

Simulatie koren

- Model: AirCov2 v1.2
- Auteur: (10)(2e), RIVM
- Datum: 28-10-2020

Aannames model

- Direct gelijkelijke verdeling van de virusdeeltjes in aerosolen over de ruimte.
- Intacte fractie (kweekbare virussen) = 0.018 (vrij hoog)
- Infectieuze fractie (dosisrespons) = 0.054 (de meeste infectieuze van coronavirussen, waarvan dit bekend is)
- Eén uitscheider: 10^8 virusdeeltjes per ml mucus (8,5% kans)

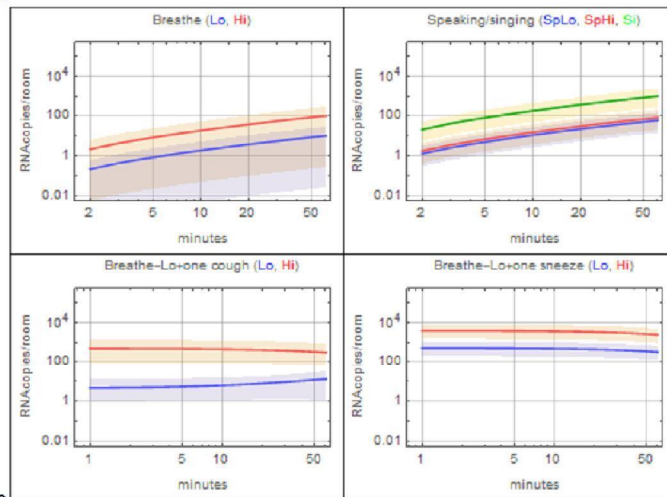
Scenario's

- Heerde: 14x14x2.6 m³; 14 personen; 1uur
- Alkmaar: 11x8x6 m³; 16 personen; 1uur
- Geen ventilatie; verversing 1 keer per uur; 20 keer per uur

Resultaten

- Groene grafiek is zingen; grafieken tonen continue toename door uitademen, spreken, zingen; eenmalige inbreng door een hoest en nies; afname door inademen, virusinactivatie en ventilatie.
- Beide ruimtes zijn ongeveer gelijk qua volume.
- Ongeveer 10% kans op blootstelling indien geen ventilatie; bijbehorende kans op infectie/ziekte ongeveer 0,5%.
- Nauwelijks kleinere kansen op blootstelling, infectie/ziekte indien de lucht in de ruimtes per uur geheel wordt ververst.
- Kansen zijn één orde in grootte kleiner bij 20 keer per uur de lucht geheel verversen.

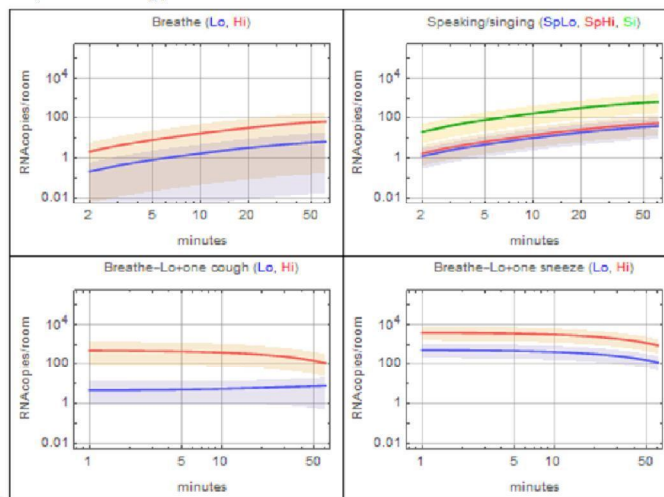
Heerde; geen



ventilatie

	Exposure probability				Infection risk			
	Mean	5%	50%	95%	Mean	5%	50%	95%
Breathe-Lo	0.11%	0%	0%	0%	0.0062%	0%	0%	0%
Breathe-Hi	0.92%	0%	0%	3.5%	0.061%	0%	0%	0.19%
Speak-Lo	0.66%	0%	0%	3.5%	0.036%	0%	0%	0.19%
Speak-Hi	0.91%	0%	0%	3.5%	0.05%	0%	0%	0.19%
Singing	10%	1.8%	8.6%	25%	0.6%	0.097%	0.48%	1.5%
Cough-Lo	0.19%	0%	0%	1.8%	0.01%	0%	0%	0.097%
Cough-Hi	7.4%	0%	5.3%	21%	0.43%	0%	0.29%	1.3%
Sneeze-Lo	8.1%	1.8%	6.9%	18%	0.46%	0.097%	0.39%	1.1%
Sneeze-Hi	44%	19%	43%	73%	3.4%	1.2%	3%	6.8%

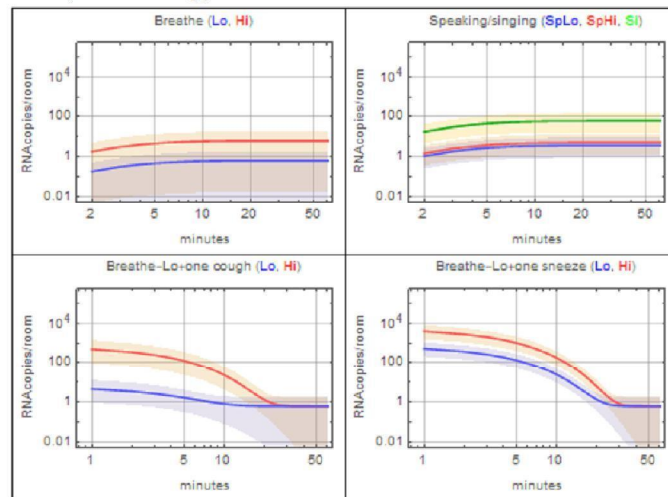
Heerde; 1 x verversing per



uur

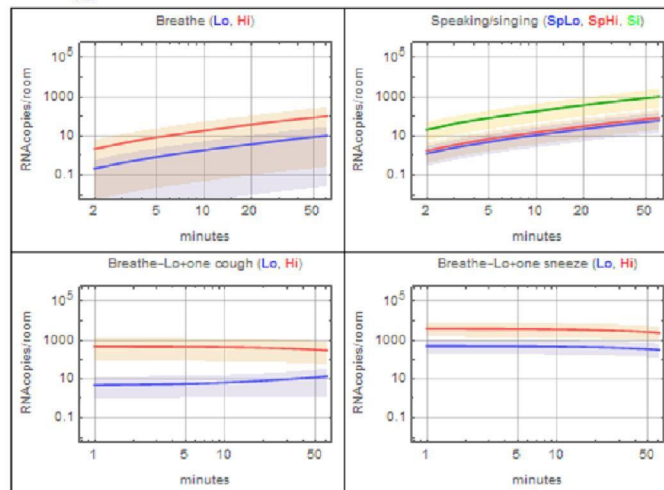
	Exposure probability				Infection risk			
	Mean	5%	50%	95%	Mean	5%	50%	95%
Breathe-Lo	0.085%	0%	0%	0%	0.0048%	0%	0%	0%
Breathe-Hi	0.7%	0%	0%	3.5%	0.045%	0%	0%	0.19%
Speak-Lo	0.5%	0%	0%	1.8%	0.027%	0%	0%	0.097%
Speak-Hi	0.68%	0%	0%	3.5%	0.037%	0%	0%	0.19%
Singing	7.8%	0%	6.9%	19%	0.45%	0%	0.39%	1.2%
Cough-Lo	0.15%	0%	0%	1.8%	0.008%	0%	0%	0.097%
Cough-Hi	5%	0%	3.5%	15%	0.28%	0%	0.19%	0.87%
Sneeze-Lo	5.4%	0%	5.3%	13%	0.3%	0%	0.29%	0.77%
Sneeze-Hi	33%	13%	31%	59%	2.2%	0.77%	2%	4.7%

Heerde; 20 x verversing per uur



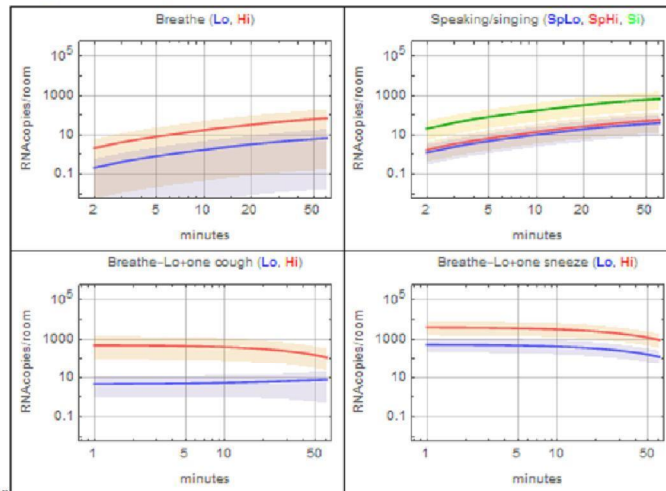
	Exposure probability				Infection risk			
	Mean	5%	50%	95%	Mean	5%	50%	95%
Breathe-Lo	0.0098%	0%	0%	0%	0.00053%	0%	0%	0%
Breathe-Hi	0.12%	0%	0%	0%	0.0067%	0%	0%	0%
Speak-Lo	0.072%	0%	0%	0%	0.0039%	0%	0%	0%
Speak-Hi	0.11%	0%	0%	1.8%	0.006%	0%	0%	0.097%
Singing	1.2%	0%	0%	5.3%	0.065%	0%	0%	0.29%
Cough-Lo	0.018%	0%	0%	0%	0.001%	0%	0%	0%
Cough-Hi	0.49%	0%	0%	1.8%	0.027%	0%	0%	0.097%
Sneeze-Lo	0.55%	0%	0%	1.8%	0.03%	0%	0%	0.097%
Sneeze-Hi	3.8%	0%	3.5%	10%	0.21%	0%	0.19%	0.58%

Alkmaar; geen ventilatie



	Exposure probability				Infection risk			
	Mean	5%	50%	95%	Mean	5%	50%	95%
Breathe-Lo	0.088%	0%	0%	0%	0.0049%	0%	0%	0%
Breathe-Hi	0.72%	0%	0%	3.5%	0.047%	0%	0%	0.19%
Speak-Lo	0.53%	0%	0%	1.8%	0.029%	0%	0%	0.097%
Speak-Hi	0.71%	0%	0%	3.5%	0.039%	0%	0%	0.19%
Singing	8%	0%	6.9%	21%	0.46%	0%	0.39%	1.3%
Cough-Lo	0.14%	0%	0%	1.8%	0.008%	0%	0%	0.097%
Cough-Hi	5.8%	0%	3.5%	16%	0.33%	0%	0.19%	0.97%
Sneeze-Lo	6.3%	0%	5.3%	15%	0.36%	0%	0.29%	0.87%
Sneeze-Hi	37%	15%	35%	64%	2.6%	0.87%	2.3%	5.4%

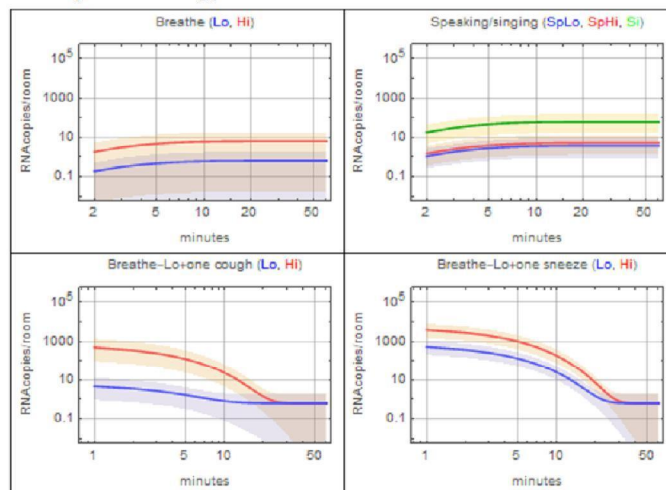
Alkmaar; 1 x verversing per



uur

	Exposure probability				Infection risk			
	Mean	5%	50%	95%	Mean	5%	50%	95%
Breathe-Lo	0.061%	0%	0%	0%	0.0034%	0%	0%	0%
Breathe-Hi	0.57%	0%	0%	1.8%	0.036%	0%	0%	0.097%
Speak-Lo	0.39%	0%	0%	1.8%	0.021%	0%	0%	0.097%
Speak-Hi	0.54%	0%	0%	1.8%	0.029%	0%	0%	0.097%
Singing	6.2%	0%	5.3%	16%	0.35%	0%	0.29%	0.97%
Cough-Lo	0.11%	0%	0%	0%	0.0059%	0%	0%	0%
Cough-Hi	3.9%	0%	3.5%	12%	0.22%	0%	0.19%	0.68%
Sneeze-Lo	4.3%	0%	3.5%	10%	0.24%	0%	0.19%	0.58%
Sneeze-Hi	27%	10%	25%	50%	1.8%	0.58%	1.5%	3.6%

Alkmaar; 20 x verversing per uur



	Exposure probability				Infection risk			
	Mean	5%	50%	95%	Mean	5%	50%	95%
Breathe-Lo	0.0062%	0%	0%	0%	0.00034%	0%	0%	0%
Breathe-Hi	0.1%	0%	0%	0%	0.0056%	0%	0%	0%
Speak-Lo	0.058%	0%	0%	0%	0.0032%	0%	0%	0%
Speak-Hi	0.079%	0%	0%	0%	0.0043%	0%	0%	0%
Singing	0.92%	0%	0%	3.5%	0.051%	0%	0%	0.19%
Cough-Lo	0.011%	0%	0%	0%	0.00061%	0%	0%	0%
Cough-Hi	0.38%	0%	0%	1.8%	0.021%	0%	0%	0.097%
Sneeze-Lo	0.43%	0%	0%	1.8%	0.023%	0%	0%	0.097%
Sneeze-Hi	3%	0%	1.8%	8.6%	0.17%	0%	0.097%	0.48%