**Appendix A**: Statistical power (\*) for the 0-5km, 0-10km, 0-15km, and 0-20km proximity areas.

\*The statistical power of a single site analysis for the 0-5km, 0-10km, 0-15km and 0-20km proximity areas was examined using Monte Carlo simulation. In a first step, the age, year and sex specific rates were multiplied with the annual populations to calculate the expected incidences under the null hypothesis. Relative risks under the alternative hypothesis were defined in line with the literature, i.e. relative risks of 1.1, 1.2, 1.5 and 2.0 to test excess risk of a rare disease. Multiplication with the chosen relative risk yielded the expected incidences under an alternative hypothesis. In a third step, incidences were drawn 10,000 times from the Poisson distribution based on the expected incidences under the alternative hypothesis. Then, the single-site Poisson regression model was fit and the significance was tested using a two-sided test at α=0.05. The table lists the percentages of times the null hypothesis was rejected. For example, for the site of Doel for the 0-20km proximity area there was a 21.4% probability to detect a relative risk of 1.2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Distance | Relative risk | Power | | | |
|  |  | Mol-Dessel | Doel | Fleurus | Tihange |
| 0 – 5 km | 1.1 | 0.047 | / | 0.068 | 0.052 |
|  | 1.2 | 0.082 | / | 0.075 | 0.058 |
|  | 1.5 | 0.164 | / | 0.129 | 0.119 |
|  | 2 | 0.343 | / | 0.258 | 0.237 |
| 0 – 10 km | 1.1 | 0.049 | 0.056 | 0.069 | 0.062 |
|  | 1.2 | 0.097 | 0.085 | 0.125 | 0.070 |
|  | 1.5 | 0.259 | 0.19 | 0.397 | 0.19 |
|  | 2 | 0.631 | 0.424 | 0.414 | 0.414 |
| 0 – 15 km | 1.1 | 0.066 | 0.060 | 0.068 | 0.062 |
|  | 1.2 | 0.128 | 0.096 | 0.156 | 0.088 |
|  | 1.5 | 0.326 | 0.238 | 0.470 | 0.236 |
|  | 2 | 0.736 | 0.574 | 0.924 | 0.582 |
| 0 – 20 km | 1.1 | 0.075 | 0.117 | 0.067 | 0.059 |
|  | 1.2 | 0.147 | 0.214 | 0.166 | 0.121 |
|  | 1.5 | 0.548 | 0.79 | 0.58 | 0.389 |
|  | 2 | 0.956 | 0.999 | 0.966 | 0.836 |