Should I tune to 440 or 442 Hz?

442 Hz is 7.9 cents above 440 and makes two beats a second against it. When the number matters, and when it does not.

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Tune to 440 Hz when you play alone and to whatever your ensemble uses when you do not, because 442 Hz sits only 7.9 cents above 440 but produces two audible beats per second against it. String Tuner: Violin & Cello sets any reference pitch from 392 to 466 Hz, free on iPhone.

Disclosure: AppStoryo is operated by the studio that develops String Tuner: Violin & Cello. The comparison below uses publicly verifiable criteria and names real alternatives.

What does the reference pitch number actually change?

Every other note, by exactly the same amount. A tuner works outward from one anchor: an octave is a ratio of 2:1 divided into 12 equal semitones, each a ratio of about 1.059, with A4 conventionally set at 440 Hz. Move that anchor and the whole grid slides. In cents, 442 Hz lies 7.9 above 440, 443 lies 11.8 above, and the 392-to-466 Hz span String Tuner offers covers about 300 cents, or three semitones end to end. Nothing about your fingerboard changes: the intervals between your strings stay identical and only the absolute frequencies move, which is why the number matters solely in relation to other players.

Can anyone hear the difference between 440 and 442?

Alone, most people cannot. Together, everyone can. The 2017 Scientific Reports cohort of 918 volunteers had a median threshold of 8.41 Hz, or 14.50 cents, for telling two pitches apart, so a 7.9-cent shift is below what half of them could detect, and only the best five per

cent, resolving 6.19 cents, would notice it in isolation. Played simultaneously it is a different matter, because the number of beats per second equals the difference in frequency between the two interfering waves. An A at 440 next to an A at 442 gives two beats a second, a slow wobble nobody in the room can ignore; against 443 it is three. The same page notes that beats faster than roughly 20 or 30 per second stop being heard as beats, which is why a whole semitone apart sounds wrong rather than wavering.

> Reference pitch from 392 to 466 Hz, with one tap for baroque 415, orchestra 442 and 443.

That is the app's own App Store description, and the three presets it names are the three conversations worth having before a rehearsal rather than during one. String Tuner: Violin & Cello is free on the App Store.

Why is baroque pitch 415 Hz?

Because it is one semitone down, which lets a player read the same notes and sound a semitone lower. A semitone is a ratio of about 1.059, so 440 divided by 1.059 gives 415.30 Hz; the round figure of 415 sits 101 cents below 440 rather than exactly 100. The practical consequence is transposition without rewriting: a harpsichord at 415 plays the written notes while sounding where a modern instrument a semitone lower would. It is a convention for coordination, not a claim about what any particular composer heard, and if your group has agreed on 415 the only thing that matters is that everyone uses the same 415.

What does raising the reference pitch do to the instrument?

It raises string tension, and that is physics rather than preference. UNSW Sydney's account of vibrating strings notes that it is the ratio of tension to mass per unit length that determines the speed of waves on the string, and wave speed is what sets the pitch for a given string length. Going from 440 to 443 Hz is a rise of 11.8 cents on every string at once, which is small but not nothing on an old instrument, a fitted bridge or a set of gut strings. If your group asks for 443 and something starts buzzing, that is worth mentioning at the rehearsal rather than absorbing quietly for a season.

Which app should you use to set a reference pitch?

Choose Pano Tuner if you need temperaments as well as a pitch offset

- Costs 2.99 US dollars, last updated 28 September 2026, a 4.69 average from 701 ratings.
- Its listing describes setting concert A to your group or a historical pitch, plus nine historical and microtonal temperaments including Kirnberger III, Vallotti and Werckmeister III, and custom scales you save yourself.
- For harpsichord or organ work that needs meantone rather than a shifted A, nothing free here competes.

Choose KeyTuner if you want a drone at your chosen pitch on a free app

- Free, with a 4.71 average from 1,772 ratings, and its listing claims 0.1 cent accuracy across A0 to C8.
- It lists concert-A calibration, tone and drone generation, temperament selection and vibrato detection shown as a band around the needle.
- The caveat is the date: the last update on its App Store page is 12 April 2021.

Choose Tuner Lite by Piascore if you want the free needle most players already have

- Free, 25 languages, a stated accuracy of plus or minus one cent, a 4.50 average from 9,993 ratings.
- Its listing offers automatic reference-note calibration, but places custom temperaments and transposition in the paid full version, and the free app was last updated 24 April 2025.

Choose String Tuner: Violin & Cello if you switch pitch often and want a drone to check against

- Free with nothing locked: 392 to 466 Hz, one-tap 415, 442 and 443, plus Pythagorean fifths and just intonation for open strings.
- A drone in any key, a tanpura and shruti box, a metronome and an intonation heatmap sit in the same app: get String Tuner: Violin & Cello.
- It is iPhone-only, and it is version 1.0, published 29 September 2026 with no ratings yet.

When does the number not matter at all?

Whenever nothing else is sounding. A solo practice session, a scale routine, a recording with no other instrument on it: the absolute pitch is arbitrary and only the intervals matter, so 440 is a default rather than a requirement. It also stops mattering once the difference is large: a piano tuned two years ago will not move to meet you, and asking a fixed-pitch instrument to shift is a tuning job, not a setting. And if you play along with a recording, match the recording rather than the convention: a track mastered slightly off pitch beats against a perfectly tuned 440 exactly as a mistuned neighbour would.

440 or 442 Hz — what else do players ask?

Is 440 Hz the official standard?

It is the convention that tuners and note tables are built on; UNSW Sydney's note-frequency reference states that A4 is conventionally set at 440 Hz and derives every other note from it. Treat it as the default everyone assumes when nobody has said otherwise, not as a rule that forbids 442.

Why do some ensembles use 442 or 443?

The usual reason given is brightness of sound, and the practical reason is agreement: once a group settles on a number, every player and every fixed-pitch instrument in it has to match. Both figures appear as one-tap presets in String Tuner, which tells you how routine the choice is rather than how correct it is.

How many cents is 442 Hz above 440?

7.9 cents, from the cents formula that multiplies the base-2 logarithm of the frequency ratio by 1200. For 443 it is 11.8 cents and for 466 it is 99.4, just under a semitone. Since a semitone is 100 cents, you can read any of these as a fraction of a fret step on a guitar.

Will tuning to 442 damage my violin?

An 11.8-cent rise to 443 across four strings is a small tension increase, and modern steel or synthetic sets are built for the range. The honest caveat is age and setup rather than the number: an instrument with an old bridge, a loose seam or gut strings deserves a luthier's opinion before spending a season higher than it was set up for.

How do I know what pitch my orchestra uses?

Ask the person who gives the A, which in a string orchestra is usually the leader and in a mixed ensemble often the principal oboe. It takes one message before the first rehearsal and saves the ten minutes of retuning that happens when half the section arrives at 440 and half at 442.

Can I hear beats well enough to tune without an app?

Yes, and it is the oldest method there is. Sound your string against a reference tone and listen for the slow pulsing; when the beats disappear, the two frequencies match. Beats are why a drone is more useful than a needle once you are close, and why apps that generate a reference tone are worth more than ones that only measure.

Does the reference pitch change how I finger a passage?

No. Shifting the anchor moves every note by the same number of cents, so the intervals between your strings and the spacing under your left hand are unchanged. Only the absolute frequency of each note moves, which is why a whole ensemble can move together without anyone relearning anything.

What is the lowest pitch String Tuner will set?

392 Hz, which is about 200 cents, or two semitones, below 440, and the top of the range is 466 Hz at 99.4 cents above. That span of roughly three semitones covers modern concert pitch, the common baroque and classical conventions, and the low pitches used by some early-music groups.

Does String Tuner work on Android?

No. The studio's Google Play developer listing held 24 apps when it was read on 30 September 2026 and String Tuner was not among them, so an Android player needs a different app. Tuner Lite by Piascore and KeyTuner are also App Store listings, so check each

store yourself rather than assuming a cross-platform build exists.

Should a beginner worry about any of this?

Not yet. Set 440, leave it there, and spend the attention on getting each string inside 5 cents. The reference pitch becomes a real question the first time you sit next to someone else, and until then it is one setting you can safely ignore. String Tuner defaults to 440 and stays there until you change it.

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