

THE ACOUSTIC GUITAR

Playing technique and ergonomics

Musicians often neglect their own physical needs when choosing their instruments. Guitarists are no exception; they tend to make choices that only take into account the aesthetics and sound quality, without considering whether the instrument in question is the one that suits them best practically or physically.

All instrumentalists should ensure that they are using their body in the most efficient way in relation to their instrument. To ensure a long, healthy playing career you should not adapt yourself to the instrument, but rather you should adapt the instrument to your own individual needs.

Here are some of the other things you need to consider:

- How you stand or sit when playing: think of learning postural techniques, such as the Alexander Technique or Pilates.
- How high or low the chair is – an indicator of how well balanced the playing position is.
- How the instrument is balanced and/or held in relation to your body.
- Height and position of the music stand (if you use one).
- How you carry your instrument, including what it is carried in.
- The size and weight of the instrument.
- Changing instruments or adapting the one you have.
- How much pressure you need to apply when pressing the left hand on to the finger/fret board (this also applies to other string instruments).

It goes without saying that any changes you make must not adversely affect the sound. This requires developing a keen sense of self-awareness, through trial and error, and constant checking, making sure these factors are being addressed.

You may also find that you need to modify your playing technique, as the guitar is not the most natural of instruments to play. For example, there tends to be a disproportionate amount of pressure and lack of compensatory release from the fingers of the left hand. This can lead to an exaggerated playing style that inevitably leads to injury and pain with time. With a little attention, focus and adjustment to playing at an early stage, you can help to ensure that you are playing more healthily and more safely, and it will extend your playing career too.

John Williams, the classical guitarist, recommends taking breaks after every 30 minutes or so of practice. He defines a 'break' as:

- putting the instrument down
- walking around

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- stretching and using the muscles of playing in ways that remove the build-up of the static tension created by the playing position. This involves moving the muscles in the opposite direction to that used in the playing position.

John Williams suggests that, for every three hours of 'practice', you should only play for half that time and take breaks every half hour. This means a 15-minute warm-up (as described in the BAPAM Factsheet: *Don't cramp your style!*)* that involves whole-body exercises and muscle conditioning, NOT running through scales on your instrument!. Then you should do three half-hour playing sessions, broken up by two 30-minute breaks, with a 15-minute cool-down session to finish. You can have shorter breaks and more frequent playing sections, but breaks should not be shorter than 10 minutes in length, to ensure you get a good rest.

* Part II of *Musical Excellence* ed. Aaron Williamson (OUP, 2004) covers the subject of 'Practice strategies' in more depth.

This takes discipline and planning, so it's best to plan out your working schedule and stick with it from the start. It is important to vary the actual things you do within each of your sessions. As John Williams points out, if you don't make practising fun, you won't keep it up. Given the amount of time instrumental musicians spend practising, it is vital to ensure you have the right mind-set and the right schedule in place and then to stick to it.

So what are the specific playing techniques you should adopt to ensure you play safely? Here are some recommendations, whether you play standing up or sitting down, with or without a strap.

Guitar shape ergonomics

The overall guitar size should be appropriate for you. A 'cut-away' is better, as it helps to reduce unnecessary over-flexion of the left wrist when playing at higher positions. The neck should be of a width that is also appropriate to your hand size. Too many players struggle with wide necks and this can result in over-stretching of the fingers, especially when playing bar chords. The body of the instrument should also be the right size for you.

The music stand

To prevent straining the neck, the music stand should be positioned directly in front of you, especially during practice sessions, high enough so that you don't have to look downwards. In performance, the height can be lowered so your audience can see your face, but not so low that you need to drop your head, rather than just your eyes, to read the music.

Posture

You should consider learning some postural techniques as a way of re-balancing your body. You should work on posture outside of playing and then apply the re-adjustments to your instrumental practice and performance. The Alexander Technique, Pilates and Tai-Chi all promote a natural, balanced, elongated alignment of the spine, neck and head, to avoid too much tension and unnecessary pressure on the limbs. This is especially important for musicians playing asymmetrical instruments such as guitars, violins and flutes. It utilises the central axis of the body for support.

You can also try to monitor yourself via video recording or by playing in front of a mirror; this gives you an idea of possible postural problems and ways to correct these. The Alexander Technique emphasises the need to keep the head, neck and spine in balanced alignment. Imagine there is a thread from the top of your skull pulling the top/back part upwards and so allowing your face to point directly forwards, this releases the head on the neck which is able to 'bob' easily on its axis. This will elongate your spine and help your back to straighten along its natural length.

Sitting

When sitting you should maintain the elongated position as described above, with the legs directly in front of you and your feet flat on the ground. The knees should be bent at 90° and shouldn't be tucked underneath the chair. The height of the chair should be adjusted to make sure that the ischial spines (the two bony points that press against the seat when we sit down – our 'sitting bones') are both pressed evenly onto the seat to distribute the weight evenly. Throughout the playing session, you should keep checking that you maintain this neutral sitting position.

The footstool

An adjustable footstool lifts the left foot up about 30cm/12" off the ground, with the stool sloping down FORWARDS, so the foot is relaxed in this slightly extended position (preventing the far more strained hyper-flexed position that would occur if the foot were flat on the stool). If a footstool is not available, a cushion can be used to prop the guitar up on the left knee. However, the support here is not ideal because the upper body including the arms are involved in holding the guitar.

Once you have arranged the footstool, you need to bring the guitar into the playing position, whilst maintaining a neutral posture. The idea is to support the body of the guitar solely via the body and legs, so the arms are completely free.

Supporting the guitar

With the left foot on the footstool as described and the left leg raised above the right, the guitar is placed so that the natural slot/curve of the underside of the guitar sits on the raised left leg and the guitar should be at an angle of about 45° to the horizontal (this will vary according to the size of the instrument and the player). The butt of the guitar on the right should press into the chest more on the right side than on the left and in fact there should be a small space between the guitar and the left side of your body.

The guitar should be completely supported on the legs, without relying on the arms. It also reduces the inevitable twisting of the torso (to the left for right handed players). You must learn not to look at the fret-board directly and instead rely only on seeing the neck out of the corner of your eye. Practising with your eyes closed helps to nurture this skill. It means the head and neck are not in fixed sideways rotation, and so the whole of the upper body is free to move. You can check by moving the head freely whilst playing: look around, above, below and to the sides and the guitar should remain supported no matter where you move your head. Not only do you have total freedom of movement but also the back, neck, head and shoulders are free from any unnecessary tension and pain.

The hands

In this supported position, your hands are free to play without hanging on to the guitar for support. Even the left hand, which makes most contact with the neck of the guitar, should be 'placed' when fretting chords and the thumb should not be applied with too much pressure. The direction of force on the hand when fretting chords should be perpendicular with respect to the neck, rather than downwards. Wrists should be only slightly flexed up to the 5th fret, at which point it should be extended for higher positions and also into the cut-away section of the guitar.

The right hand should then be strummed with movements arising from the elbow and shoulder and not exclusively from the wrist. The shoulder girdle muscles and muscles of the upper arm provide greater strength and support to the hand and the muscles of the lower arms are then employed for the fine movements of the fingers, rather than being used unnecessarily for movements of the wrist during strumming. This means that the muscles will tire less and create less tension in the hand when playing. You should think in terms of using both arms in this way, making use of the whole arm so that it absorbs the tension. As you are doing this, remember to keep checking your central alignment as described above.

Think of your right-hand technique in three stages:

- 1) The thought/visualisation of a movement
- 2) Execution/attack of the note or chord
- 3) The release of the fingers back to neutral.

The fingers

Curving the last joint of the fingers of the left hand will, in most cases, improve the positions of the fingers as they land on the finger board. The left wrist should be relatively straight. The fingers of the right hand should be naturally curved and the right wrist should be neutral/straight when strumming. Hyper-flexion of both wrists is one of the main causes of aches and pains and may contribute to performance-related musculoskeletal disorders.

The playing technique we advocate here will require a period of practice as it differs from the technique that most guitarists use. It involves a press-on-release-off technique, which alternates with each note played: let go of the string once the note has sounded, and don't hang around on the string. For bar chords and sliding notes, keep to the older technique.

The aim is to prevent unnecessary tension used after a note or string has been played and this also allows for a better ringing quality to the tone of each note, especially for plucked styles – so called 'free strokes' as opposed to 'rest strokes' which keep the fingers pressed down after the note is played, muting the string in doing so. For 'free strokes', the finger pressure needs to be released and the finger completely removed from the finger board. This also goes for the thumb, which should apply pressure only to support the playing of each chord or note and then this pressure should be released. Of course, as you do all this, remember that it's the legs not the hands that support the guitar; this makes the release technique possible.

The thumb of the left hand should then be applied in a relaxed natural curve to the back of the neck of the guitar, and allowed to peek over the top of the neck if it

naturally tends to do so. This is opposite to the usual, tension-creating position of trying to force it to curve under the neck at the back. The thumb should be seen as a 'shadow' which follows the movements of the arm and hand. Only when bar chords are used does the thumb take on a more active role. Here the force of gravity is used to assist playing the chords, so that the thumb is hanging down rather than pressing onto the neck of the guitar. Don't use the thumb to play the bass notes by hanging over the neck. Bar the chords or use a capo.

With other types of guitars (for example, a 12-string) make sure the neck isn't too wide; these guitars are very big and require light pressure on the strings.

The plectrum

The main issue with the plectrum is to ensure that you don't grip it too much between the fingers and thumb. Remember too that full-arm swing on the strumming hand should be used as described above. This uses the much stronger shoulder/arm unit and so prevents extra strain on the wrists.

Standing position for electric guitarists

If you do play the electric guitar sitting down, then it can rest on the right knee as long as the neutral position is maintained throughout.

When standing, as is the usual playing position for electric guitarists, your body has a greater flexibility of movement and mobility, but your posture generally should be based around having one foot in front of the other, with the knees slightly flexed to prevent locking of the legs. You should practise standing up, to keep as natural a playing position as possible. Walk around to help keep a flexible and relaxed stance. If you stand still you will create unnecessary tension.

Above all ...

It is vital to ensure that you have sufficiently warmed-up AND cooled down away from the guitar. This means stretching the whole body and the specific muscles used for playing your instrument – to get them into the optimum condition before playing or practising.

If you experience pain, don't try and play through the pain, but stop at once. If you have any concerns about your muscles or joints, contact the BAPAM clinic line to arrange an appointment.

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