the following three points: just beneath the index mound, at the mound of the thumb, and beneath the mound of the little finger. When these lift, the weight on the heel of the hand is reduced, and the muscles in the underside of the forearm are working properly.

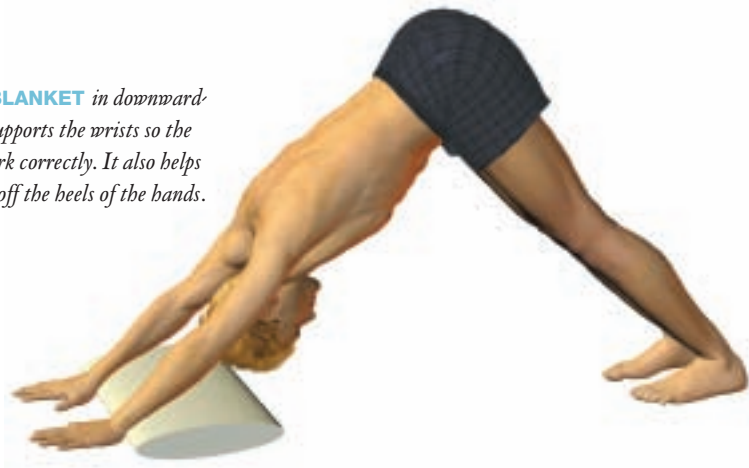
As you get used to these actions, you can gradually put more weight on the hands. First take your hands down to a lower level, such as a chair or bench, and walk your feet back into a modified downward-facing dog pose. (Make sure the chair or bench is secured against a wall so that it won't slide.) If you press properly through the mounds of your fingers and lift at the palms, your hands won't slip. Be mindful of how you distribute weight on your hands, taking care not to put too much weight on the pisiforms (heels of the hands).

In time, you can take the exercise to the floor in the full downward-facing dog pose. A folded blanket is helpful: place your palms on the floor with the blanket just behind the heels of your hands, supporting the base of your wrists. Start in child's pose and feel how the blanket provides a lift and encourages you to keep more weight on the mounds of your fingers. When you're ready, move to hands and knees and lift up into downward-facing dog. Watch your wrists during this transition, making sure that you don't drop weight into the heels of your hands, which deepens the creases across your wrist joints. Once you're in the full pose,

notice that if your weight *does* shift to the pisiforms, your hands will begin to slide because of the lift from the blanket (sometimes even on a sticky mat!). If that happens, recenter your weight on the mounds, with the tops of your fingers soft. When you make that adjustment, your hands will remain steady and you'll be working your forearms properly.

A wedge is often used to protect injured wrists. This prop also gives a lift to the heels of your hands while shifting more weight to the mounds of your fingers. If you're using a wedge, place the mounds of your fingers on the floor, and the heels of your hands on the wedge. Take the full downward-facing dog pose and keep the weight on the mounds of your fingers while lifting the undersides of your forearms up toward the armpits. Your fingers should be relatively neutral. Do not press too hard through the finger tips or extend out so much that your fingers lift up from the floor.

**USING A BLANKET** *in downward-facing dog supports the wrists so the forearms work correctly. It also helps keep weight off the heels of the hands.*



More advanced poses bend the wrists to 90 degrees while bringing much more weight on the hands. These poses, such as the handstand or the full backbend (*urdhva dhanurasana*), are far more challenging to the wrists, and they demand a good deal of strength in the undersides of the forearms. Some poses, such as upward-facing dog (*urdhva mukha*

*svanasana*), are unusual in that they bring more weight to the heels of the hands in order to work the shoulders well. These poses need to be approached with caution and should not be reintroduced into your practice until after the strengthening and tension-releasing exercises described above have restored the wrists to health. +