**Appendix A: Previous Study Parameters and Results**

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|  | **Definition of hearing loss or hearing loss criteria** | **Comparison group** | **Age** | **Result** | **Musician type** |
| **Found increase risk of hearing loss** | | | | |  |
| Axelsson and Lindgren, 1981 | Threshold level greater than 20 dB on one ear and one frequency | Other study (Spoor, 1967) | 20 to 70 | 43% of musicians showed worse pure tone thresholds than would be expected with regard to age. | Classical |
| Emmerich, Rudel, & Richter, 2008 | Permanent threshold shifts larger than 15 dB SPL | None | 30 to 69 & 11 to 19 | More than 50% of the musicians had a hearing loss of 15dB(A) and more. | Classical |
| Jansen, Helleman, Dreschler, & de Laat, 2009 | Threshold level > 15 dB at any of the measured frequencies. Notches categorized as moderate or profound | ISO 7029 (2000) | 23 to 64 | Most musicians could be categorized as normal hearing, but their audiograms show notches at 6 kHz. (11% had moderate notches, 9% had profound notches). | Classical |
| Ostri, Eller, Dahlin, & Skylv, 1989 | Threshold level ≥ 20 dB at any threshold in one or both ears | ISO 7029 (1984) | 22 to 64 | 58% of the musicians had a hearing impairment. 50% of males and 13% of females showed typical audiogram with notched curve. | Classical |
| Kähäri, Zachau, Eklöf, Sandsjö & Möller, 2003 | 2 or more frequencies at ≥ 25 dB or 1 frequency at ≥ 30 dB in ≥ 1 ear | None | 26 to 51 | 49% of participants with hearing loss | Pop, rock, jazz |
| Halevi-Katz, Yaakobi, Putter-Katz, 2015 | Threshold shift at 3 to kHz | None | 20 to 64 | More music exposure was positively linked to higher hearing thresholds in the frequency range of 3-6 kHz | Pop, jazz, rock |
| **Found no increased risk of hearing loss** | | | | |  |
| Karlsson, Lundquist, & Olaussen, 1983 | Not indicated | Other study (Spoor, 1967) | 20 to 69 | Thresholds measured did not differ from the reference values from Spoor (1967) | Classical |
| Kähäri, Axelsson, Hellström, & Zachau, 2001a | Not indicated | ISO 7029 | 23 to 64 | HFPTA values in most ears distributed around the ISO 7029 median. | Classical |
| Kähäri, Axelsson, Hellström, & Zachau, 2001b | Not indicated | ISO 7029 | 35 to 64 | Most HFPTA values were distributed between the ISO median and within the 90th percentile. | Classical |
| Johnson, Sherman, Aldridge, & Lorraine, 1985 | Not indicated | Past study (Spoor, 1967) | 24 to 64 | Musicians did not appear to have hearing remarkably different from normal expectations. | Classical |
| Schmidt, Verschuure, & Brocaar, 1994 | Presence of dip (hearing loss in one or both ears ≥ 20 dB for 3,4 or 6 dB with the loss at the two nearest frequencies on both sides of the dip amounting to at least 5 dB less), high-frequency and extended high-frequency sensorineural hearing loss, or conductive hearing loss | Study control group (medical students) | 21 to 40 | Musicians: 16% with noise dips, 20% with high-frequency losses: 72% with extended high-frequency losses. Similar results found in control group. | Classical (n=39), light music (n=26), pop music (n=5), ethnic music (n=2), not provided (n=7) |
| Toppila, Koskinen, & Pyykkö, 2011 | Not indicated | ISO 1999 | 43 to 50 | The hearing of classical musicians corresponds to that of the non-noise exposed population according to ISO-1999:1990. | Classical |
| Gopal, Chesky, Beschoner, Nelson, Stewart, 2013 | Not indicated | Non-musician control group | 19 to 33 | The musician group showed a significant temporary threshold shift bilaterally at 4000 Hz after exposure, however, musician’s mean threshold levels pre-exposure were better than that of the control group. | Jazz |
| **Does not definitively conclude if there is an increased risk of hearing loss** | | | | |  |
| Westmore & Eversden, 1981 | Not indicated | None | 29 to 60 | 23 out of 68 ears showed changes consistent with noise-induced hearing loss, but most of those had only slight or early changes. 4 musicians had a hearing loss of more than 20 dB at 4KHz. | Classical |
| J. D. Royster, L. H. Royster, & Killion, 1991 | Presence of a dip or notch (threshold at 3, 4 and/or 6 kHz being 10 dB or worse than adjacent lower and high frequencies or a dip of 10 dB or more superimposed on a sloping high-frequency-emphasis loss. | ISO 7029 (1984) | 30 to 70 | Mean hearing threshold levels were only slightly worse than the ISO 7029 median, however 52.5% of musicians showed notched audiograms. | Classical |
| Phillips, Heinrich, & Mace, 2010 | Presence of a notch 15 dB in depth at 4000 or 6000 Hz relative to the best preceding threshold | None | 18 to 32 | 45% of participants had a notch in at least one ear, however susceptibility to noise-induced hearing loss cannot be ascribed solely to the instrument played and other exposures. | Classical |