

## Chapter XX

### מסכת ברכות · פרק שני · משנה ג.

קרא ולא דקדק באותיותיה: רבי יוסי אומר: יצא; רבי יהודה אומר: לא יצא.

*“If one read [the Shema], but was not precise with its letters: Rabbi Yossi says he has fulfilled his obligation, Rabbi Yehuda says he has not fulfilled his obligation.”*

### Why is it impossible to whisper the “z” sound?

Have you ever heard someone saying Shema quietly and then suddenly raise his voice to say תִּזְכְּרוּ, emphasizing the “z” sound of its “r”? What’s going on?



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Fig XX.1 Reciting the Shema

As the Mishna makes clear, one must recite Shema clearly and accurately. So, it is important to pronounce each word of the Shema distinctly (Orach Chaim 61). For instance, when you say בְּכַל לְבָבְךָ while speaking normally, the two *lammets* naturally connect together to make a single *lammed* sound, producing the nonsense word, בְּכַלְבָּבְךָ. When you say the Shema, each word must be pronounced clearly and accurately by itself, so you must pause briefly between all such word pairs (M.B. 61:33). There are many of these in the Shema, and a good siddur will mark them, so you can fulfill the mitzva properly.

Just as it is important to pronounce each word distinctly, it is also important to pronounce the letters within each word correctly (M.B. 61:16, 17, etc.) This can be especially challenging if one recites Shema in a whisper, because certain sounds are impossible to pronounce while whispering. One such sound is the “z” sound of the letter *zayin*. Try it! Whisper the word “zoo”. What do you hear? “soo”!

Whisper the phrase למען תִּזְכְּרוּ. What do you hear? למען תִּשְׁכְּרוּ! That is definitely not good, because unlike “soo”, which is a meaningless sound, למען תִּשְׁכְּרוּ has a meaning of its own, one which is very different from the intended meaning of למען תִּזְכְּרוּ. The words as they are correctly written (למען תִּזְכְּרוּ) mean “so that you will remember,” and in context they mean, “You shall put tzittzis on the corners of your garments...so that you will remember and do all My mitzvos....” If one whispers these words, thereby incorrectly saying, “למען תִּשְׁכְּרוּ”

that would mean “so that you will profit”, and in context that would mean, “You shall put tzitzis on the corners of your garments...so that you will profit and do all my mitzvos....” Such a mispronunciation would make the terribly incorrect statement that one performs the mitzvos for the sake earning a reward, rather than because they are Divine decrees (Orach Chaim 61:17), and our Rabbis warned us strongly against such an attitude (Avos 1:3, Rambam Hilchos Teshuva 10:1).

So now you know why people stop whispering to say תִּזְכְּרוּ, וְזָכַרְתֶּם, זָכַרְתֶּם etc. But this still leaves a very basic question unanswered: Why is it impossible to whisper the “z” sound?

How do we make sounds with our voices?

To create the sound of any letter in the alphabet (or *aleph-bet*), two things are needed: (1) a flow of air and (2) something to make that air **vibrate** (move back and forth). Small, typically fast, and consistently repeating back-and-forth movement is called vibration. Vibration is an essential part of every sound. For example, to create the sound of a guitar, you pluck one of its strings. Pulling and then releasing the guitar string causes the string to vibrate, moving it back-and-forth rather quickly across a very short distance. If you experiment, you will find that tightening a guitar string produces a higher **pitched** sound. This happens because a tighter string cannot move quite as far back-and-forth, as shown in Fig XX.2. This means it will take less time for the string to complete one full back-and-forth motion, which is the same as saying that it vibrates faster. Faster vibrations sound higher pitched to us. If you loosen the string, its pitch becomes lower, because the string vibrates less quickly.

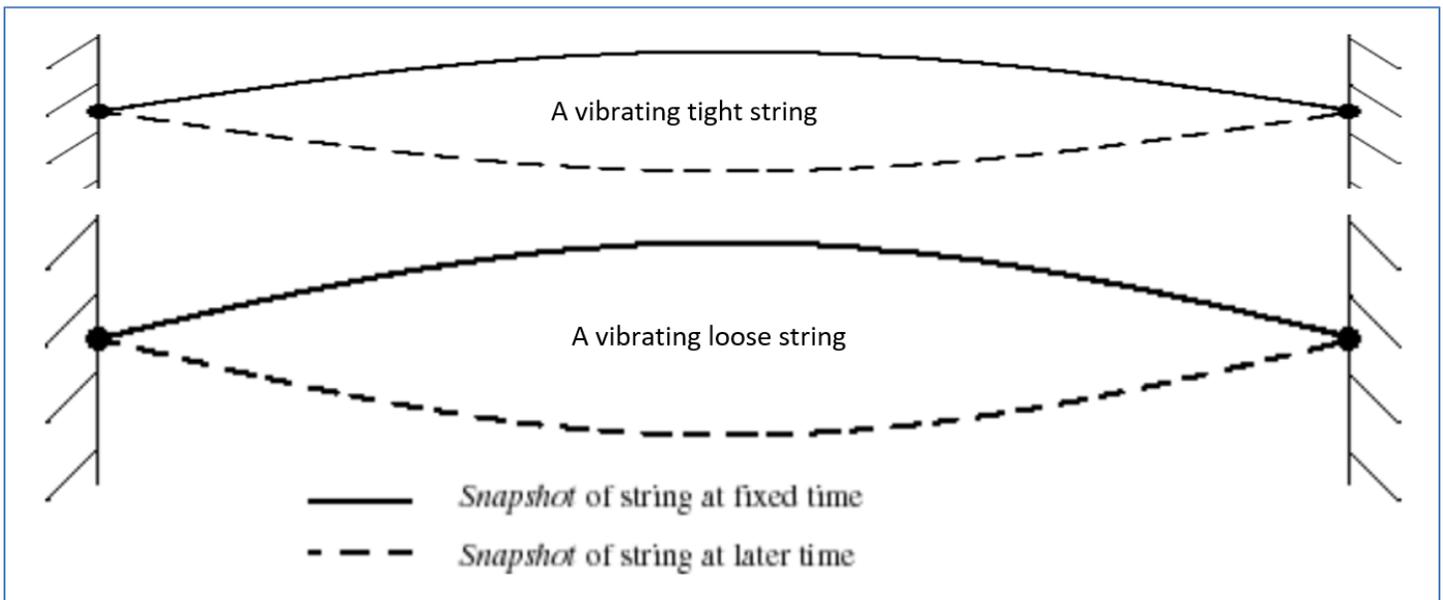


Fig.XX.2 A tight string cannot move back and forth as much as a loose string

You might also note that if you loosen the string too much, a gentle pluck won't make any noise at all. This is because if the string isn't taut (under some tension), it won't vibrate much at all.

A guitar is more than just six strings that can vibrate. The sound that comes from the vibrating strings enters the specially shaped hollow wooden body of the guitar where it resonates (bounces around) creating the beautiful, rich sound that we recognize as the sound of a guitar (Fig XX.3).

Something similar happens when you blow into a reed instrument such as a clarinet (see Fig.XX.4). In that case, the vibrating object is the **reed**, and the distinctive sounds of the clarinet come from this vibration of the reed, creating sounds that resonate inside the tube of the clarinet. You can modify the sound by opening and closing the holes on the tube with the keys.



Fig.XX.3 A vibrating guitar string over the hole in the body of the guitar, where the sound enters and resonates



Fig.XX.4 On the left is a clarinet, in the middle is an enlarged picture of its mouthpiece showing the location of its reed, and on the right, you can see a sideways-view of a reed, showing how it vibrates.

Many of the sounds we make when we speak are made in a similar way to the sounds of a clarinet. When we exhale (breathe out), the air inside our lungs is pushed through a tube that connects our lungs to our mouth (and nose). This tube is called the **trachea** (also known as the windpipe, or perhaps familiar to you by the Hebrew קנה). Look at Fig.XX.5 to see the different parts of your body that make sound. You can feel the ridges of your trachea if you run your thumb up and down the bottom-half of the front of your neck. After the air leaves the trachea, but before it reaches the mouth, it must pass through the **larynx** (voice box), which sits atop of the trachea. Stretched across each side of the larynx are two flaps of very specialized tissue, called **vocal cords** or **vocal folds**. When you want to talk normally, your vocal cords tighten so that as the exhaled air leaves the trachea, it passes over your vocal cords, causing them to vibrate like the reed of a clarinet. When you make high- or low-pitched sounds, this is the result of your vocal cords tightening or loosening. This basic sound then moves up into the cavities (hollow spaces) in and behind your mouth and nose, which function a lot like the tube of a clarinet. We speak by changing the shape of these spaces by quickly moving our mouth, lips, and tongue. When we speak, the huge variety of sounds we make are almost all created by the vibrating air leaving the larynx (where the vocal cords are) and resonating in the hollows of the mouth and nose. Truly a wonder!

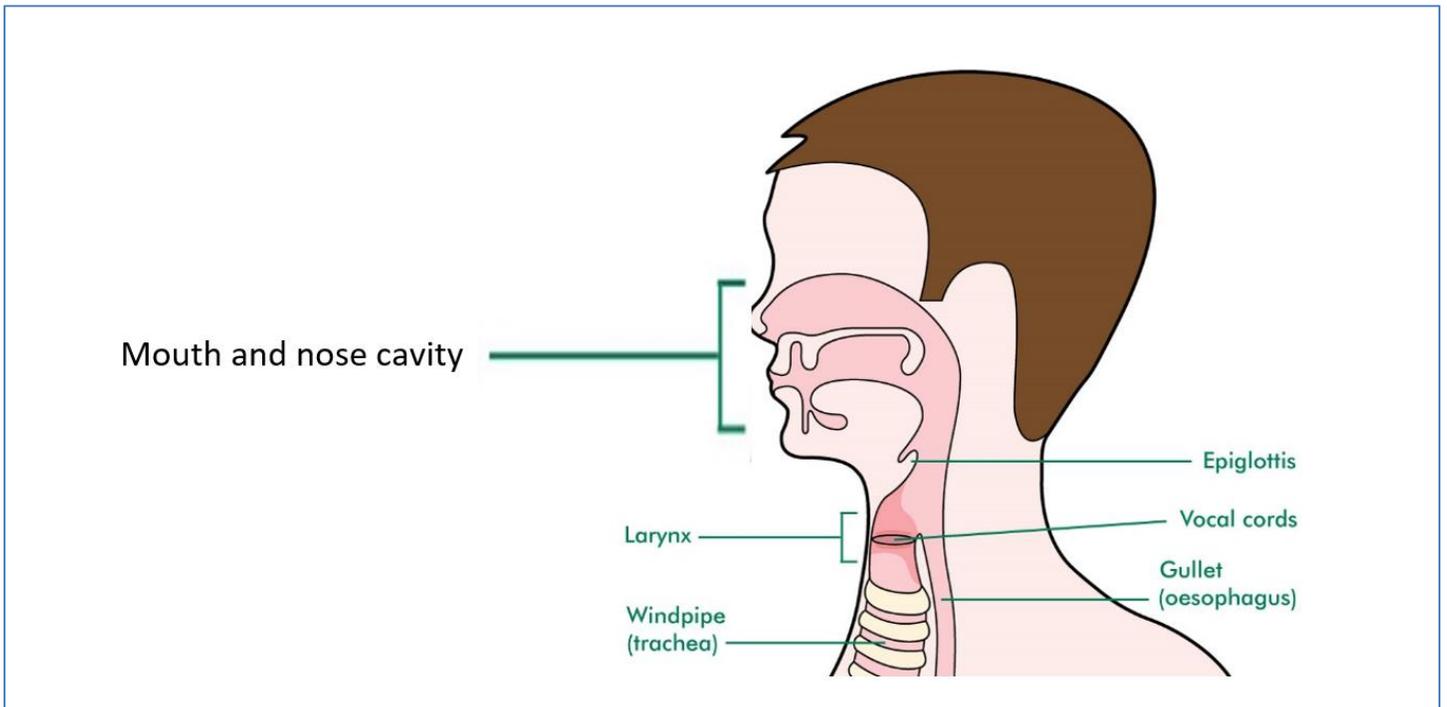


Fig.XX.5 The different parts of your body that make sound. *(picture needs to include the lungs)*

Try making a sound without moving your mouth or tongue at all. You will find that you can only make a rather uninteresting sound of the sort you make when the doctor tells you to open your mouth and say “ahhh”. However, if you try, you will find that you can adjust this sound to a higher or lower pitch (still without moving your mouth or tongue.) This happens as your body tightens the vocal cords (raising the pitch) or loosens them (lowering the pitch). You might also discover that you can make the sound louder by exhaling more vigorously (pushing air out of your lungs faster) or more quietly by reducing the rate of airflow (pushing the air out of your lungs less energetically). That, however, is all the variety possible without making other types of adjustments to the sound from the vocal cords within your mouth.

Your vocal cords are the origin of most of the sounds we use in English, but not all of them. For instance, the “s” sound is not made with the vocal cords. There is another way we make sound or speech, one that doesn’t involve vibrating our vocal cords. You will recall that all sound needs vibration. Instead of making the air vibrate with the vocal cords, we can make the air vibrate by forcing it through a narrow gap in the throat. We make that narrow gap by tightening the muscles at the back of the throat or around the larynx. This is like the sound that a narrow straw might make if you blow down or across the straw opening. We can, however, still adjust our mouth parts, so most of the sounds that we make in speech are still possible. The sounds we make this way lack many of the features that give our voice its rich sound, and so we usually only speak without our vocal cords when we want to whisper.

Finally, we can answer our original question: Why is it impossible to whisper the “z” sound?

Put your fingers back where you can feel the ridges of your trachea at the bottom of the front of your neck. Say “zoo” and “soo”, alternating between the two. You will feel the vibrations of the vocal cords as soon as you vocalize the z-sound of “zoo”, and as soon as you lapse back into “soo”, the vibrations stop.

Producing the “z” sound requires fast vibrations, and we have no way to make the air vibrate fast enough without the vocal cords. No matter what you do with your mouth, there is no way to modify a whisper to create a “z” sound, since the air in your mouth isn’t vibrating fast enough to begin with. In other words, the “z” sounds must be vocalized by vibrating the vocal cords, and whispering is intentionally not vibrating the vocal cords, so no “z” sound while whispering is possible. This is why when you are saying Shema in a whisper, you are forced to raise your voice and vocalize the words with a *zayin*, such as תִּזְכְּרוּ, because otherwise the “z” sound with come out like an “s”, and it would sound like תִּשְׁכְּרוּ.

### Fun Fact

Your vocal cords only work when the air moves out of your lungs (when you exhale) but not when you are bringing air into your lungs (when you inhale), so when you are talking, you need to pause periodically to take a breath. When you whisper, you aren’t using your vocal cords, so you are able to whisper whether you are exhaling or inhaling, without having any need to pause. Try it! You’ll see you are able to say “soo” while inhaling or exhaling, but you can only make the “zoo” sound while exhaling.