|  |  |
| --- | --- |
| Service user’s name: |  |
| Service user’s ID number/reference/NHS number: |  |
| Date of recording:dd/mm/yyyy |  |
| Date of birth:dd/mm/yyyy |  |
| Gender identity: |  |
| Name of professional: |  |
| Role of professional carrying out evaluation: |  |
| Location / site / Clinic: |  |

## Making voice recordings

It is recommended that you use Audacity to record. You may also record directly into Praat.

* **Sustained [ɑː]** *for at least 6 seconds*
* **Rainbow Passage**
<https://www.york.ac.uk/media/languageandlinguistics/documents/currentstudents/linguisticsresources/Standardised-reading.pdf>
* Consider asking the service user to sing ‘**Happy Birthday to You**’ to hear pitch changes.

See:

Pert, S. (2023). *Making a voice recording and evaluating the vocal frequency (pitch) and sound pressure level (loudness)*. <https://www.speechtherapy.co.uk/page-19/page-14/>

Curtis, J. (2022). *Tutorials: Voice.* <https://www.jamescurtisphd.me/tutorials/voice/acoustic-analysis-of-voice>

## Fundamental frequency

**Praat**: Highlight sound file🡺View and Edit🡺*Highlight section to be analysed*🡺

* Pulses🡺 Voice report OR
* Pitch🡺Get pitch / Get minimum pitch / Get maximum pitch

|  |  |
| --- | --- |
| Speech analysed: | Sustained [ɑː] - 2-3 second middle segmentRainbow Passage |
| Mean pitch: |  Hz |
| Minimum pitch: |  Hz |
| Maximum pitch: |  Hz |
| Pitch range: (For connected speech) |  Hz |
| Observations/Comments: |  |

* The cismale range is *approximately* 100-140 Hz
* The gender-neutral range is *approximately* 145-175 Hz
* The cisfemale range is *approximately* 180-220 Hz
	+ (Davies, 2015, p. 122)

## Sound Pressure Level – Loudness

**Praat**: Highlight sound file🡺View and Edit🡺*Highlight section to be analysed*🡺

* Intensity🡺Get intensity / Get minimum intensity / Get maximum intensity

|  |  |
| --- | --- |
| Speech analysed: |  |
| Intensity Mean: |  dB |
| Minimum intensity: |  dB |
| Maximum intensity: |  dB |
| Intensity range: (For connected speech) |  dB |
| Observations/Comments: |  |

**Table 2. Intensity of speech – Conversational Intensity Levels (CIL)**

Second and third sentences of the Rainbow Passage recorded at 30 cm from the speaker.

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Mean CIL (dB)** | **Standard deviation** | **Range (dB)** |
| Both genders | 68.65 | 2.85 | 60.21 to 77.72 |
| Cis males | 69.53 | 2.77 | 60.59 to 79.00 |
| Cis females | 67.77 | 2.71 | 59.82 to 76.44 |

(N=20 males, 20 females, trial 1 data)
(After Pausewang Gelfer & Ryan Young, 1997)

## Voice Disorder Screening: Smoothed Cepstral Peak Prominence (CPPS)

**Requires installation of the free plug-in:** <https://osf.io/t5hrv/> (Heller-Murray, 2022)

**Praat**: Highlight sound file🡺Calculate CPPS >Single file…🡺OK

|  |  |
| --- | --- |
| **Speech analysed**: | Sustained [ɑː] - 2-3 second middle segmentSecond sentence of the Rainbow Passage |
| **CPPS graph**:**Praat**: Praat Picture🡺Save as 600-dpi PNG file…🡺*filename***Microsoft Word**: *click on the picture on the right to replace*🡺Insert🡺Pictures=Picture from File🡺*Select file saved in Praat*🡺*Resize* | Chart  Description automatically generated |
| **CCPPS with voice detection value**: |  |
| CPPS is **<14.45 dB for** [ɑː] vowel: | Yes – voice disorder suspectedNo – voice disorder not suspected |
| CPPS is **<9.33 dB** for connected speech: | Yes – voice disorder suspectedNo – voice disorder not suspected |
| Observations/Comments/Actions: |  |

*Please accompany with subjective evaluations and
refer to clinical guidelines on voice evaluation.*

## References

Boersma, P. and Weenink, D. (2023). *Praat: doing phonetics by computer [Computer program]*. Version 6.3.09, retrieved 2 March 2023 from <http://www.praat.org/>

Curtis, J. (2022, 6th April 2023). *Tutorials: Voice*. <https://www.jamescurtisphd.me/tutorials/voice>

Davies, S., Papp, V. G., & Antoni, C. (2015). Voice and Communication Change for Gender Nonconforming Individuals: Giving Voice to the Person Inside. *International Journal of Transgenderism*, *16*(3), 117-159. <https://doi.org/10.1080/15532739.2015.1075931>

Heller Murray, E. (2022). *Cepstral Peak Prominence – Praat with and without voice detection*. <https://osf.io/t5hrv/>

Pausewang Geifer, M. & Young, S. R. (1997). Comparisons of intensity measures and their stability in male and female speakers. *Journal of Voice*, *11*(2), 178-186. https://doi.org/10.1016/S0892-1997(97)80076-8

Pert, S. (2023). *Making a voice recording and evaluating the vocal frequency (pitch) and sound pressure level (loudness)*. <https://www.speechtherapy.co.uk/page-19/page-14/>

## Clinical guidelines

American Speech-Language-Hearing Association (ASHA) (2023). *Voice Disorders*. <https://www.asha.org/practice-portal/clinical-topics/voice-disorders/>

Royal College of Speech and Language Therapists (RCSLT)(2023). *Voice – guidance*: *Assessment*. <https://www.rcslt.org/members/clinical-guidance/voice/voice-guidance/#section-7>