

# Guitar Action – What’s a Good String Height?

*This post contains affiliate links, meaning, if you click through and make a purchase, I may earn a commission. This is at no additional cost to you. [Learn more.](#)*

[Share](#)6

[Tweet](#)

[Pin](#)867

[Reddit](#)

*Last Updated: May 8, 2018*

In a previous article, "[Action! A Beginners Guide to Understanding String Height](#)," I introduced the concept of string height, or "action" (the two terms are used interchangeably throughout this article).

## HI THERE!



If you want to learn to do your own basic guitar care and maintenance, you've come to the right place. I'm here to teach you how to work on and maintain your own guitar and show you what



*What* constitutes a high or low action.

What does it feel like? What are the measurements?

So, it's no wonder that one of the questions I get a lot from newer guitarists is:

***"What's a good string height for my guitar?"***

Totally valid question, because when you're new to guitar you really have no frame-of-reference for what a "good action" is or what it feels like.

Over time you'll naturally develop a personal preference for what action feels right for you. Until that time, I'll give you some actual measurements here that you can use to know whether your guitar is currently set up in the ballpark of low, medium, or high action.

## How to Measure Your Guitar's String Height

In this section, I'll first list the tools you need (not many) to measure string height. Then, I'll tell you where and how to measure string height. Lastly, I'll give you a listing of common measurements for low, medium,

are, but also let you know when you really *should* take it to a pro instead. [\[More About Me\]](#)

**NEED  
SOME  
HELP?**





measurements and know where you are in the grand scheme of things.

When it comes to measurements, the guitar world seems evenly split right now between imperial (inches) and metric (millimeters). Still others like to use fractions.

Here, I'll be giving all measurements in millimeters and decimal-inches, because that's what I'm most familiar with. Also, that'll allow you to use the String Action Gauge that I recommend in this article, regardless of whether you choose the version that's in millimeters or inches. If you'd like to use fractions, you'll need to do the conversion to find your values.

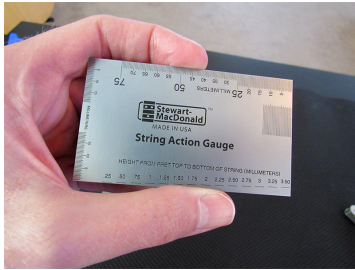
## Tools You'll Need

We're going to be dealing with very tiny, precise measurements here, so you can't use those cheap plastic rulers you used as a kid. Here are the things I use to measure string height (useful for other guitar measurements too):

1. String action gauge in millimeters or inches. I use the StewMac Metric String Action Gauge. If you'd rather use a ruler, you'll need a precision-ground metric ruler graduated to 0.5mm.

**GUITAR**  
Answer Guy

these if you decide to also measure your string height at the 1st fret. If so, I recommend the Hotop 32-Blade Feeler Gauge Set.



My StewMac String Action Gauge (metric)



A few of my Hotop blade feeler gauges

## Measuring String Height at the 12th Fret

Really, this is the only measurement you need when we're talking about action, but later I'll discuss the *option* of measuring at the 1st fret too. You'll take this measurement at the 12th fret with the strings open (unfretted). We only measure string height under the two outer E strings (thickest and thinnest strings). There's no need to measure the middle 4 strings. Here's what you do:

### 1. Hold the guitar in the playing position.

This is important. Do not measure string height with the guitar on its back, because

**GUITAR**  
Answer Guy

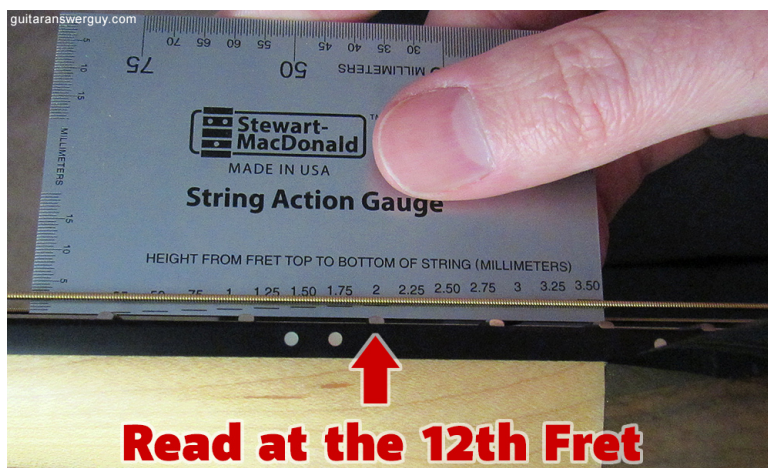
make your measurement inaccurate.



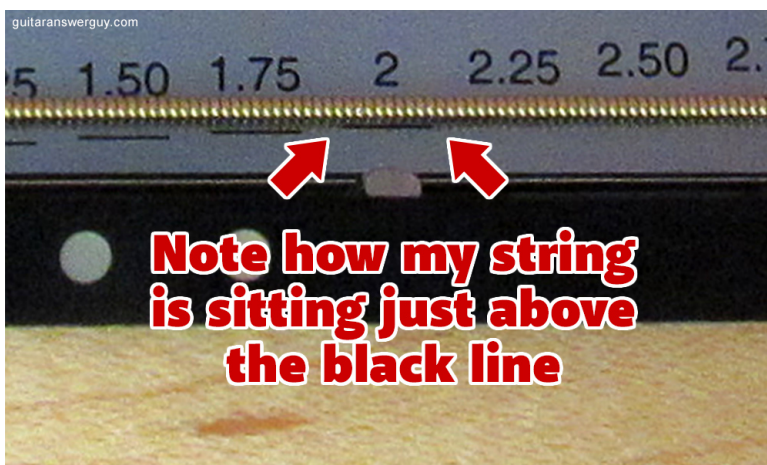
Always make such measurements with the guitar upright in the playing position.

## 2. Measure the distance from the top of the 12th fret to the underside of the lowest (fattest) string.

We're dealing with very small, very precise measurements here, and that's why you need an accurate measuring tool like the String Action Gauge I'm using here:

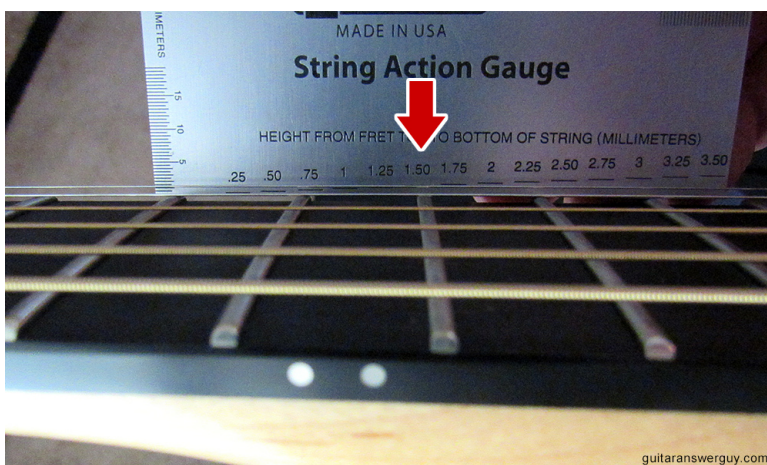


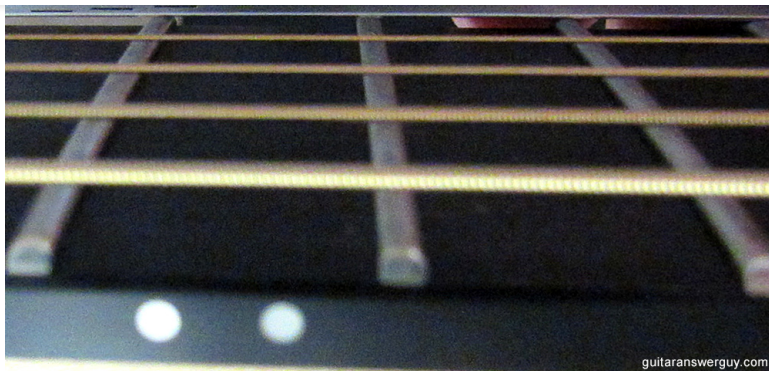
A string action gauge isn't the only way to measure string height, but it sure makes life a lot easier. I much prefer this



The horizontal black lines on the String Action Gauge are 0.1mm thick. Since my string is slightly above the black line here, I need to add 0.1mm to the measurement shown. So, according to what you see here, the string height of my low E is roughly 2.1mm.

**3. Next, measure the height under the highest (thinnest) string in the same manner. It's normal for the string height to be a bit lower under this string:**





Reading the height on the high E string can be a little tough. It's hard for you to see here due to the quality of the photo, but my string is sitting right on the 1.5mm line, so my string height on the treble side is exactly 1.5mm.

**Note:** Some people (and guitar manufacturers) measure string height at some fret other than the 12th... such as the 17th. Some measure action by first placing a capo at the 1st fret before taking their measurement. I don't do any of that, but it's important for you to know this so you can ask your guitar tech how **THEY** measure. That way the two of you are speaking the same language when/if you take your guitar in for a setup.

### **Optional: Measuring String Height at the 1st Fret**

When you're just checking your guitar's action, it's not really critical to measure at the 1st fret too. Usually, we only measure the

**GUITAR**  
Answer Guy

diagnose, like bad intonation, open string buzzing, or strings that are too hard to press at the 1st fret. However, in case you're curious, here's how it's done:

- 1. Just like we did before, hold the guitar in the playing position.**
- 2. Using a feeler gauge, measure the distance from the top of the 1st fret to the underside of the lowest (fattest) string.**



Measuring 1st fret action in this manner is difficult (just try it, and you'll see what I mean). This is why we usually do the "3rd fret press test" instead... which I'll tell you about at the end of this section.

- 3. Now, do the same exact thing for the treble side:**



**GUITAR**  
Answer Guy



In reality, I don't actually "measure" string height at the 1st fret anymore, nor do many experienced guitar techs or luthiers. Instead, I use the "3rd fret press test" which is demonstrated perfectly by luthier Frank Ford [on his website here](#).

## Common String Height Values

What the heck is a "low action" on guitar?

What is a "high action"?

Now that you know the proper way to measure your guitar's string height, let's talk about some actual numbers. When taking your guitar in for a setup, you should always give the repair tech actual measurements when telling them how you want the action set. Vague terms like "low", "medium", and



not get you what you're expecting, depending on who works on your guitar that day.

**The following measurements are approximate, not "official." You'll get slightly different opinions on these measurements depending on who you ask, or where you search on the Web.**

## Electric Guitar String Height

Electric guitars generally can achieve a lower overall action than their acoustic or Classical counterparts.

### String Height at the 1st Fret

LOW ACTION	"NORMAL" ACTION
Low E: 0.3mm (0.012") High E: 0.15mm (0.006")	Low E: 0.76mm (0.030") High E: 0.4mm (0.015")

### String Height at the 12th Fret

LOW ACTION	MEDIUM ACTION	HIGH ACTION
Low E: 1.6mm	Low E: 2.5mm	Low E: 3.5mm+



High E: 1.5mm (.059")	High E: 2.4mm (.094")	High E: 3.4mm+ (.134")
--------------------------	--------------------------	---------------------------

## Steel String Acoustic Guitars

Steel string acoustic guitars tend to require slightly higher action than electric guitars, so you'll see higher measurements here.

### String Height at the 1st Fret

LOW ACTION	"NORMAL" ACTION
Low E: 0.51mm (0.020") High E: 0.30mm (0.012")	Low E: 0.76mm (0.030") High E: 0.41mm (0.016")

### String Height at the 12th Fret

LOW ACTION	MEDIUM ACTION	HIGH ACTION
Low E: 2.0mm (0.079") High E: 1.5mm (0.059")	Low E: 2.5mm (0.098") High E: 1.8mm (0.071")	Low E: 3.8mm+ (0.149") High E: 3.2mm+ (0.126")



Classical guitars will have some of the highest action measurements.

## String Height at the 1st Fret

"NORMAL" ACTION
Low E: Roughly 0.8mm (0.031")
High E: Roughly 0.6mm (0.024")

## String Height at the 12th Fret

LOW ACTION	MEDIUM ACTION	HIGH ACTION
Low E: 3.2mm (0.126")	Low E: 3.9mm (0.154")	Low E: 4.7mm (0.185")
High E: 2.4mm (0.094")	High E: 3.2mm (0.126")	High E: 3.9mm (0.154")

## That's It!

Now, you not only know how to measure your guitar's string height or "action," you finally have some idea of where your guitar falls on the spectrum of low, medium, and high action. Of course, you can break this



medium-high, etc. but don't worry about all that right now. Obviously, there are spaces in between the measurements I gave above, but those should at least give you an idea of where you stand.

## So What's a "Good" Guitar String Height?

Unfortunately, there is no correct or official answer to this. The fact is, a "good" string height is whatever feels good to **you**. In other words, the goal isn't always to have your guitar strings as low as possible. There are drawbacks to really low action, as I point out [in my other article](#). Some players like medium action, and some like it high.

That said, I generally recommend the lowest possible action for beginners just starting out. That way you can focus on learning rather than physically fighting the guitar, at least until you build hand strength and dexterity. As you get better, you can begin raising your action a little (or a lot) if you'd like to.

On **my** electric guitars, I actually don't like really low action (not as low as what I list above). I'm somewhere between low and medium, which I find better for bending, and



my personal opinion/preference though. On my acoustic guitar, however, I get those suckers so low that it's probably illegal in some states.

## Question:

What is your guitar's action? Now that you know how, measure it at the 12th fret and let me know what it is in the comments section down below. Don't forget to tell me what kind of guitar you have (electric, acoustic, or Classical).



## Sources & Resources

If you'd like to learn more about this topic, I recommend one or both of these books. They were a huge help in writing this article, and they've been my guiding lights since I purchased my first editions many, many years ago:

- [The Guitar Player Repair Guide](#)
- [How to Make Your Electric Guitar Play Great](#)

[Share6](#)



FL11007

Reddit

## Enjoyed This Post? Like Free Stuff?

Subscribe to be the first I notify of new blog posts, guitar gear contests and giveaways, and occasional guitar care tips.

**Subscribe**

Your information will never, ever be shared. For more info, have a look at my privacy policy.

---

16

REPLIES



**Sean**



strings.....I've just bought some nut files and was thinking of lowering them, could I use the 3rd fret method and lower them all so they are a whisper above the first fret when I am pressing the string down on the third fret?

Reply



### **Guitar Answer Guy**

August 24, 2018 at 6:44 PM

Sean, yes, you can use that method to gauge height for all your strings.

Reply



### **Derek**

August 24, 2018 at 8:23 PM

Sean, I just did the 3rd fret trick on my guitar and still was getting very sharp notes when checking the tuner at the first few frets. All this despite having very little clearance at first fret when pressed at the third.

So I felt I had no choice but to keep shaving more out of





r many I was able  
to get closer to  
properly tuned  
notes. As a result of  
lower nut slot  
groves however, I  
had to raise the  
action at the bridge  
end, so now my  
higher strings don't  
play as close as I'd  
prefer.

Now I'm not sure  
what to do. I'm  
already getting a  
tiny bit of fret buzz  
so I can't lower it  
any further. I'm  
guessing a fret job  
would be next,  
though the frets  
don't look worn at  
all. And not really  
sure what to do in  
the case where 3 or  
4 frets in a row  
buzz. I have a bit of  
relief in the neck  
already.



watched  
and  
read all  
of the  
recommended  
tricks I  
could  
find,  
and  
still not  
really  
sure  
how to  
approach  
this.  
Just  
figured  
I'd  
share  
my  
current  
experience  
since it  
seems  
we're  
both in  
the  
exploration  
stage of  
figured

---

all

out.

I'm

curious

to

hear

how

your

modification

turns

out.

Reply



## Derek

August 15, 2018 at 12:41 PM

Thanks for the amazing articles.

They are very helpful. I have a question that I can't seem to find a definitive answer to...

I'm noticing on a couple of my guitars, when I fret a note or chord near the nut of the guitar on a perfectly tuned guitar, the fretted note is out of tune. So for example when I fret the first fret on the D string for example, instead of the fretted note being an E flat, it shows on my tuner being much



happens with all of my strings.

The guy in this video (link attached below) mentions that this is a result of too high of a nut, resulting in the string bending further than it should, thus creating a sharp note. This explains why when I play a chord on the lower frets, it sounds awful and out of tune, despite me playing it properly.

[https://www.youtube.com/watch?v=cZXT8RE\\_Xqg&list=PL8ShMd1uHUAD8CQZHdO6n5HCsFt=0s&index=16](https://www.youtube.com/watch?v=cZXT8RE_Xqg&list=PL8ShMd1uHUAD8CQZHdO6n5HCsFt=0s&index=16)

With that said, I'm confused on what approach I should take. In the video he recommends shaving the nut slots down until a low unfretted action is achieved. He recommends around 2.5 for the low E string I believe, and a bit lower for the high E. Yet others recommend only shaving the nut slots down until there is barely no clearance above the first fret when the third fret is fretted (pressed down).



on my guitar, there isn't much clearance at all at the first fret. Yet when I take the video guy's approach of measuring the string open, I'm still at about a .75 millimeter gap at my low (fat) E string.

Since I'm not quite at the recommended .25 or 3 millimeters open string spacing, yet have barely any clearance at the first fret when I press the string down at the third fret, what approach should I take? Since I'm still getting sharp notes with fretted chords, I'm guessing I need to keep shaving the nut slot down, yet I'm nervous that I'll end up going to low.

I would love to hear your advice on what approach I should take, and what solutions you can recommend to avoid ugly sharp sounding notes and chords. I'm actually surprised this isn't mentioned more in instructionals about action. This is an issue on all of my guitars, so I'm guessing it's an issue for many people, they



all they are checking for is proper tuning and 12th fret intonation.

I'm guessing most people just assume if those 2 things are correct, the lower fretted notes should be accurate as well.

Thank you kindly for any advice. I think this would be a great article for you to write.

Reply



### **Guitar Answer Guy**

August 17, 2018 at 4:05 PM

Unfortunately, that video was way too long for me to watch, but the general premise you're describing is correct: if notes in the lower registers are sharp when you fret them (despite tuning and intonation being correct), it's usually because your nut slots are too high. The strings are far enough above the frets down there that they are literally being stretched sharp when you press down.

So, the solution is to lower



The reason you're seeing variation in opinions about how low they should be is because... well... that's just the nature of guitar work. Everyone seems to have a slightly different opinion. Also, there are no absolutes with guitar work—referring to “ideal measurements” and tolerances. So, a setup that makes one guitar sound and feel perfect might not be quite right for another guitar... even if it's the exact same model. Each guitar is slightly different, so setup work involves a bit of “feel” and experience. I never set up 2 guitars with exactly the same measurements. Close sometimes, yes, but never exactly the same.

If you're going tackle the task of lowering your string height at the nut (deepening the string slots), first err on the side of being too high and gradually deepening the slot. You can always file deeper, but you can't



a string slot a bit, fret, test, and if necessary lower a little more.

Lower it till the note stops fretting significantly sharp, and once you get to that point, stop filing and move onto the next string slot. How low should you go? Honestly, I get the string height at the 1st fret as low as possible without string buzz.

But what if you go to far and ruin the nut!?

Here's something that'll set your mind at ease: nuts are a dime a dozen. You can get bone blanks for less than \$5. So, if you screw up your nut, it's not the end of the world (but do be prepared to have an unplayable guitar until you get it replaced).

If you can't find a new nut for your exact guitar that's already pre-shaped and slotted, any guitar tech with a modicum of skill can fashion you a new one from a nut blank. It's bread-and-butter work, really.

HOWEVER, if this is an expensive Martin, valuable





advise you to just take it to a  
pro. Never do a procedure  
(especially one you're slightly  
unsure of) for the first time on a  
valuable guitar you can't afford  
to screw up or be without.

Let me know how it all works  
out!

Reply



## Derek

August 18, 2018 at 9:36  
AM

Thank you sir for the  
in depth reply. Very  
helpful. I completely  
understand your  
mentions about  
various techniques  
and every guitar  
setup being unique.

I guess my  
confusion is in  
regards to the  
mention about  
despite still having  
sharp notes  
(indicating more nut  
slot shaving is



to the pressing

of third fret,

there is no

space between

string and first

fret (as

recommended).

So my worry

was that

because there is

no clearance

using that trick,

shaving the nut

slots further

would cause

issues.

Since I'm using

a plastic nut on

a cheaper

guitar, I'll try

further shaving

and see how it

works out.

Thanks again.

Love your site

and willingness

to take the time

to answer

questions.



---

-----



I have a question GAG,  
Will lowering the action to  
medium level or low level cause  
hitting the nearby fret

Reply



### **Guitar Answer Guy**

July 29, 2018 at 12:17 PM

It could, yes. However, that  
doesn't mean you shouldn't  
at least try lowering your  
action. Sometimes you get  
lucky and are able to lower  
the action a bit without any  
noticeable buzzing. Give it a  
try, and if it buzzes, just raise  
it back up to where it was.

Buzzing means you'll need  
to modify your setup to  
accommodate the lower  
action. If you don't know  
how to do that and don't  
have the time or mental  
energy to learn to do your

own setups, take it to a pro who  
can lower your action and set it  
up for you.

**Mike**

May 8, 2018 at 6:18 AM

GAG,

I recently bought at Yamaha F335 to learn to play. I'm pretty sure the action is to high.

My question is: Is it ok for a beginner to try to lower the action? I've watched several videos and it doesn't look to complicated if I take my time.

Instead of spending \$50, I'd rather order a gauge and string winder and give it a shot myself. DO you think this is a bad idea?

Reply

**Guitar Answer Guy**

May 8, 2018 at 8:04 PM

Hi Mike. I'm always in favor of people learning to do their own setups. That said...

Since you're new to guitar, at this point the only way for you to objectively know



is to first measure it at the 12th

fret using the method I've outlined here. Let's make sure it's actually too high before you go shaving material off your bridge saddle—thereby permanently altering it.

Lowering the action on an acoustic guitar usually involves a combination of two—sometimes three—things:

- 1) adjusting the truss rod first to ensure the neck has the proper amount of relief
- 2) shaving some height off the saddle (only shave off the flat underside, never the top).
- 3) (Sometimes) adjusting the depth of the nut's string slots

However, #3 isn't something you should attempt on your first and only guitar. Better to pay a pro to do that or practice doing nut work on some junkers first (you can find cheap necks on ebay for less than \$20).

To make sure you're on the

THIS FOR ME.

- 1) Post your action measurements for the low E and high E at the 12th fret (use the method outlined here).
- 2) Post the links to the videos you mentioned. I'd like to see them so I can let you know whether the videos should be followed or not.

Reply



**Mike**

May 9, 2018 at 6:30 AM

GAG,

Will do. I have the measuring device you mentioned in the article on order and it should be here Friday. I'll post measurements and videos this weekend.

I also took your advice and ordered some extra light and light action strings.



## Guitar Answer Guy

May 9, 2018 at  
6:21 PM

The extra  
light strings,  
by  
themselves,  
will probably  
slightly  
lower your  
action too...  
just FYI.  
They'll exert  
less forward-  
pull on the  
neck,  
thereby  
allowing it to  
bow  
backward a  
tiny bit more  
than usual.  
The natural  
result is  
slightly  
lower action.





posted:

Reply



**Mike**

May  
15,  
2018  
at 6:58  
PM

GAG,

Sorry

for

the

delay.

Looks

like

my

Action

isn't

so

high

after

all.

My

action

is set

at

2.5mm

or

.0984

inches.



step  
higher  
the  
3/32".  
  
I  
haven't  
changed  
to the  
lighter  
strings.  
How  
much of  
it a  
difference  
would it  
make? I  
have  
Light  
and  
Extra  
Light  
Gauge  
ready to  
install.



**Guitar  
Answer  
Guy**  
May  
16,



Can  
you  
tell  
me  
the  
gauge  
of  
the  
curren  
strings  
and  
then  
the  
gauge  
of  
the  
two  
sets  
you've  
got  
there?  
Labels  
like  
"light",  
"extra  
light",  
etc.  
mean  
differe



deper.

on

the

string

manu

Once

I

know

the

differ

betwe

those

string

gauge

I

can

proba

give

you

some

idea

of

what

to

expec

Regar

it's

still

a

little



to  
know  
witho  
being  
able  
inspe  
your  
guitar  
Gener  
switcl  
to  
a  
much  
lighte  
gauge  
of  
string  
won't  
bring  
your  
actor  
down  
much  
but  
they'r  
so  
much  
easier  
to  
press



---

it  
essen  
gives  
you  
a  
simila  
benef  
  
When  
I  
drop  
someo  
from..  
say...  
a  
set  
of  
12's  
or  
13's  
down  
to  
a  
set  
of  
10's,  
they  
all  
say  
the  
same



which

That's

a

pretty

dramatic

change

Howe

if

you're

just

going

from

13's

down

to

12's

or

even

11's,

there's

not

much

of

a

difference



**Kes**

January 16, 2018 at 6:17 AM



guitar and really struggling with barred chords, along with the resulting pain in my hands, until I had a lesson with another guitar tutor who took one look at my acoustic guitar and explained that my strings were set too high. I only wish that I had seen this post three years ago as it would have saved me a lot of discomfort and frustration! That same week I had the strings lowered on my guitar and it's made such a difference. I still struggle with barred chords (I have tendonitis in my hands and wrists which makes it difficult for me) but not needing to use so much pressure has made it lot easier. Now all I need to do is to master that annoying Bm chord!

Reply



### **Guitar Answer Guy**

January 16, 2018 at 6:33 AM

Hi Kes! Thanks for sharing your story. Another thing you can try, which may make those bar chords easier, is really light guitar





---

haven't seen it  
already, I wrote a  
blog post titled  
"Fingers Sore from  
Playing Guitar?  
Lighten Up!" where  
I compiled a huge  
listing of ultra-light  
guitar strings.

Reply

---

