

# PREVENTING PAIN &

# STIFFNESS

By Jeffrey E. Spencer, M.A., D.C.

Getting rid of and controlling the stiffness and pain generated from time at the bench is a matter of time and effort and “working smart.” The main goal is to restabilize the body by stretching out the tight muscles, relaxing the tense muscles, strengthening the weak muscles and retraining the muscles to work together as a team where each is doing its job—not someone else’s. It only takes a few minutes a day. The key is to do it regularly and prioritize the steps.

## Stretching the Tight Muscles

The muscles that tend to tighten when frameworking include the chest (pectorals), base of the skull (suboccipitals), web of neck (upper trapezius), hip flexors and low back. The following guidelines should be followed for maximum benefits when stretching tight muscles:

- ◆ Stretch daily, before bed and in the morning.
- ◆ Don’t overstretch or force any movement.
- ◆ Concentrate on relaxing.
- ◆ Dress comfortably.
- ◆ Gradually move to the first point of tightness, hold the position and as the muscle relaxes gently move to the next point of tightness and hold for 30 seconds.
- ◆ Do each stretch one time for 30 seconds.

## Stretching Exercises

**1. Chest (pectorals):** stand in a doorway with hands at shoulder height and gradually lean forward until the first stretch is felt in the upper-outer chest. As the muscles relax lean a little further forward to the next point of tightness and hold for about 30 seconds. (Fig. D.11)



**2. Base of skull (suboccipitals):** interlock fingers behind skull, tuck and lower chin slightly, push base of skull back into interlocked fingers (Fig. D.12) so you feel a stretch in the muscles at the base of the skull and upper neck, hold 10 seconds, relax 10 seconds and repeat 10 times. Do not overstretch!

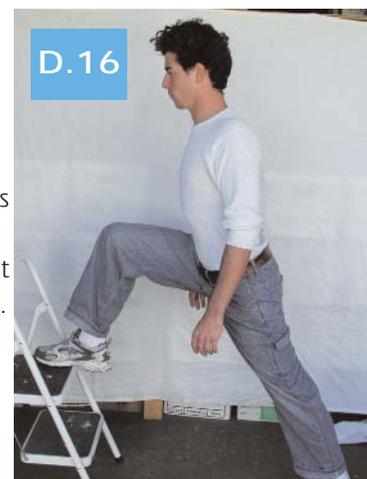


**3. Upper trapezius:** turn chin toward one shoulder, slightly drop chin toward shoulder, place hand on crown of head and let the weight of the hand gently draw the chin to shoulder where stretch and relaxation are felt on top of shoulder and web of neck up to the base of skull. (Fig. D.13) Do not actively draw the head down by pulling with the hand!

**4. Lower back (paraspinals):** lying face up on the floor gently tighten the stomach and buttocks muscles to flatten the lower back on the floor, draw one knee up to the chest while keeping low back flat on the floor, hold 30 seconds and repeat on the other side (Fig. D.14), then draw both knees up and hold. (Fig. D.15) Do not arch your back when drawing your knee up to your chest.



**5. Hip flexors (psoas):** place one foot on a chair with the other extended well behind, slowly lean forward and angle the pelvis towards the foot on the chair so that a stretch is felt in the front pelvis and upper thigh of the back leg. (Fig. D.16) Often a stretch is also felt in the hamstring of the elevated leg. Make sure the elevated knee is not bent more than 90 degrees.



## Restabilizing the Body

Once the tight muscles are stretched, you can then strengthen the inhibited muscles that were reflexively made weak by the tight and overactive muscles and at the same time teach them to work together cooperatively. To strengthen and restabilize the muscles use the following guidelines:

- ◆ Always use proper form.
- ◆ Stop at the first sign of fatigue.
- ◆ Do once or twice daily.

## Strengthening and Coordination Exercises

**1. Shoulder blade stabilizers:** kneel on the floor on all fours with hands under the shoulders and knees under the hips, flatten but do not arch the entire back, turn hands so that fingers are pointing towards each other, lock elbows, and make face plane parallel with floor. (Fig. D.17) Next, spread your shoulder blades as wide and far apart as you can. You're now ready to begin the exercise. Slowly lower your torso halfway down to the floor by slowly bending your elbows. (Fig. D.18) While lowering your torso, keep your shoulder blades apart and do not let them come together. This is the most important part of the exercise. At the halfway point, reverse direction and slowly raise yourself up to the starting position without letting the shoulder blades come together. Repeat the lowering and raising until the first sign of fatigue.



**2. Abdominals:** lying on your back on the floor, with knees bent, tighten your stomach and buttocks muscles so that your low back flattens on the floor. (Fig. D.19) Keeping your back flat and abdominals and buttocks tight, slowly curl your torso up off the floor to a point when your shoulder blades are off the floor. You needn't lift higher than this. (Fig. D.20) At the height of the movement, slowly lower your torso down until the entire back rests on the floor and without relaxing the stomach and buttocks muscles. Repeat the exercise until the first sign of fatigue.



**3. Hip extensors:** kneeling on the floor on all fours, place your hands and knees under your shoulders and hips and position your face parallel with the floor. (Fig. D.21) Flatten your back and tighten your stomach muscles by gently pulling them up and under your ribcage. This is called abdominal hollowing. You should still be able to breathe comfortably. In this position alternately press one foot at a time directly backwards toward the wall behind you without arching your back. (Fig. D.22) Make sure to maintain your abdominal hollowing at all times. If you are able to do this for two minutes without arching your back then make the exercise harder by lifting up the opposite arm straight in front of you while pressing the foot straight back in a crosscrawl fashion. (Fig. D.23)



## Preventing Future Stiffness and Pain

The goal of any health management program is to get well and stay well. To get and remain pain free and minimize future musculoskeletal problems there are several things you can do as a flameworker:

- ◆ Continue to do the exercises discussed daily.
- ◆ Maintain a regular fitness program that contains elements of strength, endurance and flexibility conditioning.
- ◆ Take breaks every hour when working to stretch and move around to get some circulation in the body.
- ◆ Get adequate sleep and nutrition.
- ◆ Observe all safety and health precautions.
- ◆ Observe proper seating considerations when working:
  - a. Have adjustable seat height.
  - b. Feet should be on the floor and knees no higher than hips.
  - c. Have good low back support
  - d. Engage a tiltable seat pan: often having the front of the seat lower than the back when working, especially detailing, can reduce strain significantly.
  - e. Don't let the center of the piece in flame drop lower than chin level.
  - f. Avoid jutting and dropping chin and head when possible.
  - g. Keep shoulders relaxed.

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- ◆ Properly set workbench height.
  - a. If the bench is too low it will promote slouching.
  - b. The torch should be positioned so that the piece you're working on is no lower than the chin.
- ◆ Some framewokers have a high bench and stand when working.
- ◆ Stop working before you get excessively tired.

The exercises and recommendations given in this section constitute a limited, general approach to stabilizing the body to minimize the impact of the demands of frameworking. They do not take into account all the possibilities that produce pain, ache and stiffness or individual differences in creating a personalized conditioning program. If you have persistent pain, a pre-existing condition or special circumstances that require individual attention, please consult your physician before beginning any fitness program.

Reprinted from *Contemporary Lampworking: A Practical Guide to Shaping Glass in the Flame* by Bandhu Dunham

Additional Reading:

King, Candice, "Avoiding Repetitive Stress Injuries with Dr. Robert Butler, Jr. D.C.," *Glass Line*, August/September 1998, Vol. 12, No. 2, p. 7.

Spencer, M.A., D.C., Dr. Jeffrey E., "Preventing Stiffness and Pain in the Lampworker", *The Flow*, Vol.1, Issue 2, p. 34.

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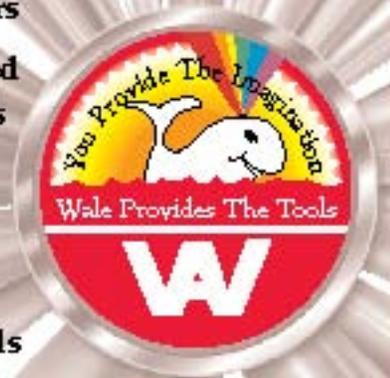
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