



Supplementary Fig. 1. The developmental history of various languages for the digit-in-noise test over two decades.

REFERENCES

- Smits C, Kapteyn TS, Houtgast T. Development and validation of an automatic speech-in-noise screening test by telephone. *Int J Audiol* 2004;43:15-28.
- Wilson RH, Burks CA, Weakley DG. A comparison of word-recognition abilities assessed with digit pairs and digit triplets in multitalker babble. *J Rehabil Res Dev* 2005;42:499-510.
- Wilson RH, Weakley DG. The use of digit triplets to evaluate word-recognition abilities in multitalker babble. *Semin Hear* 2004;25:93-111.
- Smits C, Houtgast T. Results from the Dutch speech-in-noise screening test by telephone. *Ear Hear* 2005;26:89-95.
- Smits C, Houtgast T. Recognition of digits in different types of noise by normal-hearing and hearing-impaired listeners. *Int J Audiol* 2007;46:134-44.
- Wilson RH, Burks CA, Weakley DG. Word recognition of digit triplets and monosyllabic words in multitalker babble by listeners with sensorineural hearing loss. *J Am Acad Audiol* 2006;17:385-97.
- Ozimek E, Kutzner D, Şek A, Wicher A. Development and evaluation of Polish digit triplet test for auditory screening. *Speech Commun* 2009;51:307-16.
- Jansen S, Luts H, Wagener KC, Frachet B, Wouters J. The French digit triplet test: a hearing screening tool for speech intelligibility in noise. *Int J Audiol* 2010;49:378-87.
- Leensen MC, de Laat JA, Dreschler WA. Speech-in-noise screening tests by internet, part 1: test evaluation for noise-induced hearing loss identification. *Int J Audiol* 2011;50:823-34.
- Lyzenga J, Smits C. Effects of coarticulation, prosody, and noise freshness on the intelligibility of digit triplets in noise. *J Am Acad Audiol* 2011;22:215-21.
- Jansen S, Luts H, Wagener KC, Kollmeier B, Del Rio M, Dauman R, et al. Comparison of three types of French speech-in-noise tests: a multi-center study. *Int J Audiol* 2012;51:164-73.
- Zokoll MA, Wagener KC, Brand T, Buschermöhle M, Kollmeier B. Internationally comparable screening tests for listening in noise in several European languages: the German digit triplet test as an optimization prototype. *Int J Audiol* 2012;51:697-707.
- Watson CS, Kidd GR, Miller JD, Smits C, Humes LE. Telephone screening tests for functionally impaired hearing: current use in seven countries and development of a US version. *J Am Acad Audiol* 2012;23:757-67.
- Smits C, Theo Goverts S, Festen JM. The digits-in-noise test: assessing auditory speech recognition abilities in noise. *J Acoust Soc Am* 2013;133:1693-706.
- Vlaming MS, MacKinnon RC, Jansen M, Moore DR. Automated screening for high-frequency hearing loss. *Ear Hear* 2014;35:667-79.
- Williams-Sanchez V, McArdle RA, Wilson RH, Kidd GR, Watson CS, Bourne AL. Validation of a screening test of auditory function using the telephone. *J Am Acad Audiol* 2014;25:937-51.
- Jansen S, Luts H, Dejonckere P, van Wieringen A, Wouters J. Efficient hearing screening in noise-exposed listeners using the digit triplet test. *Ear Hear* 2013;34:773-8.
- Jansen S, Luts H, Dejonckere P, van Wieringen A, Wouters J. Exploring the sensitivity of speech-in-noise tests for noise-induced hearing loss. *Int J Audiol* 2014;53:199-205.
- Kaandorp MW, Smits C, Merkus P, Goverts ST, Festen JM. Assessing speech recognition abilities with digits in noise in cochlear implant and hearing aid users. *Int J Audiol* 2015;54:48-57.
- Potgieter JM, Swanepoel de W, Myburgh HC, Hopper TC, Smits C. Development and validation of a smartphone-based digits-in-noise hearing test in South African English. *Int J Audiol* 2016;55:405-11.
- Koole A, Nagtegaal AP, Homans NC, Hofman A, Baatenburg de Jong RJ, Goedegebure A. Using the digits-in-noise test to estimate age-related hearing loss. *Ear Hear* 2016;37:508-13.
- de Graaff F, Huysmans E, Qazi OU, Vanpoucke FJ, Merkus P, Goverts ST, et al. The development of remote speech recognition tests for adult cochlear implant users: the effect of presentation mode of the noise and a reliable method to deliver sound in home environments. *Audiol Neurotol* 2016;21 Suppl 1:48-54.
- Folmer RL, Vachhani J, McMillan GP, Watson C, Kidd GR, Feeny MP. Validation of a computer-administered version of the digits-in-noise test for hearing screening in the United States. *J Am Acad Audiol* 2017;28:161-9.
- Willberg T, Buschermöhle M, Sivonen V, Aarnisalo AA, Löppönen H, Kollmeier B, et al. The development and evaluation of the Finnish digit triplet test. *Acta Otolaryngol* 2016;136:1035-40.
- Zokoll MA, Wagener KC, Kollmeier B. Diagnosing and screening in a minority language: a validation study. *Am J Audiol* 2017;26:369-72.
- Smits C, Watson CS, Kidd GR, Moore DR, Goverts ST. A comparison between the Dutch and American-English digits-in-noise (DIN) tests in normal-hearing listeners. *Int J Audiol* 2016;55:358-65.
- Dillon H, Beach EF, Seymour J, Carter L, Golding M. Development of Telscreen: a telephone-based speech-in-noise hearing screening test with a novel masking noise and scoring procedure. *Int J Audiol* 2016;55:463-71.
- Brown L, Mahomed-Asmail F, De Sousa KC, Swanepoel W. Performance and reliability of a smartphone digits-in-noise test in the sound field. *Am J Audiol* 2019;28:736-41.
- Smits C. Improving the efficiency of speech-in-noise hearing screening tests. *Ear Hear* 2017;38:e385-8.
- Potgieter JM, Swanepoel DW, Myburgh HC, Smits C. The South African English smartphone digits-in-noise hearing test: effect of age, hearing loss, and speaking competence. *Ear Hear* 2018;39:656-63.
- de Graaff F, Huysmans E, Merkus P, Theo Goverts S, Smits C. Assessment of speech recognition abilities in quiet and in noise: a comparison between self-administered home testing and testing in the clinic for adult cochlear implant users. *Int J Audiol* 2018;57:872-80.
- Koopmans WJ, Goverts ST, Smits C. Speech recognition abilities in normal-hearing children 4 to 12 years of age in stationary and interrupted noise. *Ear Hear* 2018;39:1091-103.
- Moore DR, Whiston H, Lough M, Marsden A, Dillon H, Munro KJ, et al. FreeHear: a new sound-field speech-in-babble hearing assessment tool. *Trends Hear* 2019;23:2331216519872378.
- Ebrahimi A, Mahdavi ME, Jalilvand H. Auditory recognition of Persian digits in presence of speech-spectrum noise and multi-talker babble: a validation study. *Aud Vestib Res* 2020;29:39-47.
- De Sousa KC, Swanepoel W, Moore DR, Myburgh HC, Smits C. Improving sensitivity of the digits-in-noise test using antiphasic stimuli. *Ear Hear* 2020;41:442-50.
- Giguère C, Lagacé J, Ellaham NN, Pichora-Fuller MK, Goy H, Bégin C, et al. Development of the Canadian digit triplet test in English and French. *J Acoust Soc Am* 2020;147:EL252-8.