|  |  |
| --- | --- |
| SIR Category | Speech Intelligibility Rating scale |
| 5 | Connected speech is intelligible to all listeners. |
| 4 | Connected speech is intelligible to a listener who has little experience of a deaf person’s speech. The listener does not need to concentrate unduly |
| 3 | Connected speech is intelligible to a listener who concentrates and lip-reads within a known context |
| 2 | Connected speech is unintelligible. Intelligible speech is developing in single words when context and lip-reading cues are available |
| 1 | Pre-recognizable words in spoken language. |

**Table 1**: Speech intelligibility rating scale

|  |  |
| --- | --- |
| **Variable** | **Relative Importance** |
| SIRPre-implantation hearing levelsCommunication modeBKB pre-implantation speech scores ProgressionHearing aid use pre-implant GenderAge at implantation  | 26.911.69.244.351.471.020.610.36 |

**Table 2:** Relative importance of variables in the linear regression model for $y\_{BKB}^{\*}$.

|  |  |
| --- | --- |
| **Parameter Relating to Variable** | **p-value** |
| SIR 4SIR 5Pre-implantation hearing levelsCommunication mode (interpreter requested)BKB pre-implantation speech scoresProgression (progressive hearing loss)Gender (Female)Age at implantation Hearing aid use pre-implantation (Inconsistent/No hearing aid use) | 0.730.0010.0080.0310.0580.410.650.810.90 |

**Table 3:** Table of p-values for parameters in the linear regression model for regression model for $y\_{BKB}^{\*}$, which relate to variables in the experiment.

|  |  |
| --- | --- |
| **Variable** | **Relative Importance** |
| Communication modeHearing aid use pre-implantation Pre-implantation hearing levelsGender ProgressionAge at implantationCUNY pre-implantation speech scores SIR | 24.010.73.382.692.351.290.920.62 |

**Table 4:** Relative importance of variables in the linear regression model for $y\_{CUNY}^{+}$.

|  |  |
| --- | --- |
| **Parameter Relating to Variable** | **p-value** |
| Communication mode (interpreter requested)Hearing aid use pre-implantation (Inconsistent/No hearing aid use)Pre-implantation hearing levelsProgression (progressive hearing loss)Gender (Female)SIR 4SIR 5CUNY pre-implantation speech scores Age at implantation | 0.0180.220.310.330.370.860.830.910.91 |

**Table 5:** Table of p-values for parameters in the linear regression model for regression model for $y\_{CUNY}^{+}$, which relate to variables in the experiment.

|  |  |  |
| --- | --- | --- |
|  |  | Number of Patients |
| **Factor** | **Level** | **BKB** | **CUNY** |
| SIR | 345 | 13118 | 1394 |
| Progression | Non-progressiveProgressive | 2112 | 189 |
| Communication mode | No interpreter requestedInterpreter requested | 294 | 234 |
| Gender | MaleFemale | 1221 | 918 |
| Hearing aid use pre-implantation | Inconsistent/No hearing aid useConsistent hearing aid user | 528 | 423 |

**Table 6:** Table showing the number of patients for each level of the categorical variables.

|  |  |  |
| --- | --- | --- |
| **Power** | **2 Level** | **5 Level** |
| 0.50.750.80.850.90.95 | 91416182024 | 132326293442 |

**Table 7:** Table showing minimum number of patients required at each level for a 2 and 5 level factor assuming different powers (rounded to the nearest whole number).