

Supplemental Material S4. The first investigator’s total score and overall methodological rating of all included studies.

	Publication	Total score	Rating
1.	Cox & Xu, 2010	37	good
2.	Dawes & Munro, 2017	36	good
3.	Desjardins & Doherty, 2014	34	good
4.	Ellis & Munro, 2015	32	moderate
5.	Foo et al., 2007	33	moderate
6.	Keidser et al., 2013	32	moderate
7.	Lopez-Poveda et al., 2017	29	very weak
8.	Moradi et al., 2014	31	weak
9.	Neher et al., 2016	31	weak
10.	Picou et al., 2013	38	good
11.	Rudner et al., 2009	32	moderate
12.	Rudner et al., 2011	34	good
13.	Shehorn et al., 2018	26	very weak
14.	Souza & Sirow, 2014	29	very weak
15.	Wendt et al., 2017	26	very weak
16.	Yumba, 2017	30	weak

References

- Cox, R. M., & Xu, J. (2010). Short and long compression release times: Speech understanding, real-world preferences, and association with cognitive ability. *Journal of the American Academy of Audiology*, 21(2), 121–138. <https://doi.org/10.3766/jaaa.21.2.6>
- Dawes, P., & Munro, K. J. (2017). Auditory distraction and acclimatization to hearing aids. *Ear and Hearing*, 38(2), 174–183. <https://doi.org/10.1097/AUD.0000000000000366>
- Desjardins, J. L., & Doherty, K. A. (2014). The effect of hearing aid noise reduction on listening effort in hearing-impaired adults. *Ear and Hearing*, 35(6), 600–610. <https://doi.org/10.1097/AUD.0000000000000028>
- Ellis, R. J., & Munro, K. J. (2015). Predictors of aided speech recognition, with and without frequency compression, in older adults. *International Journal of Audiology*, 54(7), 467–475. <https://doi.org/10.3109/14992027.2014.996825>
- Foo, C., Rudner, M., Ronnberg, J., & Lunner, T. (2007). Recognition of speech in noise with new hearing instrument compression release settings requires explicit cognitive storage and processing capacity. *Journal of the American Academy of Audiology*, 18(7), 618–631. <https://doi.org/10.3766/jaaa.18.7.8>
- Keidser, G., Dillon, H., Convery, E., & Mejia, J. (2013). Factors influencing individual variation in perceptual directional microphone benefit. *Journal of the American Academy of Audiology*, 24(10), 955–968. <https://doi.org/10.3766/jaaa.24.10.7>
- Lopez-Poveda, E. A., Johannesen, P. T., Perez-Gonzalez, P., Blanco, J. L., Kalluri, S., & Edwards, B. (2017). Predictors of hearing-aid outcomes. *Trends in Hearing*, 21. <https://doi.org/10.1177/2331216517730526>
- Moradi, S., Lidestam, B., Hallgren, M., & Ronnberg, J. (2014). Gated auditory speech perception in elderly hearing aid users and elderly normal-hearing individuals: Effects of hearing impairment and cognitive capacity. *Trends in Hearing*, 18, 1–12. <https://doi.org/10.1177/2331216514545406>
- Neher, T., Wagener, K. C., & Fischer, R. L. (2016). Directional processing and noise reduction in hearing AIDs: Individual and situational influences on preferred setting. *Journal of the American Academy of Audiology*, 27(8), 628–646. <https://doi.org/10.3766/jaaa.15062>
- Picou, E. M., Ricketts, T. A., & Hornsby, B. W. (2013). How hearing aids, background noise, and visual cues influence objective listening effort. *Ear and Hearing*, 34(5), 52–64. <https://doi.org/10.1097/AUD.0b013e31827f0431>
- Rudner, M., Foo, C., Ronnberg, J., & Lunner, T. (2009). Cognition and aided speech recognition in noise: Specific role for cognitive factors following nine-week experience with adjusted compression settings in hearing aids. *Scandinavian Journal of Psychology*, 50(5), 405–418. <https://doi.org/10.1111/j.1467-9450.2009.00745.x>
- Rudner, M., Ronnberg, J., & Lunner, T. (2011). Working memory supports listening in noise for persons with hearing impairment. *Journal of the American Academy of Audiology*, 22(3), 156–167. <https://doi.org/10.3766/jaaa.22.3.4>
- Shehorn, J., Marrone, N., & Muller, T. (2018). Speech perception in noise and listening effort of older adults with nonlinear frequency compression hearing aids. *Ear and Hearing*, 39(2), 215–225. <https://doi.org/10.1097/AUD.0000000000000481>
- Souza, P. E., & Sirow, L. (2014). Relating working memory to compression parameters in clinically fit hearing aids. *American Journal of Audiology*, 23(4), 394–401. https://doi.org/10.1044/2014_AJA-14-0006
- Wendt, D., Hietkamp, R. K., & Lunner, T. (2017). Impact of noise and noise reduction on processing effort: A pupillometry study. *Ear and Hearing*, 38(6), 690–700. <https://doi.org/10.1097/AUD.0000000000000454>
- Yumba, W. K. (2017). Cognitive processing speed, working memory, and the intelligibility of hearing aid-processed speech in persons with hearing impairment. *Frontiers in Psychology*, 8, 1308. <https://doi.org/10.3389/fpsyg.2017.01308>