OBJECTIVES: Decisions about which treatments to provide in publicly-funded healthcare systems are partly based on the preferences of the general public. Preferences can be obtained by describing a health state before and after a treatment in words (‘vignettes’). Vignettes can be lengthy and use unfamiliar terminology. It is also unclear whether the impact of hearing loss can be described using words alone. This research examines whether individuals can value health states related to hearing loss based on acoustic simulation of hearing loss, and assessed how reliable such valuations are.

METHODS: Single-sided deafness (SSD), a complete loss of hearing in one ear, was simulated in this study. Three talkers were positioned within a virtual acoustic environment to create simulated conversations in quiet and in noise. Normal-hearing participants expressed their preferences for health states based on these acoustic simulations alone or a combination of acoustic simulations and text using a time trade-off task across two sessions. Valuations were analysed using t-tests and interclass correlation coefficients (ICC).

RESULTS: Participants traded off years of life in all conditions. The mean valuations obtained using acoustic simulations were significantly lower than mean valuation for perfect health (healthy mean 0.92; acoustic simulation mean 0.69) implying that SSD impaired health. Valuations were also significantly lower when listening in noise (mean valuation 0.65) than in quiet (mean valuation quiet 0.72). The reliability of valuations based on acoustic simulations was low within the first testing session (ICC quiet 0.35, noise 0.39). However, once participants had become familiarised with the simulations, the valuations stabilized and were reliable across the two testing sessions (ICC quiet 0.78, noise 0.92).

CONCLUSIONS: Acoustic simulations may be feasible to use for describing hearing-related health states. Further research is required to understand how best to use them in combination with, or in place of, conventional vignettes.