

## Supplemental Material S2. Sample calculation of LENS-Q score.

Participant reports:

- Worked in construction for 2 years, 6 months outside of the military with exposure to loud noise "daily" and use of hearing protection "some of the time"
- Worked in military, job MOS 2W1X1, Aircraft Weapons for 5 years. 6 months, exposure to loud noise "daily" and use of hearing protection "always"
- Fired Artillery and small arms in military for 1 year, 6 months, exposure to loud noise several times a year, hearing protection use "always"
- Fired a rifle recreationally "several times a year" for 3 years, 2 months with hearing protection use "most of the time"
- Attended rock concerts "several times a month" for 10 years, 2 months, with hearing protection use "never"
- Used chainsaw "several times a year" for 6 months with hearing protection "most of the time"

### 1. Assign sound level of noise source based on publicly available measurements (Table 1)

*Nonmilitary occupational*

Construction: 94 dBA

*Military occupational*

MOS, Aircraft weapons rated "probable high exposure" on the Duty MOS Noise Exposure Listing: 96 dBA

Artillery: 165 SPL

Small arms: 159 SPL

*Nonoccupational*

Rifle: 138 dB SPL

Rock Concert: 104 dBA

Chainsaw: 104 dBA

### 2. Subtract hearing protection adjustment from sound level

Construction: hearing protection = "some of the time";  $94 - 10 = 84$  dBA

MOS: hearing protection = "always";  $96 - 15 = 81$  dBA

Artillery: hearing protection = "always";  $165 - 15 = 150$  SPL

Small arms: hearing protection = "always";  $159 - 15 = 144$  SPL

Rifle: hearing protection = "most of the time";  $138 - 10 = 128$  SPL

Attending rock concerts: hearing protection = "never";  $104 - 0 = 104$  dBA

Chainsaw: hearing protection = "most of the time";  $104 - 10 = 94$  dBA

### 3. Assign weight to adjusted sound level ( $10^{((\text{adjusted sound level} - 82) / 10)}$ )

Construction:  $84$  dBA = 2

MOS:  $81$  dBA = 1

Artillery:  $150$  dBA = 6309573

Small arms:  $144 = 1584893$

Rifle: 128 SPL = 39811

Rock Concert: 104 dBA = 158

Chainsaw: 94 dBA = 16

#### 4. Convert frequency of exposure to number of days

Construction: "daily" = 260 days

MOS: "daily" = 260 days

Artillery: "several times a year" = 3 days

Small arms: "several times a year" = 3 days

Rifle: "several times a year" = 3 days

Rock Concert: "several times a month" = 36 days

Chainsaw: "several times a year" = 3 days

#### 5. Change duration of years/months to number of years:

Construction: 2 years, 6 months = 2.5 years

MOS: 5 years, 6 months = 5.5 years

Artillery: 1 year, 6 months = 1.5 years

Small arms: 1 year, 6 months = 1.5 years

Rifle: 3 years, 2 months = 3.2 years

Rock Concert: 10 years, 2 months = 10.2 years

Chainsaw: 1 year

#### 6. Noise source score = $\text{Log}^{10}(\text{weighted sound level} \times \text{frequency} \times \text{duration})$

*Non-military occupational*

Construction score:  $\text{Log}^{10}(2 \times 260 \text{ days} \times 2.5 \text{ years}) = \mathbf{2.8}$

*Military occupational*

MOS, Aircraft weapons score:  $\text{Log}^{10}(1 \times 260 \text{ days} \times 5.5 \text{ years}) = \mathbf{3.2}$

Artillery score:  $\text{Log}^{10}(6309573 \times 3 \text{ days} \times 1.5 \text{ years}) = \mathbf{7.5}$

Small arms score:  $\text{Log}^{10}(1584893 \times 3 \text{ days} \times 1.5 \text{ years}) = \mathbf{6.9}$

*Non-occupational*

Rifle Score:  $\text{Log}^{10}(39811 \times 3 \text{ days} \times 3.2 \text{ years}) = \mathbf{5.6}$

Rock Concert score:  $\text{Log}^{10}(158 \times 36 \text{ days} \times 10.2 \text{ years}) = \mathbf{4.8}$

Chain saw score:  $\text{Log}^{10}(16 \times 3 \text{ days} \times 1 \text{ year}) = \mathbf{1.7}$

#### 7. Compute index and total LENS-Q score:

*Nonmilitary occupational: 2.8*

*Military occupational: 17.6*

*Nonoccupational: 12.1*

*Total LENS-Q score: 2.8 + 17.6 + 12.1 = 32.5*