During last month's meeting, a resident asked for evidence of the ineffectiveness of masks for virus/infection control. I am sharing these 47 studies for anyone who would like more information. She also asked for studies that proved their efficacy, and as you research, you will find that the majority of these studies are mechanistic models, anecdotal stories, and manipulated data. Essentially "narrative science". When it comes to the safety of our children, there should be no question on the safety of the decisions that are being made. If there are questions, as there are with this issue, the only relief that is acceptable is PARENTAL CHOICE.

Various face mask studies prove their ineffectiveness

1. Surgical mask / cloth face mask studies
Community and Close Contact Exposures Associated with COVID-19 Among Symptomatic Adults ≥18 Years in 11 Outpatient Health Care Facilities — United States, July 2020
The US Centre for Disease Control performed a study which showed that 85 percent of those who contracted Covid-19 during July 2020 were mask wearers. Just 3.9 percent of the study participants never wore a mask.
Original: https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6936a5-H.pdf

*These numbers are reported accurately, but the implication that this means masks are ineffective is not warranted. The self-reported mask-wearing numbers cannot be taken at face value. For example, among infected individuals, 41% reported having been to a restaurant, so it cannot also be that 71% "always" wore masks in potential exposure settings. In addition, 21% of infected individuals reported close contact with a family member known to have covid-19, another circumstance in which mask-wearing "always" seems improbable. Not only do the authors not draw any conclusions about mask wearing, they say explicitly, "**Exposures and activities where mask use…[is] difficult to maintain…might be important risk factors for acquiring COVID-19.**"*

2. Facial protection for healthcare workers during pandemics: a scoping review
This study used 5462 peer-reviewed articles and 41 grey literature records. "Conclusion: The COVID-19 pandemic has led to critical shortages of medical-grade PPE. Alternative forms of facial protection offer inferior protection. More robust evidence is required on different types of medical-grade facial protection. As research on COVID-19 advances, investigators should continue to examine the impact on alternatives of medical-grade facial protection"

Study Article: https://pubmed.ncbi.nlm.nih.gov/32371574/

Three problems: (1) This summary grossly overstates the amount of literature upon which the study was based. The authors retrieved 5462 peer-reviewed articles and 41 grey literature records, but only 48 articles and 19 grey literature records were included in the study. It appears that whoever wrote this summary either does not understand how literature reviews are done or intentionally quoted misleading numbers. (2) The study focused only on healthcare workers in healthcare settings with limited availability of PPE, so it has little relevance to the current debate about public wearing of masks. (3) That some alternatives to medical-grade masks offer inferior *protection does not mean those alternatives offer* no *protection. To claim a mask is ineffective requires showing it offers no benefit* relative to no mask.

3. Physical interventions to interrupt or reduce the spread of respiratory viruses
"There is moderate certainty evidence that wearing a mask probably makes little or no difference to the outcome of laboratory-confirmed influenza compared to not wearing a mask"
Study article: https://pubmed.ncbi.nlm.nih.gov/33215698/

This review does not include any covid-19 studies. The conclusion as stated by the authors was, "The high risk of bias in the trials, variation in outcome measurement, and relatively low compliance with the interventions during the studies hamper drawing firm conclusions and generalising the findings to the current COVID-19 pandemic."

4. Disposable surgical face masks for preventing surgical wound infection in clean surgery
"We included three trials, involving a total of 2106 participants. There was no statistically significant difference in infection rates between the masked and unmasked group in any of the trials"
Study article: https://pubmed.ncbi.nlm.nih.gov/27115326/

*The conclusion as stated by the authors (emphasis added) is, "**From the limited results it is unclear** whether the wearing of surgical face masks by members of the surgical team has any impact on surgical wound infection rates for patients undergoing clean surgery." This is not especially surprising to me. First, I would expect most members of surgical teams to be in good health (and therefore unlikely to transmit infections) when performing surgery. Second, there are other routes of exposure to infections (e.g., improperly*

sterilized equipment, improper sterile procedure), so it is not clear to me how significant a contributor airborne droplets and aerosols might be to post-surgical infections. This has very little relevance to mask wearing by the public to control covid-19 transmission.

5. Disposable surgical face masks: a systematic review
Two randomized controlled trials were included involving a total of 1453 patients. In a small trial there was a trend towards masks being associated with fewer infections, whereas in a large trial there was no difference in infection rates between the masked and unmasked group.
Study article: https://pubmed.ncbi.nlm.nih.gov/16295987/

This review was updated and extended in article #4 above. Including it twice doesn't make the results more compelling.

6. Evaluating the efficacy of cloth facemasks in reducing particulate matter exposure
"Our results suggest that cloth masks are only marginally beneficial in protecting individuals from particles<2.5 μm"
Study article: https://pubmed.ncbi.nlm.nih.gov/27531371/

According to the abstract, this study tested "four types of masks…commonly worn in the developing world" against polystyrene latex particles and lab-generated whole diesel particles. This does not seem very relevant.

7. Face seal leakage of half masks and surgical masks
"The filtration efficiency of the filter materials was good, over 95%, for particles above 5 microns in diameter but great variation existed for smaller particles. Coronavirus is 0.125 microns. Therefore, these masks wouldn't protect you from the virus"
Study article: https://pubmed.ncbi.nlm.nih.gov/4014006/

Whoever wrote this summary either does not understand or chooses to not mention that the coronavirus is not transmitted as an individual virus particle. Instead, it is transmitted in much larger droplets and aerosols, so this comparison of virus size and mask filtration properties is meaningless.

8. Comparison of the Filter Efficiency of Medical Nonwoven Fabrics against Three Different Microbe Aerosols
"The filter efficiencies against influenza virus particles were the lowest"

"We conclude that the filter efficiency test using the phi-X174 phage aerosol may overestimate the protective performance of nonwoven fabrics with filter structure compared to that against real pathogens such as the influenza virus"
Study article: https://pubmed.ncbi.nlm.nih.gov/29910210/

The study examined filtration materials – not intact masks – using mechanically generated aerosols. Since Ms. Nestor is dismissive of "mechanistic models" in studies that support *mask wearing, it is not clear why she finds this study useful.*

9. Aerosol penetration through surgical masks
"Although surgical mask media may be adequate to remove bacteria exhaled or expelled by health care workers, they may not be sufficient to remove the submicrometer-size aerosols containing pathogens"
Study article: https://pubmed.ncbi.nlm.nih.gov/1524265/

Since there is no mention of the size of the aerosols tested, there is not enough information in the Abstract to judge the significance of this article. Since Ms. Nestor is dismissive of "mechanistic models" in studies that support mask wearing, it is not clear why she finds this study useful. [Full text not available.]

10. Particle removal from air by face masks made from Sterilization Wraps: Effectiveness and Reusability
"We found that 60 GSM face mask had particle capture efficiency of 94% for total particles greater than 0.3 microns"
The virus is 0.125 microns.
Study article: https://pubmed.ncbi.nlm.nih.gov/33052962/

Whoever wrote this summary either does not understand or chooses to not mention that the coronavirus is not transmitted as an individual virus particle. Instead, it is transmitted in much larger droplets and aerosols, so this comparison of virus size and mask filtration properties is meaningless.

11. A New Method for Testing Filtration Efficiency of Mask Materials Under Sneeze-like Pressure
This study states that "alternatives" like silk and gauze could possibly be good options in the pandemic. It is done on starch particles.
It does not state how big they are, but they can still get through the material and research points out that starch particles are much bigger than most viruses.

Study article: https://pubmed.ncbi.nlm.nih.gov/32503823/

*Let's let the authors state their conclusion (emphasis added): "**Common mask materials can potentially provide protection against respiratory droplet transmission.**" The study was conducted by placing solutions on samples of the filtration materials – not intact masks – and spinning them in a centrifuge. Since Ms. Nestor is dismissive of "mechanistic models" in studies that support mask wearing, it is not clear why she finds this study useful.*

12. Protecting staff against airborne viral particles: in vivo efficiency of laser masks
"The laser mask provided significantly less protection than the FFP2 respirator (P=0.02), and only marginally more protection than the surgical mask. The continued use of laser masks for respiratory protection is questionable. Taping masks to the face only provided a small improvement in protection"
Study article: https://pubmed.ncbi.nlm.nih.gov/16920222/

"[S]ignificantly less protection than the…respirator" is not the same as "no protection". To claim a mask is ineffective requires showing it offers no benefit relative to no mas*k. [Full text not available.]*

13. Quantitative Method for Comparative Assessment of Particle Removal Efficiency of Fabric Masks as Alternatives to Standard Surgical Masks for PPE
"Worn as designed, both commercial surgical masks and cloth masks had widely varying effectiveness (53 – 75 percent and 28 – 91 percent particle removal efficiency, respectively)". Different brands, different results and only when they applied "nylon layers" did the "efficiency" improve. Synthetic fibers do not breathe, so this would inevitably affect your breathing.
Study article: https://pubmed.ncbi.nlm.nih.gov/32838296/

Although efficacy may have varied widely, it seems all the tested masks showed substantial particle removal. As for the nylon layer, the authors included tests with overlays of nylon stocking material to improve the fit of the masks, not as an additional filtration barrier. Nylon stocking material would obviously not "inevitably affect your breathing". ***Did whoever prepared this summary even read the paper?***

14. The efficacy of standard surgical face masks: an investigation using "tracer particles"
"Since the microspheres were not identified on the exterior of these face masks, they must have escaped around the mask edges and found their way into the wound". Human albumin cells, aka aborted fetal tissue, are much larger than the virus and still escaped the mask.
Study article: https://pubmed.ncbi.nlm.nih.gov/7379387/

Someone doesn't understand biology very well. *Albumin is a protein, not a cell. The study used microspheres of albumin. Albumin is* not *also known as "aborted fetal tissue", at least not by anyone who knows what they're talking about. This study was designed to investigate bacterial contamination during surgery, so it has very little relevance to mask wearing by the public to control covid-19 transmission.*

15. Testing the efficacy of homemade masks: would they protect in an influenza pandemic?
"Our findings suggest that a homemade mask should only be considered as a last resort to prevent droplet transmission from infected individuals" so why would someone suggest you make your own when they are not effective?
Study article: https://pubmed.ncbi.nlm.nih.gov/24229526/

The full conclusion by the authors answers the question of why one would make a homemade mask (emphasis added): "Our findings suggest that a homemade mask should only be considered as a last resort to prevent droplet transmission from infected individuals, ***but it would be better than no protection****." Why was that last clause omitted from the summary above? Furthermore, the authors state (emphasis added), "****Both [homemade and surgical] masks significantly reduced the number of microorganisms expelled*** *by volunteers, although the surgical mask was 3 times more effective in blocking transmission than the homemade mask." Odd that this was omitted from the summary, too.*

16. Using half-facepiece respirators for H1N1
"Increasing the filtration level of a particle respirator does not increase the respirator's ability to reduce a user's exposure to contaminants"
Study article: https://pubmed.ncbi.nlm.nih.gov/19927872/

This publication is "a trade/business magazine" (their words), not a proper scientific journal. There is not enough information in the Abstract to judge the significance of this article. [Full text not available.]

17. Why Masks Don't Work Against COVID-19
Article showing studies proving masks do not work for coronavirus or the flu.
Article: https://www.citizensforfreespeech.org/why_masks_don_t_work_against_covid_19?fbclid=IwAR0Qviyvt6BObOg aMij03Cj0fgTcm_gm5jhXcMkO8GcH3Kur-bwib0o8rf8

This is not a "study", this is a unreviewed blog post that has no business being listed among legitimate scientific studies.

18. Masks Don't Work: A Review of Science Relevant to COVID-19 Social Policy
Article showing studies proving mask protection is negligible for coronavirus, flu etc.
Article: https://www.rcreader.com/commentary/masks-dont-work-covid-a-review-of-science-relevant-to-covide- 19-social-policy?fbclid=IwAR0Qviyvt6BObOgaMij03Cj0fgTcm_gm5jhXcMkO8GcH3Kur-bwib0o8rf8

This is essentially identical to the blog post in article #17 above. ***It is still not a "study", and it still has no business being listed among legitimate scientific studies.*** *Including it twice does not make the results more compelling.*

19. Face masks to prevent transmission of influenza virus: a systematic review
There is less data to support the use of face masks or respirators to prevent becoming infected.
Study article: https://pubmed.ncbi.nlm.nih.gov/20092668/

*The sentence in the abstract before the one mentioned in the summary is this (emphasis added): "****There is some evidence to support the wearing of masks*** *or respirators during illness* ***to protect others****, and* ***public health emphasis on mask wearing*** *during illness* ***may help to reduce influenza virus transmission****." Odd that this sentence was omitted from the summary. And even if there is* less *data to support the use of masks to prevent becoming infected, that does not mean there is* no *data.*

20. “Exercise with facemask; Are we handling a devil’s sword?” – A physiological hypothesis
No evidence to suggest that wearing a mask during exercise offers any benefit from the droplet transfer from the virus.
“Exercising with facemasks may reduce available Oxygen and increase air trapping preventing substantial carbon dioxide exchange. The hypercapnic hypoxia may potentially increase acidic environment, cardiac overload, anaerobic metabolism and renal overload, which may substantially aggravate the underlying pathology of established chronic diseases”
Study article: https://pubmed.ncbi.nlm.nih.gov/32590322/

*This is, as the title indicates, simply a hypothesis with **no** supporting data. In fact, one of the references cited by the authors in support of their hypothesis reached the following conclusion (emphasis added): “In healthy healthcare workers, **[the N95 filtering facepiece respirator] did not impose any important physiological burden during 1 hour of use, at realistic clinical work rates**.”*

21. Use of face masks by non-scrubbed operating room staff: a randomized controlled trial
Surgical site infection rates did not increase when non-scrubbed personnel did not wear face masks.
2010 Study article: https://pubmed.ncbi.nlm.nih.gov/20575920/

This does not in any way provide evidence that masks are ineffective. Surgical site infection via airborne disease vectors from non-scrubbed personnel may just be a miniscule risk compared to other potential routes of surgical site infections due to, for example, well-designed ventilation as described in article #22. [Full text not available.]

22. Surgical face masks in modern operating rooms – a costly and unnecessary ritual?
When the wearing of face masks by non-scrubbed staff working in an operating room with forced ventilation seems to be unnecessary.
Study article: https://pubmed.ncbi.nlm.nih.gov/1680906/

This study does not in any way provide evidence that masks are ineffective. The Abstract says explicitly forced ventilation makes the wearing of face masks by non-scrubbed staff “unnecessary”, so there is no basis to judge whether masks are effective or ineffective. [Full text not available.]

23. Masks: a ward investigation and review of the literature
Wearing multi-layer operating room masks for every visit had no effect on nose and throat carriage rates.
Study article: https://pubmed.ncbi.nlm.nih.gov/2873176/

There is not enough information in the Abstract to judge the significance of this article. [Full text not available.]

24. Aerosol penetration and leakage characteristics of masks used in the health care industry
The protection provided by surgical masks may be insufficient in environments containing potentially hazardous sub micrometer-sized aerosols.
"Conclusion: We conclude that the protection provided by surgical masks may be insufficient in environments containing potentially hazardous sub micrometer-sized aerosols"
Study article: https://pubmed.ncbi.nlm.nih.gov/8239046/

The Abstract does not indicate the size of the sub-micrometer particles tested, so it is at least possible they were smaller than SARS-CoV-2 aerosol particles. In any case, "ineffective" is not the same as "of no use". To claim a mask is ineffective requires showing it offers no benefit relative to no mask. *[Full text not available.]*

25. Masks for prevention of viral respiratory infections among health care workers and the public: PEER umbrella systematic review
Meta analysis review that says there is limited evidence to suggest that the use of masks may reduce the risk of spreading viral respiratory infections.
Study article: https://pubmed.ncbi.nlm.nih.gov/32675098/

If only you had kept reading (emphasis added): "This systematic review found limited evidence that the use of masks might reduce the risk of viral respiratory infections. ***In the community setting, a possible reduced risk of influenzalike illness was found among mask users.****" To be more specific (emphasis added), "****in the 2 trials that most closely aligned with mask use in real-life community settings, there was a significant risk reduction*** *in influenzalike illness (risk ratio [RR] = 0.83; 95% CI 0.69 to 0.99)" In any case, "limited evidence of effectiveness" is not the same as "evidence of ineffectiveness".*

26. Modeling of the Transmission of Coronaviruses, Measles Virus, Influenza Virus, *Mycobacterium tuberculosis*, and *Legionella pneumophila* in Dental Clinics
Evidence to suggest that transmission probability is strongly driven by indoor air quality, followed by patient effectiveness and the least by respiratory protection via mask use.
This could explain “second waves” and has nothing to do with hand shaking, or not wearing a mask.
Study article: https://pubmed.ncbi.nlm.nih.gov/32614681/

I spent about 20 years developing mathematical models for the pharmaceutical industry, and I am not impressed by this study. Two immediate problems are (1) no evidence of any sort of model calibration or validation to confirm that the model could reproduce observed results under known conditions and (2) arbitrary assumptions about the uncertainties in the model parameter values (±75%), which makes the conclusions of the sensitivity analysis meaningless. Since Ms. Nestor is dismissive of “mechanistic models” in studies that support mask wearing, it is not clear why she finds this study useful. I certainly do not.

And what is this nonsense about “second waves” and hand-shaking? It certainly did not come from the article, and it is grossly inappropriate to imply that it did. *I actually have a pretty good idea where this nonsense came from – see articles #17 and #18 in this list.*

27. Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings-Personal Protective and Environmental Measures
The use of face masks, either by infected or non-infected persons, does not have a significant effect on influenza transmission.
Study article: https://pubmed.ncbi.nlm.nih.gov/32027586/

This study and others like it focus on one type of transmission – infection of the individual wearing or not wearing a mask. However, there is also the issue of transmission from these individuals to others, and these sorts of studies do not address the possibility that widespread mask wearing can slow community transmission.

28. Effectiveness of personal protective measures in reducing pandemic influenza transmission: A systematic review and meta-analysis
Meta analyses suggest that regular hand hygiene provided a significant protective effect over face masks and their insignificant protection.

Study article: https://pubmed.ncbi.nlm.nih.gov/28487207/

It is not correct to say that "regular hand hygiene provided a significant protective effect ***over*** *face masks" (emphasis added) as they were not being compared to each other. The non-significant (which is different from "insignificant") protective effect of face masks was based on three case-control studies, but the authors point out that the inclusion of a randomized controlled trial and one cohort study resulted in a significant protective effect of face masks. Despite the reported non-significant protective effect of face masks, the authors conclude (emphasis added), "[Regular hand hygiene and* ***facemask use****] **may…be effective at limiting transmission during future pandemics**."*

29. Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta- analysis
Use of n95 respirators compared to surgical masks is not associated with a lower risk of laboratory confirmed influenza.
Study article: https://pubmed.ncbi.nlm.nih.gov/32167245/

It's not clear why this study is included as it has nothing to say about whether masks are effective for preventing influenza transmission. The comparison reported is between N95 masks and surgical masks. To claim a mask is ineffective requires showing it offers no benefit relative to no mask.

30. Adolescents' face mask usage and contact transmission in novel Coronavirus
Face mask surfaces can become contamination sources. People are storing them in their pockets, bags, putting them on tables, people are reusing them etc.
Study article: https://pubmed.ncbi.nlm.nih.gov/32582579/

This article illustrates the possibility of contact transmission from contaminated mask surfaces, but it provides no evidence that such transmission actually occurs. It is now widely accepted that contact transmission is minimal in comparison to airborne transmission.

31. Visualizing the effectiveness of face masks in obstructing respiratory jets
Loosely folded face masks and "bandana style" face coverings provide minimum stopping capability for the smallest aerosolized droplets.
This applies to anyone who folds or shoves a mask into their pockets or bag. It also applies to cloth and homemade cloth masks.

Study article: https://pubmed.ncbi.nlm.nih.gov/32624649/

I'm surprised this study is included. While the summary above focuses on the inadequacy of bandanas, the article itself clearly shows that anything is better than nothing (Table I – Average jet distance [of emulated heavy cough]: Uncovered = ~8 ft, Bandana = ~3 ft 7 in, Folded handkerchief =1 ft 3 in, Stitched mask = 2.5 in, Commercial mask = 8 in). How does this support the case that masks are ineffective? Answer: It doesn't.

And what is this nonsense about this applying "to anyone who folds or shoves a mask into their pockets or bag". What is it about visualization of emulated coughs that has any relationship to whether someone folds or shoves a mask into their pockets or bag?

32. Use of surgical face masks to reduce the incidence of the common cold among health care workers in Japan: a randomized controlled trial
Face mask use in healthcare workers has not been demonstrated to provide benefit in terms of colds symptoms or getting colds.
Study article: https://pubmed.ncbi.nlm.nih.gov/19216002/

Although I can't see the full text of this study, the information in the Abstract suggests it is all but useless given its small size. With only 16 individuals in each group (masks vs. no masks) and only one cold in each group, no meaningful comparison can be made. [Full text not available.]

33. A cluster randomized trial of cloth masks compared with medical masks in healthcare workers
Penetration of cloth masks by influenza particles was almost 97 percent and medical masks 44 percent. Cloth masks are essentially useless, and "medical grade" masks don't provide adequate protection.
Study article: https://pubmed.ncbi.nlm.nih.gov/25903751/

*This study is described on the CDC web site as being "improperly characterized by some sources as showing that surgical or cloth masks offer no benefit." In addition to pointing out a number of concerns with the study design, the CDC cites a follow-up study by the same authors suggesting that inadequate hand-washing of cloth masks may have contributed to the poor performance of the cloth masks in the original study. The follow-up study concluded (emphasis added), "**Cloth masks washed in the hospital laundry were as protective as medical masks.**"*

34. Simple respiratory protection–evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles
Cloth masks and other fabric materials tested in the study had 40-90 percent instantaneous penetration levels against polydisperse NaCl aerosols.
"Results obtained in the study show that common fabric materials may provide marginal protection against nanoparticles, including those in the size ranges of virus-containing particles in exhaled breath"
Study article: https://pubmed.ncbi.nlm.nih.gov/20584862/

"[M]arginal protection" is not the same as "no protection". To claim a mask is ineffective requires showing it offers no benefit relative to no mask. *The authors also conclude that, while fabric masks aren't as good as N95 masks, "The penetration levels obtained for fabric materials…were in the range found for some surgical masks in previous studies."*

35. Respiratory performance offered by N95 respirators and surgical masks: human subject evaluation with NaCl aerosol representing bacterial and viral particle size range
"The study indicates that N95 filtering facepiece respirators may not achieve the expected protection level against bacteria and viruses"
Study article: https://pubmed.ncbi.nlm.nih.gov/18326870/

"[M]ay not achieve the expected protection level against bacteria and viruses" is not the same as "are of no use". To claim a mask is ineffective requires showing it offers no benefit relative to no mask.

36. Do N95 respirators provide 95% protection level against airborne viruses, and how adequate are surgical masks?
The N95 filtering respirators may not provide expected protection level against small virions.
Study article: https://pubmed.ncbi.nlm.nih.gov/16490606/

The "small virions" are described in the Abstract as being in the range 10-80 nm, smaller than the SARS-CoV-2 virus itself and, as pointed out elsewhere, much smaller than the droplets and aerosols that carry the coronavirus. This study does not seem pertinent to the covid-19 question. [Full text not available.]

37. Do Surgical Masks Stop the Coronavirus?
Study article: https://slate.com/news-and-politics/2020/01/coronavirus-surgical-masks-china.html

This is not a "study", this is a news report that has no business being listed among legitimate scientific studies.

38. Effectiveness of personal protective measures in reducing pandemic influenza transmission: A systematic review and meta-analysis
This study states that an N95, depending on the brand, can range from 0.1-0.3 microns. However, most people cannot buy an N95 with a micron smaller than 0.3 micron because they are expensive and not readily available on the public market.
"N95 respirators made by different companies were found to have different filtration efficiencies for the most penetrating particle size (0.1 to 0.3 micron)"
"Above the most penetrating particle size the filtration efficiency increases with size; it reaches approximately 99.5% or higher at about 0.75 micron"
"Meta-analyses suggest that regular hand hygiene provided a significant protective effect (OR=0.62; 95% CI 0.52-0.73; I2=0%), and facemask use provided a non-significant protective effect (OR=0.53; 95% CI 0.16-1.71; I2=48%) against 2009 pandemic influenza infection"
Study article: https://pubmed.ncbi.nlm.nih.gov/28487207/

This study was listed previously as article #28. Listing it twice does not make the results more compelling.

39. Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta- analysis
"The use of N95 respirators compared with surgical masks is not associated with a lower risk of laboratory- confirmed influenza. It suggests that N95 respirators should not be recommended for the general public or non high-risk medical staff who are not in close contact with influenza patients or suspected patients"
N95 masks did show a positive effect for bacteria but not viruses.
Study article: https://pubmed.ncbi.nlm.nih.gov/32167245/

This study was listed previously as article #29. Listing it twice does not make the results more compelling.

40. Adolescents' face mask usage and contact transmission in novel Coronavirus
This study used dye to show if masks were contaminated. "As a result, masks surface becomes a contamination source. In the contact experiment, ten adults were requested to put on and off a surgical mask while doing a word

processing task. The extended contamination areas were recorded and identified by image analysis"
Study article: https://pubmed.ncbi.nlm.nih.gov/32582579/

This study was listed previously as article #30. Listing it twice does not make the results more compelling.

41. Use of surgical face masks to reduce the incidence of the common cold among health care workers in Japan: a randomized controlled trial
"Of the 8 symptoms recorded daily, subjects in the mask group were significantly more likely to experience headache during the study period"
"Face mask use in health care workers has not been demonstrated to provide benefit in terms of cold symptoms or getting colds"
Study article: https://pubmed.ncbi.nlm.nih.gov/19216002/

This study was listed previously as article #32. Listing it twice does not make the results more compelling.

42. Effectiveness of Adding a Mask Recommendation to Other Public Health Measures to Prevent SARS CoV-2 Infection in Danish Mask Wearers: A Randomized Controlled Trial
"The recommendation to wear surgical masks to supplement other public health measures did not reduce the SARS-CoV-2 infection rate among wearers by more than 50 percent in a community with modest infection rates, some degree of social distancing, and uncommon general mask use"
Study article: https://pubmed.ncbi.nlm.nih.gov/33205991/

*This study is described on the CDC web site as being "improperly characterized by some sources as showing that surgical or cloth masks offer no benefit." This study was designed to investigate the effects of mask wearing on the likelihood the wearer would be infected, but it did not explore the possibility that mask wearing would reduce transmission from infected individuals to others. The authors clearly state in their Discussion (emphasis added), "**The findings, however, should not be used to conclude that a recommendation for everyone to wear masks in the community would not be effective in reducing SARS-CoV-2 infections**, because the trial did not test the role of masks in source control of SARS-CoV-2 infection."*

43. A cluster randomized trial of cloth masks compared with medical masks in healthcare workers
"An analysis of mask use showed ILI (RR=6.64, 95 percent CI 1.45 to 28.65) and laboratory-confirmed virus (RR=1.72, 95 percent CI 1.01 to 2.94) were significantly higher in the cloth masks group compared with the medical masks group. Penetration of cloth masks by particles was almost 97 percent and medical masks 44 percent"
Study article: https://pubmed.ncbi.nlm.nih.gov/25903751/

This study was listed previously as article #33. Listing it twice does not make the results more compelling.

44. Respiratory performance offered by N95 respirators and surgical masks: human subject evaluation with NaCl aerosol representing bacterial and viral particle size range
"The study indicates that N95 filtering facepiece respirators may not achieve the expected protection level against bacteria and viruses. An exhalation valve on the N95 respirator does not affect the respiratory protection"
Study article: https://pubmed.ncbi.nlm.nih.gov/18326870/

This study was listed previously as article #35. Listing it twice does not make the results more compelling.

45. Performance of N95 respirators: filtration efficiency for airborne microbial and inert particles
Coronavirus is 0.125 micron, as you can read in this study, it states that most N95 masks can only filter particles as small as 0.75 microns. This is too big to trap this virus.
Even with an efficiency of 95 percent (depending on brand, so filtration may be lower) IF the virus can be trapped, it is still missing 5 percent and maybe more based on an N95 that has 0.1 microns.
Study article: https://pubmed.ncbi.nlm.nih.gov/9487666/

Whoever wrote this summary either does not understand or chooses to not mention that the coronavirus is not transmitted as an individual virus particle. Instead, it is transmitted in much larger droplets and aerosols, so this comparison of virus size and mask filtration properties is meaningless.

46. A Novel Coronavirus from Patients with Pneumonia in China, 2019
A Chinese study that proves that an airborne coronavirus particle (0.125 micron) can pass directly through an n95 mask.
Study article: https://pubmed.ncbi.nlm.nih.gov/31978945/

This is a blatantly misleading summary of the article. *The authors do indeed describe the size of the virus particles as 0.06-0.14 microns, but they have nothing at all to say about the effectiveness of N95 masks. Whoever wrote this summary either does not understand or chooses to not mention that the coronavirus is not transmitted as an individual virus particle. Instead, it is transmitted in much larger droplets and aerosols, so this comparison of virus size and mask filtration properties is meaningless.*

47. Airborne coronavirus particle (<0.125 micron) will pass directly through a N95 face mask.
"Human coronaviruses measure between 0.1 and 0.2 microns, which is one to two times below the cutoff" This "cut off" is referring to the size an N95 mask can trap. Most of us, are not using MEDICAL or regular N95s.
Study article: https://www.greenmedinfo.com/article/airborne-coronavirus-particle

This GreenMedInfo Summary is outrageous, appearing as it does associated with a link to article #46 above that has nothing at all to say about the ability of N95 masks to filter out the SARS-CoV-2 virus. ***The implication that this conclusion comes from the associated article is disgraceful.***