Rest easy

Do you feel comfortable when you play? If not, it may be time to get out some coat hangers and wine bottles. **Malva Freymuth** looks at simple ways to adjust your set-up

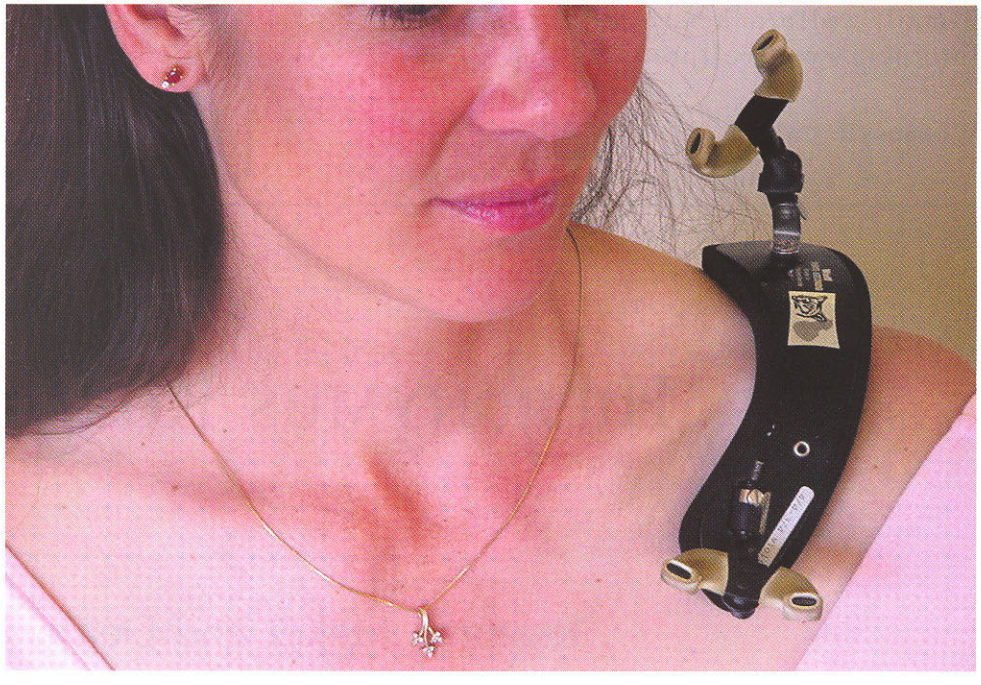
I have a long neck – one that a ballerina would envy: I remember only too vividly the problems it caused me as a violinist during my teen years. I practised many hours a day and had frequent pains in my neck, shoulders and upper back. My instrument never quite felt comfortable or secure and over the years I tried numerous chin and shoulder rests, adding various foams and cloths in search of comfort. Unfortunately, each solution was short lived; having relieved pain in one area, I'd only end up with a new ache somewhere else. Excessive muscular effort pervaded my playing, largely because of the gripping action needed to keep my violin in place.

Only after I entered college and began studying kinesiology (anatomy, physiology, bio-mechanics and movement analysis) did I have the analytical tools needed to develop a set-up that was ergonomically based. My large violin hickey disappeared, my chronically tense neck and shoulder muscles softened and returned to their normal state and I was able to develop a tension-free technique. My set-up has withstood the test of time – I've used the same custom-carved chin rest and custom-bent shoulder rest for 15 years now. I've also created custom set-ups for students and professional colleagues; the same principles have worked well across the board. This body-based approach can help to fine tune your current set-up and will also provide ideas for the hard-to-fit individual. Manufacturers have recently caught on to the importance of ergonomic considerations, as evidenced by several new shoulder and chin rest designs, but every body is unique and even the best designs can benefit from doctoring.

Some players, often those with short necks, prefer to play without a shoulder rest. A few justify the discomfort of a raised left shoulder by arguing that a rest inhibits their freedom to move and communicate with their instrument. However, research shows that using a shoulder rest decreases muscular tension in the left shoulder, the decrease being proportional to the length of the neck. In other words, the longer the neck, the more tension required to hold a violin without a rest. The logical conclusion is that a shoulder rest can help prevent problems such as cramped muscles and pinched nerves in the neck and shoulders. Another criterion for choosing a shoulder pad, specifically one that contacts only the rim of the instrument, is its influence on sound; anything that presses against the back of one's instrument will inhibit its vibrations, dampen certain frequencies and reduce the volume.

When creating a custom fit there are some basic principles to observe. The violin should be close to the body, relieving the deltoids of extra work. With the instrument resting on the collarbone, the custom-shaped rest should fill in the gap between shoulder and violin, keeping the left arm in its lowest possible position. In contrast, shoulder rests that jack up the instrument put the player's left hand on a higher plane; the deltoid muscle ends up working harder

All photos: Wolfgang Bank



simply to maintain the instrument's position and the bow arm also has to compensate for the higher level.

Keeping the instrument in place should require minimal muscle work. The shoulder rest should hook over the back of the trapezius muscle slightly. This keeps the instrument from sliding forward and relieves the player of the need to grip the violin between jaw and shoulder. In addition, custom-contouring the shoulder rest allows the weight of the instrument to be evenly distributed so that no muscles or nerves become irritated.

There should be minimal rotation of the head and neck, with evenly distributed pressure on chin and jaw. Using an over-the-tailpiece or centre chin rest, you can adjust the height and angle to line up with your jaw and file or sand away any areas that cause pressure on the jaw bone. This helps prevent jaw problems and can eliminate violin hickeys.

Finally, don't tilt your head and keep any downward nodding motion to a minimum.

The instrument should fill in the entire distance between collarbone and jaw. While a full-size violin is little more than an inch deep, the average distance from an adult's collarbone to chin is between three and five inches. Build up the chin rest to fill in this space and maintain the integrity of alignment between spine and skull. This helps to eliminate muscle imbalances and pinched nerves.

When adapting a shoulder rest it is best to find one with maximum adjustability options, made of a material that can be bent into shape. I've successfully used a Willy Wolf Secondo model for nearly all my fittings, including those for children, but these guidelines can help you in adjusting other models. Teachers of very young children have few choices in shoulder rests, although a model like the Kun can be used as a platform for attaching a completely custom-built surface.

You will also need violin and viola spindles (the hollow, threaded ▸

TOP Malva Freymuth has used the same custom set-up for the last 15 years

ABOVE the shoulder rest should stay in place on its own, eliminating the need for a raised shoulder

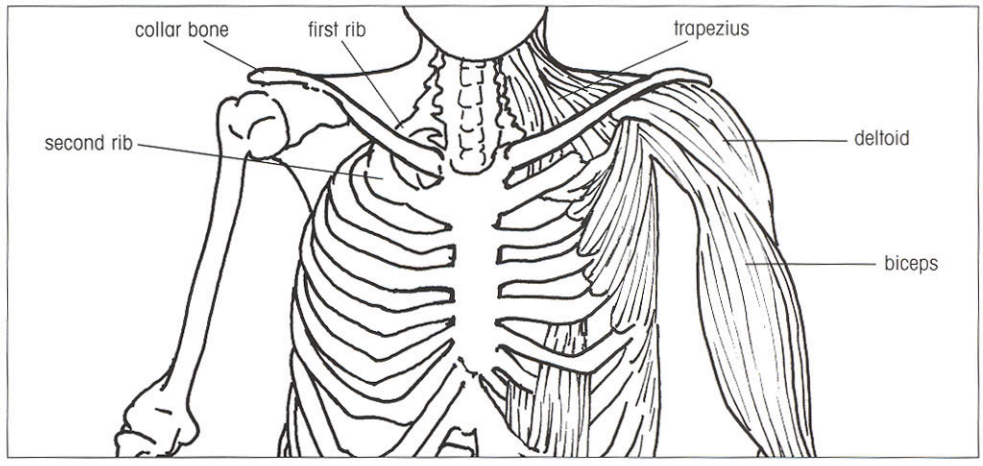
metal pieces found on chin rests), sandpaper (rough to fine), rounded files, cork (wine bottles are a cheap and easy source), molefoam and moleskin (available from a chemist's shop, used for blisters and bunions), needle and thread, wire (coat hanger or similar gauge), pliers, masking tape, modelling clay and cling film.

Start by fitting the shoulder rest and then build up the chin rest as needed. Give yourself ample opportunity to play the instrument and test out the set-up. It is important to keep in mind that sometimes a change may feel awkward because it counters an ingrained, negative habit. Muscles need time to adjust to a new movement pattern and you may need coaching on how to release tension in habitually contracted muscles. This calls for an increased level of body awareness, combined with an accurate mental conception of how the muscles, bones and joints look and work.

Begin by standing in a neutral, balanced posture. Rest your instrument on your collarbone, with the tailpiece pointing into your neck so that when your head is turned left approximately 20–30°, your chin will be over the tailpiece. This placement allows the weight of your head and instrument to be anchored on the bony shelf provided by your collarbone, leaving the surrounding muscles free to move.

Next, consider these three components: direction of the scroll (whether the violin is aimed more to the front or further out to the left); height of the scroll (how horizontal do you want the fingerboard to be?); and how flat or tilted you want the violin to be. Also take into account the length of your arms and how this affects your relationship with the instrument. Find a happy medium between all these aspects, where arms, hands and fingers can work in a balanced manner.

Now the space between your instrument and shoulder needs to be filled. The curve of the shoulder rest must conform precisely to your shoulder and upper rib-cage so that the instrument's weight is evenly distributed. The shoulder rest should also be placed relatively close to your neck, arcing over the collarbone and contacting the upper ribs in front, rather than resting further out on the muscles of the shoulder and chest. Again, this takes advantage of bone support, frees the muscles to move and maintains circulation.



LEFT the shoulder rest arcs over the collarbone and contacts the upper ribs in front. The G-string side curves over the trapezius muscle, instead of resting on the muscles of the shoulder or chest

When the instrument is positioned with the tailpiece centred over the collarbone, its G-string side curves back over the trapezius. This is advantageous, because then the shoulder rest also extends back over the trapezius, which allows you to build in some extra security. Bend the end of the shoulder rest into a hook which follows the contour of the trapezius back towards the shoulder blade. When you let go of the rest, it will stay in place of its own accord rather than slipping or falling down. (Bend it over the edge of a table or chair and distribute the bend over a couple of inches.)

If you prefer holding your instrument with the tailpiece further forward, you may need to build an extension onto the G-string side of your shoulder rest in order to create the hook. This can be done with a piece of coat-hanger wire, covered with molefoam and attached to the rest with strong rubber bands. Any unevenness between the shoulder rest and the wire hook can be compensated for with pieces of molefoam.

Next, twist the rest around its longitudinal axis until the entire surface contacts your body evenly. It is hard work to do this – you are bending the metal plate to which the foam is attached – but once you have the desired contour, it will not lose its shape. If necessary, use ▸

moleskin or molefoam to even out any gaps. Finally, adjust the leg-screws on both sides of the shoulder rest to fill in the space between shoulder and instrument as needed. You will probably need to bend the leg on the G-string side inward considerably to make up for the hook that you have created.

Having finished the shoulder rest, it's time to customise the chin rest. You can find many over-the-tailpiece models, but there are only a few designs available with a centred cup (the most common are two Flesch models, one with and the other without a hump over the centre). If your neck is long enough to require quite a bit of extra height on the chin rest, a centre-cup model is usually most comfortable because the chin isn't left unsupported in mid-air. Thus far, I've had the most success with the humped one. The design reduces pressure on the jawbone where it crosses the edge of the chin rest and the hump keeps the violin from slipping outward away from the chin. If the hump is too large or isn't the right shape for you, use a file and sandpaper to adjust it. Modelling clay or layers of moleskin or molefoam can be used to further adjust a chin rest's contours. These ideas also work for over-the-tailpiece designs but be careful to sand away any areas that create pressure, especially where the jawbone intersects the chin rest.

Most adjustments to the chin rest's top surface take place after it has been secured appropriately. In determining the optimal height and angle, your goal is to maintain a balanced alignment of head and spine, so that only the weight of your head keeps the violin or viola in place. Hold the instrument in position on the collarbone (with the customised shoulder rest on) and pivot your head to the left about 20–30°. Any more than that causes unnecessary muscle-work. Make sure that your head is not tilted – the eyes stay level – and then nod downwards by as little as a centimetre. The remaining space between chin and chin rest needs to be filled so that the contact is evenly distributed and the weight of your head is balanced and centred.

LEFT Malva Freymuth's custom set-up: the G-string side leg of the shoulder rest has been bent inwards and extended, and the pad has been shaped into a hook

Depending on your jaw and chin shape, the chin rest may need an increased angle on one side or the other to create an evenly distributed contact; most often the E-string side needs to be higher. In addition, the chin rest as a whole may need to be raised. Have a supply of wine corks on hand, with a sharp knife and cutting board. You can cut cork wedges to fit in between violin and chin rest, shaping and adjusting the wedges until you achieve a perfect fit. Keep in mind that a thick layer of cork can dampen the instrument's resonance; consider having a luthier replace the cork with wooden wedges glued to the chin rest. Finally, fine tune the top contours for maximum comfort.

Sometimes the necessary changes in set-up are so dramatic that one's entire technique needs adjustment. As upper body, neck and head come into alignment, one's perception of comfort and balance will shift, sometimes over the course of weeks or even months. In this case, it is wise to create a temporary chin rest that can be altered to accommodate changes in technique.

Begin by adjusting your chin rest as indicated above, making it fit as well as possible. Then use modelling clay to build up whatever hump or ridge is necessary for comfort; look for the type of clay which stays quite firm and retains the shape you give it (usually available at art stores).

EVERY BODY IS UNIQUE AND EVEN THE BEST DESIGNS CAN BENEFIT FROM DOCTORING

Cover the clay with a piece of cling film secured by a rubber band. The modelling clay can be reshaped at any time: add or take away clay until you come up with your final model. On a very high chin rest you may need to extend the clay over the edge of the rest where it meets your neck. A small lip of just a few millimetres prevents you from having to jut your head forward when nestling into the cup of the chin rest.

On a cautionary note: if you have a lot of modelling clay on your chin rest, it may affect the sound of your instrument. You may also have trouble fitting it in your case without squashing the clay, so choose a time when these issues will have the least impact on your playing activities. On the other hand, if you only need a little clay to achieve a super fit, you may opt to keep it on permanently and thus avoid the costs associated with custom carving. You can cover the clay with moleskin to hide it.

Finally, a luthier can simply carve a new chin rest based on your model. However, ask to have it left unfinished so that you can take a couple of weeks to make any final adjustments with file and sandpaper before having it lacquered. S

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