

# Facemasks and COVID-19 case fatality rate

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## Abstract

Mask mandates have been a globally used epidemiologic intervention during the ongoing COVID-19 pandemic, above all based on the assumption of reduced infection rates. Although there is now much evidence for the latter, the effect of facemasks on the individual and its course of disease has remained controversial. While there are concepts suggesting a protective effect and a better outcome for the individual, public opinion has placed concepts with opposite outcomes in the vicinity of conspiracy theories.

However, here I show that counties with mask mandates in Kansas during the summer of 2020 had significantly higher case fatality rates compared to Kansas counties without mask mandates, with a risk ratio of 1.85 for death with COVID-19.

Even after adjusting for the number of ‘protected persons’, i.e. the number of persons who were *not* infected in the mask-mandated group compared to the no-mask group, the risk ratio remains highly significant at 1.52.

Over 95% of this effect can solely be attributed to COVID-19.

Why this happens and the possible connection between long-term effects associated with SARS-CoV-2 and facemasks are explained in theory herein by the ‘foegen effect’, which describes the deep reinhalation of pure virions that were caught in the facemasks as droplets.

## Manuscript: (v2)

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### Supplementary Appendix:

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Supplementary Appendix.pdf available at <https://authorea.com/users/391921/articles/505927-facemasks-and-covid-19-case-fatality-rate>

### Data and calculations sheet:

County Name	Mask	mCDR / 100.0	MM City as % of County	Pop-ulation	In-fected	av-er-age deaths	Pop-Adj mCDR	deaths			NoMM	MMC
								08/0808/1508/22-10/2210/2911/05				
Allen County	1	1333.98	2369	0	90	1	15.39	1	1	1		Allen County
Anderson County	0	1183.57	1858	0	86	0	14.56	0	0	0		Anderson County
Atchison County	1	933.24	16073	0	401	5.33	13.99	5	5	6		Atchison County
Barber County	0	1242.38	1427	0	27	0	8.61	0	0	0		Barber County
Barton County	0	1047.38	5779	0	547	3.67	42.26	4	4	3		Barton County
Bourbon County	1	1073.35	4534	0	207	1	14.55	1	1	1		Bourbon County
Brown County	0	1369.79	564	0	146	5.33	20.5	5	5	6		
Butler County	0	932.58	66911	0	1012	1.67	97.66	2	2	1		Butler County
Chase County	0	868.58	2648	0	79	2.33	3.6	1	3	3		Chase County
Chautauqua County	0	1384.63	250	0	19	0	7.04	0	0	0		
Cherokee County	0	1479.51	9939	0	531	7	46.17	7	7	7		
Cheyenne County	0	1430.12	657	0	88	5.33	5.95	5	5	6		
Clark County	0	1303.91	1994	0	16	2	4.07	0	3	3		Clark County
Clay County	0	1099.78	3002	0	42	0	13.77	0	0	0		Clay County
Cloud County	0	1422.78	786	0	67	0.33	19.56	1	0	0		
Coffey County	0	1185.98	179	0	72	1	15.18	1	1	1		Coffey County
Comanche County	0	1588.21	700	0	15	0	4.23	0	0	0		
Cowley County	0	1309.15	4908	0.35	313	8	71.52	8	8	8		
Crawford County	1	955.74	38818	0	914	11	34.6	9	11	13		Crawford County
Dallas County	0	1004.02	207	0	20	1	7.00	1	1	1		