

Do You Need a Physical Therapist?¹

BY ALICE ARTZT

Pianist Leon Fleisher returned to the concert stage after battling a disability in one hand that had left him unable to play for many years. The accompanying publicity made many people aware that, if not done properly, playing a musical instrument could lead to serious difficulties. It is ironic that it took a concert pianist's plight to draw the attention of guitarists to a problem that had been occurring for some time.

For years, those afflicted have kept their condition secret, particularly because of the great lack of knowledge and understanding of this condition. After all, a great virtuoso or major teacher who suddenly finds he or she cannot play for some mysterious reason, is hardly likely to announce it cheerfully to the world. The usual reaction is to change fingering to avoid the troublesome finger and to practice still more frantically, hoping the problem will go away. When the situation deteriorates to the point where disguising the problem is impossible, the victim usually drops out of the concert scene.

I can think of seven well-known artists in the guitar and lute world to whom this has happened (but they would not thank me for naming them). I have also met dozens of less well-known performers and students who have been so afflicted, and have watched two more major performers who seemed to have the same syndrome, and who, by now, have stopped playing concerts. In fact, these problems are so ubiquitous that they almost seem to be epidemic. It is a great pity because the cause of this condition is not simply nerves, a psychosomatic ailment, or a matter of losing one's mind. There are concrete physical causes and this problem is almost certain to occur, at least to some extent, in players who continually use their muscles in certain ways over an extended period of time. However, this condition can often be corrected, especially if caught early enough.

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The problem characteristically first manifests itself as a weakness or slowness of the *a* finger, or, less often, of the *m* finger. At this point the guitarist usually thinks, or is told by his or her teacher, that he/she is not practicing enough. The usual response is to dig into lots of hard, fast scales. But the more the player works, the slower the playing becomes and the more sluggish the afflicted finger. It gradually acquires a tendency to clamp into the palm of the hand and resists being lifted back into a position from which it could initiate another attack. When the *m* is used, the *a* will clamp in more and more and vice versa. About this time a slight fluttering or spasticity may be noticed in the *a* finger whenever one tries to use it, or whenever the *m* finger is used.

If one keeps practicing and playing in the same way, the finger eventually refuses to move and drags the neighboring finger down with it, so that the player is reduced to using only *i* and *p* almost exclusively. In some cases a slight reprieve has been gained by tying the offending finger in an unclamped position by various means—rubber bands, plastic splints, and the like, thus freeing the neighboring finger to work. No one can give concerts for long with such contraptions, and such devices do nothing to cure the underlying problems. It is a great tragedy for a musician to deteriorate until there is no further possibility of making music, all the while fighting for his or her artistic life, when a little knowledge might have prevented the disaster.

Why does this happen? Hands are well built to do the jobs they do, and the jobs they can do are varied indeed. A hand designed originally to enable one to swing from tree to tree, to poke a stick into a termite hole to dig out a tasty dinner, or to peel the skin off a fruit, today does an excellent job of typing commands into a computer, doing heart surgery, or playing the guitar. There are limits, however, to the abuse that muscles and tendons can withstand beyond which there will be trouble. Age is a factor as well. In younger people the repair mechanisms work faster, and often a muscle or tendon may be abused repeatedly and still manage to repair itself in time for the next day's misuse. With increasing age, repairs take longer and longer, and by about age 35 to 40 problems that were previously held at bay can become very serious.

The bones of the hand and fingers have tendons and muscles both on the back of the hand and on the palm side. These are attached to the tendons that run over the top and underside of the wrist and are then attached to the muscles of the forearm. The tendons called extensors on the back of the fingers and hands straighten the fingers or even bend them slightly back, while the flexors on the palm side curve the fingers in toward the palm of the hand. There are a few idiosyncratic elements

to the way we are “wired up” that are not ideal, and there are certain jobs that we simply cannot do, no matter how hard we try.

Try, for instance, making a cat’s claw of your hand, with fingers and thumb curved, wrist flat, and the tendons over the knuckles standing out tensely. Keeping your hand in this shape, place the tips of your fingers on a table or flat surface. Now lift the *i* finger off the table. Now try the *m*. Fine: so far the fingers lift reasonably easily. Now try to lift the *a*. That finger doesn’t work so well. Usually even the little finger, which we expect to be generally incompetent, manages better than the *a* finger. This difficulty with the *a* occurs because the nerves that tell *a* what to do are too closely interrelated to those that command the middle and the little finger. Once your brain is telling *m* and the little finger to press down, there is apparently no easy way to tell *a* not to do the same.

Let’s try another experiment. Try holding your hand up, fingers straight or even stretched back as tightly as possible. Keeping your hand tense this way, bend your *a* finger at the second joint, one segment from the knuckle. Still keeping all the other fingers absolutely straight, try to bend the tip segment of the *a* finger down as well. Ah ha! You can’t do it—in fact, you will find that with your other fingers absolutely straight, the tip segment of your *a* finger is disconnected from any voluntary motion. (You can try this with your *i* finger and it works fine—as you’d expect. The tip joint of the *m* finger lets you control it some, and even the little finger is better than the *a* finger at retaining a slight amount of control.) Another thing you can try is to make that cat’s claw of your hand and then, keeping the fingers all in a tense claw position, pull on the tip of your *a* finger with your other hand, but resist and don’t let the *a* finger straighten out. Now keeping in that position, try to stretch out both your *m* and little fingers at the same time. You can’t do it! You can straighten out just the *m*, or just the little finger, but not both at once. If you insist on straightening out both those fingers, the *a* finger will collapse and straighten out also. Therein lies the root of the problem.

Pat O’Brien, who has studied this sort of thing extensively, explains it better than I could:

As has been observed above, when the tip joint of a plucking finger is flexed inward towards the palm, the adjacent fingers flex in tandem with the plucking finger. If one attempts to extend one of the adjacent fingers to make it ready to pluck the next note while the previously plucked finger’s tip joint is still flexed, the adjacent finger undergoes a sort of ‘crisis.’ Should it follow the plucking finger as it naturally wants to do and flex sympathetically or

should it extend to prepare for the next note? In players who lack complete independence and control over the various different joints in their fingers it may be difficult to bend any part of one finger without bending all the joints. If this is the case, the player will often be attempting to extend a finger while at the same time trying to flex it sympathetically. In attempting to use both the flexing and extending mechanisms of this finger simultaneously, the player creates great stress in the opposing muscle and tendon systems. In this simple mechanically incompatible maneuver rests the cause of tendinitis and other progressively debilitating disorders in the majority of cases among musicians generally and it is by far the most common among guitarists. Therapeutically, one must relearn how to pluck with no tension in the tip joint. Indeed the best solution for many players is to avoid such tension at all times since it is possible to pluck with the larger knuckle of the finger and create no sympathetic tension at all in any adjacent finger. Some of the most advanced players can hold the tip joint steady in a slightly flexed rest position during the stroke without getting sympathetic motion, adding only minimal, and for them acceptable, tension to the adjacent finger. But this takes very great concentration, constant vigilance, a very relaxed approach to performing situations, and excellent kinesthetic memory and control over each joint. But generally the only solution for the player who is hurting requires total relaxation of the tip joints and very slow careful retraining of the plucking mechanism.

Pat O'Brien was a wonderful example of what retraining can do. He probably ended up with the most independently controlled set of fingers I ever encountered—a far cry from the problematic state he was in when we first met many years before. Retraining his hand so completely took a lot of hard work and analysis, but Pat felt that full recovery was usually possible, even after prolonged playing in pain, such as his own two-year ordeal.

I have found it quite impressive how much abuse the body can stand and still recover. Since working with Pat, I have had a similar experience with another professional guitarist, who deteriorated so much he could not play or demonstrate things to his students, but who got back something close to his previous technical level and speed with a lot of vigilant detailed work and analysis. And I have witnessed a number of other successes—but there is a lot of analysis and attention to detail involved, and not everyone is willing to devote that much work to the problem. Much better is to catch students or young professionals who are doing things wrong before they really get into trouble, and stop the problem before it occurs.

Certainly you don't need to wait until you are nearly paralyzed before working on using your fingers according to their anatomical requirements. Getting total independence of the fingers increases leverage, speed, and spontaneity, and improves timing, dynamics, and articulation, leading to greater musicality. It improves every aspect of your playing.

Students, or even advanced players, are often unable to judge whether they are relaxed or not. If you are not sure, an easy test consists of resting your arm on the arm of a chair and letting your hand go limp as completely as you can, permitting the hand to hang down naturally. Place a finger of the other hand under your wrist. Move your *i* finger gently back and forth from the knuckle—the joint nearest the palm of the hand. Feel what happens under your wrist: a tendon jumps down when you move the finger and goes back up to a relaxed starting position when the finger is not in motion. With no movement, the underside of your wrist should feel soft and relaxed. Now make a cat's claw. At the same time, move any finger, still feeling your wrist. This time there is little if any difference between the times when the finger is moving and when it is still. This is because your tendons are already as tense as they can be clenching your hand, so that one moving finger just causes one tendon to tighten a tiny bit more—probably not a noticeable difference. You can try playing the guitar with your right hand only, while still feeling your wrist, to see if you are relaxed.

But if you are not relaxed, just imagine that you are probably exerting something like three units or more of pull with your extensors and three units or more of pull with your flexors just to maintain that cat's claw position of your hand, and then you add another three units of pull from the flexor of the finger you are plucking with to move that finger—that makes a total of nine or more units of work needed to make that movement. If you do it with your hand relaxed, you need only the three units of pull for any given finger, using only your flexors to do the job. This way you don't fight yourself while playing. Many guitarists do fight themselves most or all of the time. Then they wonder why their hands get tired or why their fingers finally rebel and refuse to work anymore.

If you find you have any of the problems mentioned, the first thing to do is to stop playing before you do more damage. The next thing to do is to go to someone who can help you—possibly a teacher who has experience with this type of problem and can tell you how to retrain your hand. If you are interested, I have a video posted on YouTube that describes this problem and gives some ideas on how to think and work

to get back a usable technique (<https://youtu.be/KaS-W0WAp8Q>). I have posted a few other videos discussing the Ida Presti right-hand technique, which might also be helpful. In any cases that have involved my helping people with this problem to recover, I have found that getting them to use the Presti technique, while carefully watching very vigilantly what they were doing, was a pretty reliable path to getting their fingers to work properly.

I am not really convinced it is the best or most effective idea to try, since the reported results seem to be a bit mixed, but some people have tried a medical path by going to one of the doctors who specialize in this problem: Dr. Fredrick Hockberg, Dr. Robert Leffert, and Dr. Bhagwan Shahani are among them. These doctors are connected with Massachusetts General Hospital in Boston, where pianist Gary Graffman and many other musicians, including several guitarists, have been treated.

If you are merely curious and wish to learn more about hands, you might start by studying *The Anatomy Coloring Book* by Kapit and Elson (Harper & Row, ISBN 0-06-453014-8). The diagrams of hands will give you a better idea of what happens when you play, and may help you to improve the functioning of your fingers even if you aren't doing anything wrong. And if you do have problems, I hope that some of the ideas in this article may start you on the way to saving your artistic life.