The following are a compilation of studies regarding the wearing of face coverings.

[1] PDF of a study in Wuhan, China showing no asymptomatic spread, entitled Post-lockdown SARS-CoV-2 nucleic acid screening in nearly ten million residents of Wuhan, China which stated**, "*There were no positive tests amongst 1,174 close contacts of asymptomatic cases*."**

10 million asymptomatic spreac

www.nature.com/articles/s41467-020-19802-w

[2] PDF of a study in entitled Facemasks in the COVID-19 era: A health Hypothesis reviews 67 references and states that **"*Although, scientific evidence supporting facemasks' efficacy is lacking, adverse physiological, psychological and health effects are established...*"**
Note: This link to the study is not available due to retraction by the publisher for this externally peer reviewed study prior to publication.

Facemasks in covid era a hypothesis.pdf

www.ncbi.nlm.nih.gov/pmc/articles/PMC7680614/

[3] From the Centre for Evidence Based Medicine is an article with links to a PDF of a study in 2011 that states **"*The use of protective facemasks (PFMs) negatively impacts respiratory and dermal mechanisms of human thermoregulation through impairment of convection, evaporation and radiation processes. The relatively minor reported increases in core temperature directly attributable to the wearing of PFMs suggest that associated perceptions of increased body temperature may have a significant psychological component or that regional or global brain temperature changes are involved…*"**

Facecovering study thermoregulation me

www.cebm.net/covid-19/covid-19-masks-on-or-off

[4] A Study by BrJ Sports Med recently concluded ***"Cloth face masks led to a 14% reduction in exercise time and 29% decrease in VO2max, attributed to perceived discomfort associated with mask-wearing. Compared with no mask, participants reported feeling increasingly short of breath and claustrophobic at higher exercise intensities while wearing a cloth face mask. Coaches, trainers and athletes should consider modifying the frequency, intensity, time and type of exercise when wearing a cloth face mask."***
https://bjsm.bmj.com/content/early/2021/03/05/bjsports-2020-103758

[5] Below are studies that discuss the impact of oxygen levels during exercise. Increasing the resistance of breathing by putting on face cloths is equivalent to working at high altitudes. Seasoned athletes are meticulously monitored for effects related to altitude sickness. The American Academy of Family

Physicians discusses altitude sickness, its causes, and its effects at length. It explains that there are 3 varying levels of altitude sickness that can result in headache, dizziness, reduction in cognitive function, swelling of the lungs with fluid, swelling of the brain, and in severe cases a coma or death can occur. It also stresses that children are at a higher risk of altitude sickness as their developing bodies are not able to adjust as well as those of an adult. Children are less likely to recognize the symptoms of altitude sickness as well, making them more susceptible to an escalated issue compared to fully grown adults

https://www.sciencedirect.com/science/article/pii/S2095254620300399#:~:text=Prolonged%20or%20high%20intensity%20exercise,(2)%20accelerated%20muscle%20fatigue.&text=Exercise%2Dinduced%20increases%20in%20the,muscle%20adaptation%20to%20endurance%20training.

https://familydoctor.org/condition/high-altitude-illness/ https://www.theuiaa.org/uiaa/children-at-altitude-essential-advice/#:~:text=Although%20there%20are%20no%20conclusive,sleeping%20altitude%20of%20%3C2%2C500m.

https://www.nfpt.com/blog/understanding-vo2-max-and-the-altitude-challenge?fbclid=IwAR0ZDGL7OgFhAIzHsp09mdHd4G7EBL-uhukidhW9f8vEAkiToakqRCEbc8U#:~:text=VO2%20max%20decreases%20as,by%20approximately%208-11%25

[6] 50 peer-reviewed studies on face mask wearing and its effects.

1 T Jefferson, M Jones, et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. MedRxiv. 2020 Apr 7.

https://www.medrxiv.org/content/10.1101/2020.03.30.20047217v2

2 J Xiao, E Shiu, et al. Nonpharmaceutical measures for pandemic influenza in non-healthcare settings – personal protective and environmental measures. Centers for Disease Control. 26(5); 2020 May.

https://wwwnc.cdc.gov/eid/article/26/5/19-0994_article

3 J Brainard, N Jones, et al. Facemasks and similar barriers to prevent respiratory illness such as COVID19: A rapid systematic review. MedRxiv. 2020 Apr 1.

https://www.medrxiv.org/content/10.1101/2020.04.01.20049528v1.full.pdf

4 L Radonovich M Simberkoff, et al. N95 respirators vs medical masks for preventing influenza among health care personnel: a randomized clinic trial. JAMA. 2019 Sep 3. 322(9): 824-833.

https://jamanetwork.com/journals/jama/fullarticle/2749214

5 J Smith, C MacDougall. CMAJ. 2016 May 17. 188(8); 567-574.

https://www.cmaj.ca/content/188/8/567

6 F bin-Reza, V Lopez, et al. The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence. 2012 Jul; 6(4): 257-267.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5779801/

7 J Jacobs, S Ohde, et al. Use of surgical face masks to reduce the incidence of the common cold among health care workers in Japan: a randomized controlled trial. Am J Infect Control. 2009 Jun; 37(5): 417-419. https://pubmed.ncbi.nlm.nih.gov/19216002/

8 M Viola, B Peterson, et al. Face coverings, aerosol dispersion and mitigation of virus transmission risk.

https://arxiv.org/abs/2005.10720, https://arxiv.org/ftp/arxiv/papers/2005/2005.10720.pdf

9 S Grinshpun, H Haruta, et al. Performance of an N95 filtering facepiece particular respirator and a surgical mask during human breathing: two pathways for particle penetration. J Occup Env Hygiene. 2009; 6(10):593-603.

https://www.tandfonline.com/doi/pdf/10.1080/15459620903120086

10 H Jung, J Kim, et al. Comparison of filtration efficiency and pressure drop in anti-yellow sand masks, quarantine masks, medical masks, general masks, and handkerchiefs. Aerosol Air Qual Res. 2013 Jun. 14:991-1002. https://aaqr.org/articles/aaqr-13-06-oa-0201.pdf

11 C MacIntyre, H Seale, et al. A cluster randomized trial of cloth masks compared with medical masks in healthcare workers. BMJ Open. 2015; 5(4)

https://bmjopen.bmj.com/content/5/4/e006577.long

12 N95 masks explained. https://www.honeywell.com/en-us/newsroom/news/2020/03/n95-masks-explained

13 V Offeddu, C Yung, et al. Effectiveness of masks and respirators against infections in healthcare workers: A systematic review and meta-analysis. Clin Inf Dis. 65(11), 2017 Dec 1; 1934-1942.

https://academic.oup.com/cid/article/65/

14 C MacIntyre, Q Wang, et al. A cluster randomized clinical trial comparing fit-tested and non-fit-tested N95 respirators to medical masks to prevent respiratory virus infection in health care workers. Influenza J. 2010 Dec 3.

https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1750-2659.2011.00198.x?fbclid=IwAR3kRYVYDKb0aR-su9_me9_vY6a8KVR4HZ17J2A_80f_fXUABRQdhQlc8Wo

15 M Walker. Study casts doubt on N95 masks for the public. MedPage Today. 2020 May 20.

https://www.medpagetoday.com/infectiousdisease/publichealth/86601

16 C MacIntyre, Q Wang, et al. A cluster randomized clinical trial comparing fit-tested and non-fit-tested N95 respirators to medical masks to prevent respiratory virus infection in health care workers. Influenza J. 2010 Dec 3.

https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1750-2659.2011.00198.x?fbclid=IwAR3kRYVYDKb0aR-su9_me9_vY6a8KVR4HZ17J2A_80f_fXUABRQdhQlc8Wo

17 N Shimasaki, A Okaue, et al. Comparison of the filter efficiency of medical nonwoven fabrics against three different microbe aerosols. Biocontrol Sci. 2018; 23(2). 61-69.

https://www.jstage.jst.go.

jp/article/bio/23/2/23_61/_pdf/-char/en

18 T Tunevall. Postoperative wound infections and surgical face masks: A controlled study. World J Surg. 1991 May; 15: 383-387.

https://link.springer.com/article/10.1007%2FBF01658736

19 N Orr. Is a mask necessary in the operating theatre? Ann Royal Coll Surg Eng 1981: 63: 390-392. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2493952/pdf/annrcse01509-0009.pdf

20 N Mitchell, S Hunt. Surgical face masks in modern operating rooms – a costly and unnecessary ritual? J Hosp Infection. 18(3); 1991 Jul 1. 239-242.

https://www.journalofhospitalinfection.com/article/0195-6701(91)90148-2/pdf

21 C DaZhou, P Sivathondan, et al. Unmasking the surgeons: the evidence base behind the use of facemasks in surgery. JR Soc Med. 2015 Jun; 108(6): 223-228.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4480558/

22 L Brosseau, M Sietsema. Commentary: Masks for all for Covid-19 not based on sound data. U Minn Ctr Inf Dis Res Pol. 2020 Apr 1.

https://www.cidrap.umn.edu/news-perspective/2020/04/commentary-masks-all-covid-19-not-based-sound-data

23 N Leung, D Chu, et al. Respiratory virus shedding in exhaled breath and efficacy of face masks Nature Research. 2020 Mar 7. 26,676-680 (2020).

https://www.researchsquare.com/article/rs-16836/v1

24 S Rengasamy, B Eimer, et al. Simple respiratory protection – evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles. Ann Occup Hyg. 2010 Oct; 54(7): 789-798.

https://academic.oup.com/annweh/article/54/7/789/202744

25 S Bae, M Kim, et al. Effectiveness of surgical and cotton masks in blocking SARS-CoV-2: A controlled comparison in 4 patients. Ann Int Med. 2020 Apr 6.

https://www.acpjournals.org/doi/10.7326/M20-1342

26 S Rengasamy, B Eimer, et al. Simple respiratory protection – evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles. Ann Occup Hyg. 2010 Oct; 54(7): 789-798.

https://academic.oup.com/annweh/article/54/7/789/202744

27 C MacIntyre, H Seale, et al. A cluster randomized trial of cloth masks compared with medical masks in healthcare workers. BMJ Open. 2015; 5(4)

https://bmjopen.bmj.com/content/5/4/e006577.long

28 W Kellogg. An experimental study of the efficacy of gauze face masks. Am J Pub Health. 1920. 34-42.

https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.10.1.34

29 M Klompas, C Morris, et al. Universal masking in hospitals in the Covid-19 era. N Eng J Med. 2020; 382 e63. https://www.nejm.org/doi/full/10.1056/NEJMp2006372

30 E Person, C Lemercier et al. Effect of a surgical mask on six minute walking distance. Rev Mal Respir. 2018 Mar; 35(3):264-268.

https://pubmed.ncbi.nlm.nih.gov/29395560/

31 B Chandrasekaran, S Fernandes. Exercise with facemask; are we handling a devil's sword – a physiological hypothesis. Med Hypothese. 2020 Jun 22. 144:110002.

https://pubmed.ncbi.nlm.nih.gov/32590322/

32 P Shuang Ye Tong, A Sugam Kale, et al. Respiratory consequences of N95-type mask usage in pregnant healthcare workers – A controlled clinical study. Antimicrob Resist Infect Control. 2015 Nov 16; 4:48.

https://pubmed.ncbi.nlm.nih.gov/26579222/

33 T Kao, K Huang, et al. The physiological impact of wearing an N95 mask during hemodialysis as a precaution against SARS in patients with end-stage renal disease. J Formos Med Assoc. 2004 Aug; 103(8):624-628.

https://pubmed.ncbi.nlm.nih.gov/15340662/

34 F Blachere, W Lindsley et al. Assessment of influenza virus exposure and recovery from contaminated surgical masks and N95 respirators. J Viro Methods. 2018 Oct; 260:98-106.

https://pubmed.ncbi.nlm.nih.gov/30029810/

36 F Blachere, W Lindsley et al. Assessment of influenza virus exposure and recovery from contaminated surgical masks and N95 respirators. J Viro Methods. 2018 Oct; 260:98-106.

https://pubmed.ncbi.nlm.nih.gov/30029810/

37 A Chughtai, S Stelzer-Braid, et al. Contamination by respiratory viruses on our surface of medical masks used by hospital healthcare workers.

BMC Infect Dis. 2019 Jun 3; 19(1): 491.

https://pubmed.ncbi.nlm.nih.gov/31159777/

38 L Zhiqing, C Yongyun, et al. J Orthop Translat. 2018 Jun 27; 14:57-62.

https://pubmed.ncbi.nlm.nih.gov/30035033/

39 C MacIntyre, H Seale, et al. A cluster randomized trial of cloth masks compared with medical masks in healthcare workers. BMJ Open. 2015; 5(4) https://bmjopen.bmj.com/content/5/4/e006577

40 A Beder, U Buyukkocak, et al. Preliminary report on surgical mask induced deoxygenation during major surgery. Neurocirugia. 2008; 19: 121-126.

http://scielo.isciii.es/pdf/neuro/v19n2/3.pdf

41 D Lukashev, B Klebanov, et al. Cutting edge: Hypoxia-inducible factor 1-alpha and its activation-inducible short isoform negatively regulate functions of CD4+ and CD8+ T lymphocytes. J Immunol. 2006 Oct 15; 177(8) 4962-4965.

https://www.jimmunol.org/content/177/8/4962

42 A Sant, A McMichael. Revealing the role of CD4+ T-cells in viral immunity. J Exper Med. 2012 Jun 30; 209(8):1391-1395.

https://europepmc.org/article/PMC/3420330

43. Belgrave DC, Buchan I, Bishop C, Lowe L, Simpson A, Custovic A. Trajectories of lung function during childhood. Am J Respir Crit Care Med. 2014;189(9):1101-1109. doi:10.1164/rccm.201309-1700OC

44. Cortez Pimentel, J, Avila, R et al. Respiratory disease caused by synthetic fibers: a new occupational disease. Thorax. 1975. 30 (204): 205-19.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC470268/pdf/thorax00140-0084.pdf

45. Fadare, O, Okoffo, E Covid-19 face masks: A potential source of microplastic fibers in the environment. Sci Total Environ. Oct 1 2020. 737:140279. doi: 10.1016/j.scitotenv.2020.140279
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7297173/

46. Grossard C, Chaby L, Hun S, et al. Children Facial Expression Production: Influence of Age, Gender, Emotion Subtype, Elicitation Condition and Culture. Front Psychol. 2018;9:446. Published 2018 Apr 4. doi:10.3389/fpsyg.2018.00446 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5894457/#!po=0.54347

47. Holmer, I, Kuklane, K et al. Minute volumes and inspiratory flow rates during exhaustive treadmill walking using respirators. Ann Occup Hygiene. 51 (3): 327-335. Apr 2007. https://doi.org/10.1093/annhyg/mem004 https://academic.oup.com/annweh/article/51/3/327/139423

48. Lai P, Christiani, D. Long-term respiratory health effects in textile workers. Curr Opin Pulm Med. Mar 2013. 19 (2): 152-157. doi: 10.1097/MCP.0b013e32835cee9a https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3725301/

49. Liu, Z, Yu, D, et al. Understanding the factors involved in determining the bioburdens of surgical masks. Ann Trans Med. Dec 2019. 7 (23). http://atm.amegroups.com/article/view/32465/html

50. Sharma G, Goodwin J. Effect of aging on respiratory system physiology and immunology. Clin Interv Aging. 2006;1(3):253-260. doi:10.2147/ciia.2006.1.3.253 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2695176/