# Recording speech for research

Please read both the **Recording Audio** and **Storing Data Securely** sections carefully.

## Recording Audio

Recording speech for phonetic and linguistic analysis is not as simple as it sounds. There are in fact many things to consider when recording speech, including the type of microphone, recorder, audio file format, recorder settings (bit rate, sampling rate), recording location, and so on. All of these affect the quality of the data.

Fortunately, most modern smartphones already have relatively high-quality hardware so we won't worry about this too much.[1] For this class, the only issue we'll concern ourselves with is **file compression**, which pertains to the format of the digital audio file the recording is saved as. Ideally we want an *uncompressed* format, e.g. a `.wav` or `.aiff` file. Other formats, such as `.mp3` or `.m4a`, are compressed in one way or another to save disk space, which means they necessarily lose some information. This is why formats like `.mp3` are sometimes referred to as 'lossy' formats.

So we want to record audio in a format that preserves as much of the acoustic information as possible. That is, we want to use an **uncompressed**, or 'lossless', format if at all possible.[2] Unfortunately, most out-of-the-box recording software is designed to save space rather than preserve sound quality, so I've provided some recommendations for easy-to-use audio software that can record uncompressed audio files.

## On a smart phone

Smartphones usually come with a voice memo app that can be used for making recordings, but this built-in app usually creates highly compressed, low-quality sound files (usually `.m4a`, `.mp3` or `.mp4`) and does not have any customizable settings. I therefore recommend getting an app designed for good quality sound recording.

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[1] Awan, S.N., Shaikh, M.A., Awan, J.A., et al. (2023) Smartphone recordings are comparable to "Gold Standard" recordings for acoustic measurements of voice. *Journal of Voice.* doi:10.1016/j.jvoice.2023.01.031.

[2] See pages 170-172 in Podesva, R.J. and Zsiga, E. (2013) "Sound recordings: acoustic and articulatory data." In Podesva, R. and Sharma, D. (eds.) *Research methods in linguistics.* Cambridge ; New York: Cambridge University Press. pp. 169–194.

## iPhone
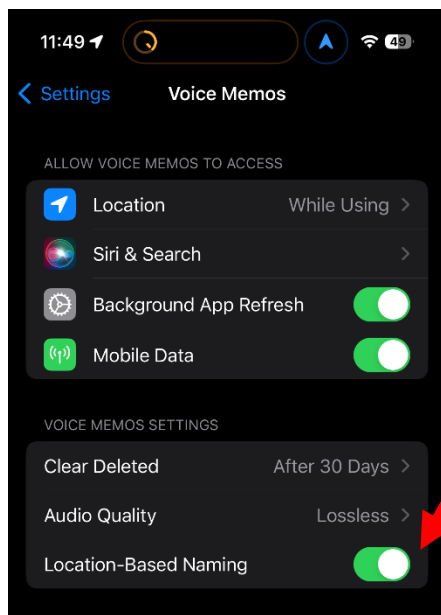


For iPhones, you can use the **Voice Memos** app that comes built in, however you'll need to change the settings for it.

To do this open **Settings** and scroll down to Voice Memos. Under Voice Memos, go to **Audio Quality** and set it to 'Lossless'.

## Android

For Android, the Sony **Audio Recorder** app is a good option. I don't have an Android device, but the settings are easy to adjust from what I've read. You can find a recommendation here: https://thenextweb.com/basics/2018/11/26/this-is-the-best-way-to-record-and-share-audio-on-android/

# On a laptop or desktop

I recommend **Audacity** (https://www.audacityteam.org/download/) or **Praat** (https://www.fon.hum.uva.nl/praat/) because they are free, easy to use, and available on all platforms.

## To record yourself with Audacity:

1. Install Audacity and open it up
2. Check that it is recording from the microphone. It will list the audio source next to the little microphone icon. You can change the source in the drop-down list.
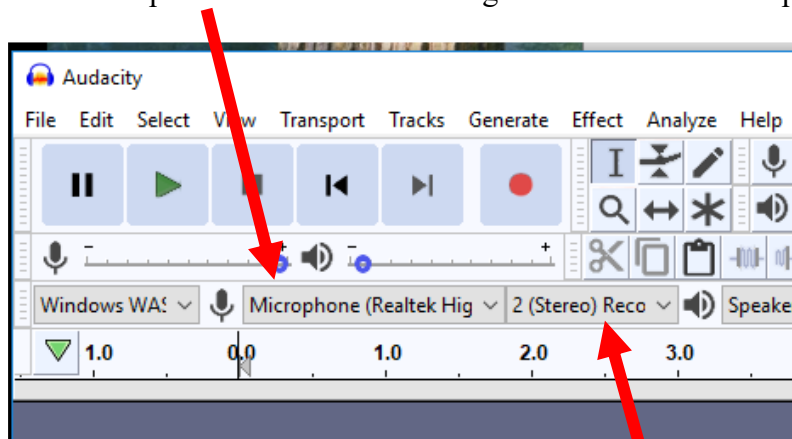


3. For this recording, change the setting to '(**Mono**)', here

4. Start recording by clicking the Record button (the red circle). Stop recording with the Stop button (the square).
5. Save the audio file by going to File > Export > Export as WAV
6. For more details, see this video: https://youtu.be/fshLRl3GWqE

*To record yourself with Praat:*

You can find a very helpful (2-3 min.) video here: https://youtu.be/Qm8ubEDD2s8

## Storing Data Securely

All recordings must be stored in a secure space. You can use your university OneDrive for this, but **you should not keep copies of your data on your personal device**, and you should not sync data with your personal cloud services, e.g. iCloud.

To turn off iCloud syncing for iPhone users, open the **Settings** app and click on your name (where it says "Apple ID, iCloud, Media…"). Then go to **iCloud** and click "Show All". Go down to **Voice Memos**, and turn <u>off</u> syncing.