

COVID & KIDS: Risk Factors & Rational Use of FLCCC Protocols

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Effects of masking, lockdowns and school closures on kids



Henrico county, VA: speech therapy in masks: community response to fear

Healthy childhoods? - to not so much....

1950's



Inflection point late 1980's



The Change in Pediatrics: Acute to Chronic

- Asthma (the most common)
- Allergies (food & environmental)
- Diabetes (type 1 & 2)
- Autism spectrum (now 1 in 44)
- Cancer (more survivors)
- AIDS (kids are now surviving longer with treatment)
- Seizures (co-exist with other conditions)
- Obesity (30% American children overweight or obese)

THE HYGEINE HYPOTHESIS

African children playing in the dirt



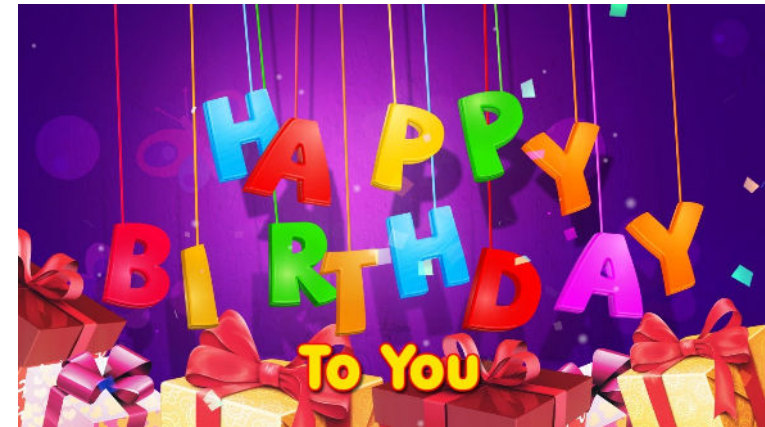
- Lambrecht, B., Hammad, H. The immunology of the allergy epidemic and the hygiene hypothesis. *Nat Immunol* **18**, 1076–1083 (2017). <https://doi.org/10.1038/ni.3829>
- Bianca Schaub, Roger Lauener, Erika von Mutius, The many faces of the hygiene hypothesis, *Journal of Allergy and Clinical Immunology*, Volume 117, Issue 5, 2006, Pages 969-977, <https://doi.org/10.1016/j.jaci.2006.03.003>.
- Strachan DP. Hay fever, hygiene, and household size. *BMJ*. 1989 Nov 18;299(6710):1259–1260.
- Busse WW. The relationship between viral infections and onset of allergic diseases and asthma. *Clin Exp Allergy*. 1989 Jan;19(1):1–9
- Holger et al, Epidemiological and immunological evidence for the hygiene hypothesis, *Immunobiology*, Vol 212, #6, 27 June 2007, pp 441-452
- Platts-Mills, T.A. The allergy epidemics: 1870-2010. *J. Allergy Clin. Immunol.* **136**, 3–13 (2015).

For a strong immune system have your dog lick your baby



How can you eat dirt if you are wearing a mask?

- Children who play in the dirt and are exposed to animal licking are healthier than kids who grow up in overly sterilized environments.
- Exposure to dirt and animals plus viruses, bacteria and parasites have strong protective effects on autoimmune diseases like type 1 diabetes, Hashimoto's thyroiditis, and celiac
- Bach, JF. The hygiene hypothesis in autoimmunity: the role of pathogens and commensals. *Nat Rev Immunol* **18**, 105–120 (2018).
<https://doi.org/10.1038/nri.2017.111>
- Guarner, Francisco, et al. "Mechanisms of Disease: The Hygiene Hypothesis Revisited." *Nature Clinical Practice Gastroenterology & Hepatology*, vol. 3, no. 5, May 2006, pp. 275–284, 10.1038/ncpgasthep0471. Accessed 6 Dec. 2020.



Comparing Africa and USA for COVID success

Country	Deaths per million
Tunisia	2,198
South Africa	1,582
Botswana	1,084
Egypt	219
Zambia	214
Somalia	86
Congo	69
Ethiopia	63
Chad	11.6
Burundi	3.3

USA: deaths per million =
2,554



Childhood COVID deaths compared to bikes, cars, and suicide

- In seven countries (the US, UK, Italy, Spain, France, Germany and South Korea), the death rate from COVID in pediatric patients was 1.7 per 1 million.
- COVID 19 deaths in children analyzed up until February 2021 comprise 0.48% of total mortality from all causes in a normal year.
- COVID 19 deaths in children update July 2021: comprise 0.6% of all cause pediatric mortality
 - Bhopal, Sunil S, et al. “Children and Young People Remain at Low Risk of COVID-19 Mortality.” *The Lancet Child & Adolescent Health*, vol. 5, no. 5, May 2021, pp. e12–e13, www.thelancet.com/action/showPdf?pii=S2352-4642%2821%2900066-3, 10.1016/s2352-4642(21)00066-3. Accessed 25 Apr. 2021.

Mental Health–Related Emergency Department Visits Among Children Aged <18 Years During the COVID-19 Pandemic United States, January 1–October 17, 2020



MMWR Weekly / November 13, 2020 / 69(45);1675–1680
Rebecca T. Leeb, PhD¹



Spring 2020: ADOLESCENT MENTAL HEALTH CLAIMS DOUBLED

- In March and April 2020, **mental health claim** lines for individuals aged 13-18, as a percentage of all medical claim lines, approximately **doubled** over the same months in the previous year.
- All **medical claim** lines however, **decreased** by approximately half
 - At Advocates for Children, office visits decreased to as much as 42-65 percent from prior year visits

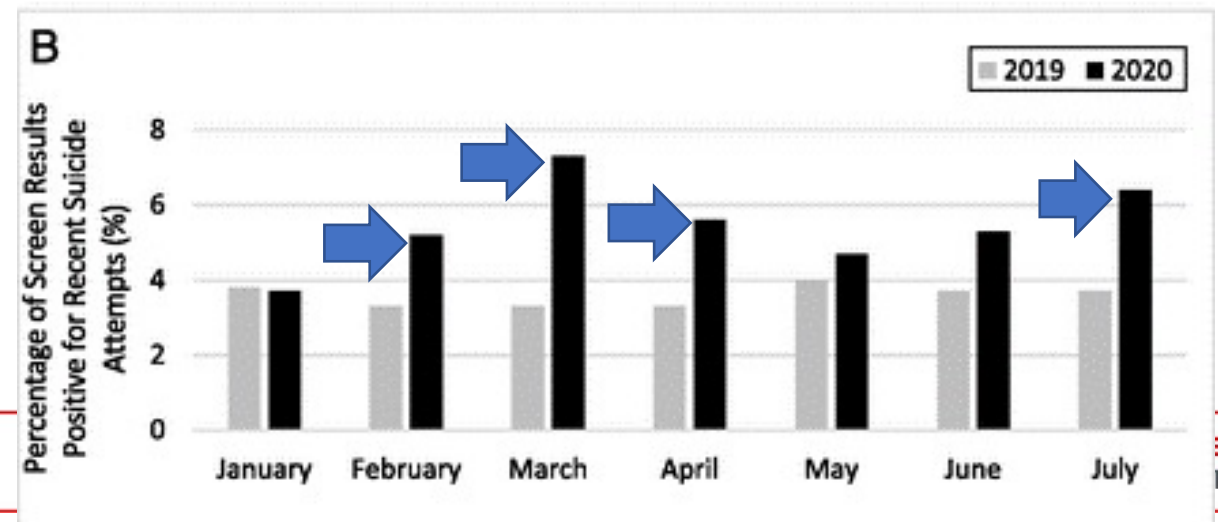
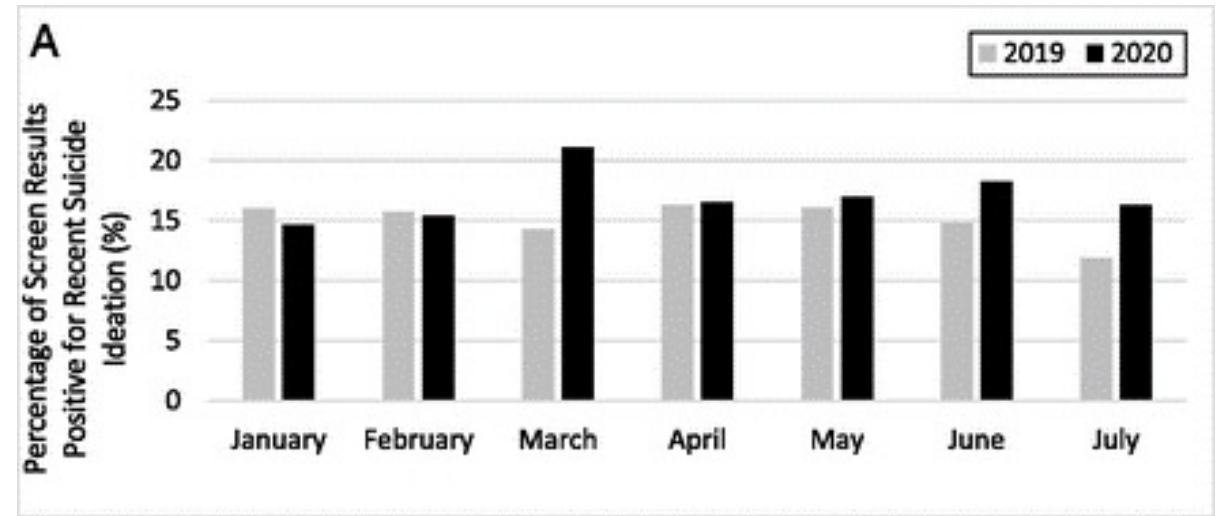
Ages 6-12

- Spring to November 2020, claim lines for **obsessive-compulsive disorder and tic disorders increased** as a percentage of all medical claim lines from their levels in the corresponding months of 2019. •
- April 2020, claim lines for **generalized anxiety disorder increased 93.6 percent** as a percentage of all medical claim lines over April 2019
- **Major depressive disorder** claim lines **increased 83.9 percent**
- **Adjustment disorder** claim lines **89.7 percent**.

Suicide Ideation and Attempts in a Pediatric ER Before and During COVID-19

- Suicide attempts began rising in February 2020
- In March suicide attempts were double the previous year
- Attempts stayed elevated through the summer

• Hill RM, et al. Pediatrics, Dec. 16, 2020



What happens when you put elementary school kids in front of computers for a year?

(Onyema, Edeh. "Impact of Coronavirus Pandemic on Education." *Journal of Education and Practice*, vol. 11, no. 13, May 2020, 10.7176/jep/11-13-12. Accessed 2 June 2020.)

- The switch from in person learning to online classes was hampered by poor infrastructure (network access, poor digital skills, and power problems).
- In addition, online learning was employed in age groups developmentally unable to master the technology being utilized.



Brown University Study

Impact of the COVID-19 Pandemic on Early
Child Cognitive Development: Initial Findings in
a Longitudinal Observational Study of Child
Health

Sean CL Deoni, Jennifer Beauchemin, Alexandra
Volpe, Viren D'Sa, the RESONANCE
Consortium

medRxiv 2021.08.10.21261846; doi:
<https://doi.org/10.1101/2021.08.10.21261846>

- Leveraging a large on-going longitudinal study of child neurodevelopment, we examined general childhood cognitive scores in 2020 and 2021 vs. the preceding decade, 2011-2019.
- We find that children born during the pandemic have **significantly reduced verbal, motor, and overall cognitive performance compared to children born pre-pandemic. Moreover, we find that males and children in lower socioeconomic families have been most affected.**
- Results highlight that even in the absence of direct SARS-CoV-2 infection and COVID-19 illness, the environmental changes associated COVID-19 pandemic is significantly and negatively affecting infant and child development.

Red flag for concern about early infant cognitive and social/emotional development

ELC = early learning composite

...we find mean ELC values from 2011 to 2019 ranging from 98.5 to 107.3, with standard deviations of 15.2 to 19.7 ([Fig. 2](#)), in general agreement with the expected mean of 100 and standard deviation of 15. Means and standard deviations for 2020 (March to December) and 2021 (January through Aug) were: **86.3+/-17.9 and 78.9+/-21.6**, respectively.

WHAT IS THE RISK OF OMICRON TO KIDS?

- **Headlines**

- Omicron cases up 60%
- Hospitalizations up 14%
- Booster doses approved for 12 and older

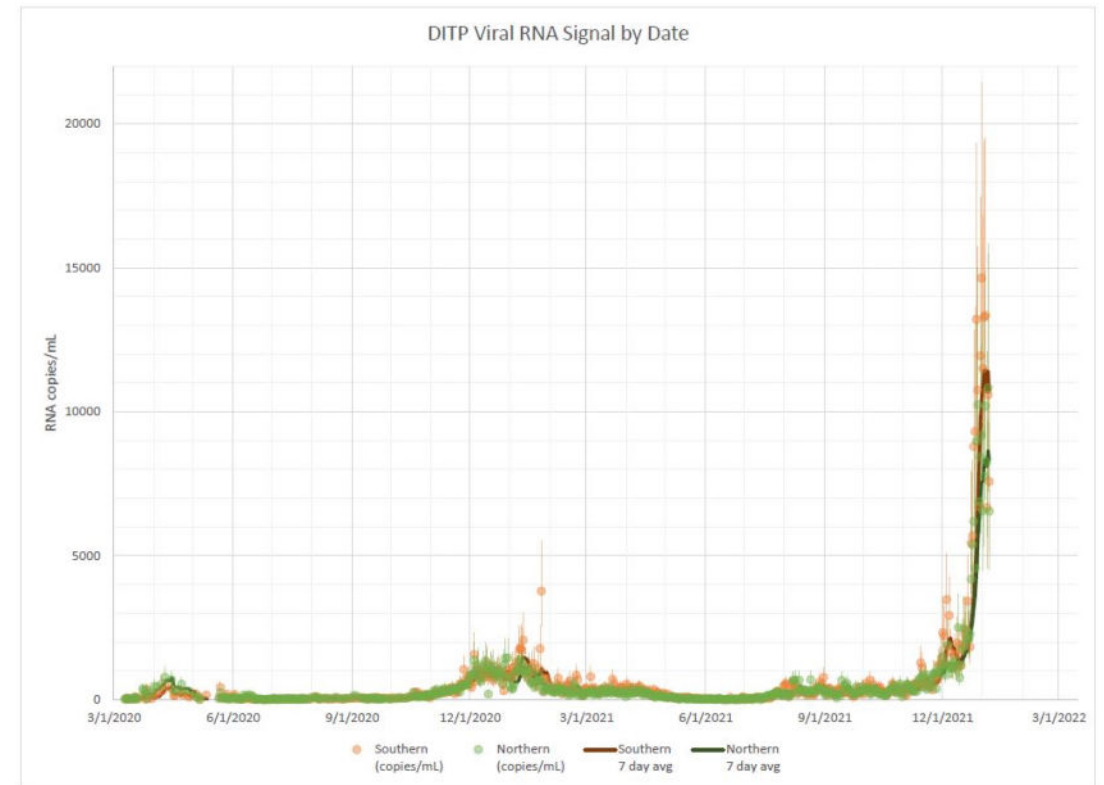
- **Thoughtful analysis**

- 70% decrease ER visits omicron vs. delta
- 55% decrease hospitalizations
- 66% decrease ICU admissions

Omicron more infectious

- R naught: how many people are you likely to infect?
- Alpha: 1-3
- Delta: 4-5
- Omicron: 7-10

Viral load: waste water in Boston

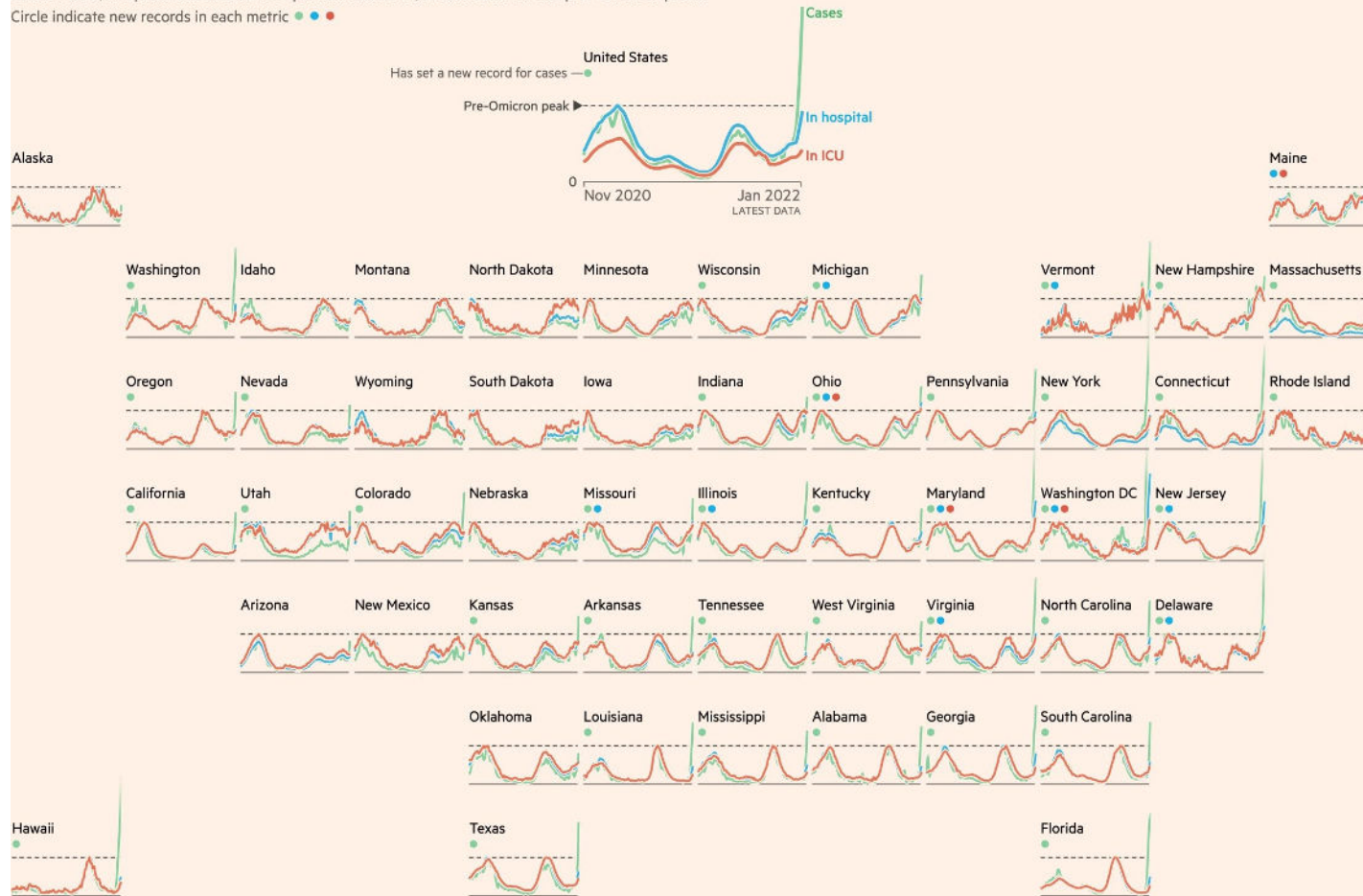


Omicron: high spike cases, less deadly*

In many US states, ICU patient numbers are already approaching record levels as Omicron takes off

Covid cases, hospitalisations and ICU patient numbers, each relative to its pre-Omicron peak.

Circle indicate new records in each metric ● ● ●



FT analysis of data from Johns Hopkins CSSE and US CDC. Cases shifted forward to adjust for lag between testing positive and developing severe disease
FT graphic: John Burn-Murdoch / @burnmurdoch
© FT

*Deaths trail behind hospitalizations

Omicron less deadly: Comparison Outcomes Covid in peds & adult before and after Omicron

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Comparison of outcomes from COVID infection

...the 3-day risks in the Emergent Omicron cohort outcomes were consistently less than half those in the Delta cohort: ED visit: **4.55% vs. 15.22%** (risk ratio or RR: 0.30, 95% CI: 0.28-0.33); hospitalization: **1.75% vs. 3.95%** (RR: 0.44, 95% CI: 0.38-0.52]; ICU admission: **0.26% vs. 0.78%** (RR: 0.33, 95% CI: 0.23-0.48); mechanical ventilation: **0.07% vs. 0.43%** (RR: 0.16, 95% CI: 0.08-0.32).

HW Background The Omicron SARS-CoV-2 variant is rapidly spreading in the US since December 2021 and is

1:07:59 1:20:22

<https://doi.org/10.1101/2021.12.30.21268495>

“Omicron tidal wave”

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Comparison of outcomes from COVID infection

In children under 5 years old, the overall risks of ED visits and hospitalization in the Emergent Omicron cohort were 3.89% and 0.96% respectively, significantly lower than 21.01% and 2.65% in the matched Delta cohort

Similar trends were observed for other pediatric age groups (5-11, 12-17 years), adults (18-64 years) and older adults (≥ 65 years).

HW Background The Omicron SARS-CoV-2 variant is rapidly spreading in the US since December 2021 and is more contagious than earlier variants. Currently, data on the severity of the disease caused by the Omicron variant is limited. In a study, researchers compared 2-day risks of emergency department

1:09:21 1:19:00

Questions before pediatric protocol in progress



CHILD CARE

Work in progress

FLCCC suggestions for optimal child health in response to COVID

Components of CHILD CARE mnemonic

- **C:** Chronic conditions should receive optimal management
- **H:** hydroxychloroquine
- **I:** Ivermectin
- **L: Lifestyle**
- **D:** Vitamin D

- **C:** Vitamin C
- **A:** Vitamin A
- **R: Recovery**
- **E:** Et cetera: Zinc, Saccharomyces boulardii, Quercetin, Melatonin, Famotidine

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CHRONIC CONDITIONS: diabetes, congenital heart disease, chronic lung disease, obesity

- Hamilton JL. Returning to School in the Midst of the COVID-19 Pandemic for Children with Chronic Disease and Special Needs. *J Pediatr Nurs*. 2021;57:85-86. doi:10.1016/j.pedn.2020.07.010
 - Nurses advocating for the child and noting problems with home-based learning
- Children with chronic disease and COVID-19. *Turk Pediatri Ars* 2020; 55(2): 93–4. Evliyaoğlu O.
- Hacker KA, Briss PA, Richardson L, Wright J, Petersen R. COVID-19 and Chronic Disease: The Impact Now and in the Future. *Prev Chronic Dis*. 2021;18:E62. Published 2021 Jun 17. doi:10.5888/pcd18.210086
 - NIH guidance

Prevention of chronic disease with breastfeeding

- Lowered risk of type I diabetes, celiac disease, inflammatory bowel disease and some childhood cancers
- Decreased risk for infection, allergy and autoimmunity
- Protective against child obesity
- Fewer hospitalizations for respiratory disease

Lodge, C.J. et al. Breastfeeding and asthma and allergies: a systematic review and meta-analysis. *Acta Paediatr.* **104**, 38–53 (2015).



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HYDROXYCHLOROQUINE

- **Pre-exposure prophylaxis:**
 - The National Institutes of Health (NIH) COVID-19 guidelines recommend against the use of any drugs for SARS-CoV-2 pre-exposure prophylaxis, except in the setting of a clinical trial.
- **Postexposure prophylaxis:** The NIH COVID-19 guidelines recommend against the use of hydroxychloroquine for SARS-CoV-2 postexposure prophylaxis.
- **Treatment:** An emergency use authorization for hydroxychloroquine in the treatment of COVID-19 was issued by the FDA in March 2020 and subsequently revoked in June 2020 due to safety concerns and lack of efficacy (FDA 2020). [NIH](#) and Infectious Diseases Society of America COVID-19 guidelines recommend against the use of hydroxychloroquine, with or without azithromycin, for the treatment of COVID-19
- Safe dosing for **Systemic lupus erythematosus (SLE):** Children and Adolescents: 4 to 6.5 mg/kg/day in 1 to 2 divided doses up to 400 mg/d
 - Maximum daily dose: 400 mg/day
 - (EULAR [Fanouriakis 2019]; Marks 2010; Thorbinson 2016);
 - Based upon data in adults, some experts recommend a maximum of 5 mg/kg/day to mitigate risk of retinal toxicity
 - (AAO [Marmor 2016]); Costedoat-Chalemeau 2019; EULAR [Fanouriakis 2019]; Fanouriakis 2020).

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IVERMECTIN: seems safe above and below 15 kg

- Levy M, Martin L, Bursztejn AC, Chiaverini C, Miquel J, Mahé E, Maruani A, Boralevi F; Groupe de Recherche de la Société Française de Dermatologie Pédiatrique. Ivermectin safety in infants and children under 15 kg treated for scabies: a multicentric observational study. Br J Dermatol. 2020 Apr;182(4):1003-1006. doi: 10.1111/bjd.18369. Epub 2019 Sep 29. PMID: 31344258.
- Morris-Jones R. Oral ivermectin for infants and children under 15 kg appears to be a safe and effective treatment for scabies. Br J Dermatol. 2020 Apr;182(4):835-836. doi: 10.1111/bjd.18788. Epub 2019 Dec 29. PMID: 31885077.
- Chosidow A, Gendrel D. Tolérance de l'ivermectine orale chez l'enfant [Safety of oral ivermectin in children]. Arch Pediatr. 2016 Feb;23(2):204-9. French. doi: 10.1016/j.arcped.2015.11.002. Epub 2015 Dec 14. PMID: 26697814.
- Romani L, Marks M, Sokana O, Nasi T, Kamoriki B, Cordell B, Wand H, Whitfeld MJ, Engelman D, Solomon AW, Kaldor JM, Steer AC. Efficacy of mass drug administration with ivermectin for control of scabies and impetigo, with coadministration of azithromycin: a single-arm community intervention trial. Lancet Infect Dis. 2019 May;19(5):510-518. doi: 10.1016/S1473-3099(18)30790-4. Epub 2019 Apr 4. PMID: 30956111; PMCID: PMC6483975.
- Jittamala P, Monteiro W, Smit MR, Pedrique B, Specht S, Chaccour CJ, Dard C, Del Giudice P, Khieu V, Maruani A, Failoc-Rojas VE, Sáez-de-Ocariz M, Soriano-Arandes A, Piquero-Casals J, Faisant A, Brenier-Pinchart MP, Wimmersberger D, Coulibaly JT, Keiser J, Boralevi F, Sokana O, Marks M, Engelman D, Romani L, Steer AC, von Seidlein L, White NJ, Harriss E, Stepniewska K, Humphreys GS, Kennon K, Guerin PJ, Kobylinski KC. A systematic review and an individual patient data meta-analysis of ivermectin use in children weighing less than fifteen kilograms: Is it time to reconsider the current contraindication? PLoS Negl Trop Dis. 2021 Mar 17;15(3):e0009144. doi: 10.1371/journal.pntd.0009144. PMID:
 - **1,088 children weighing less than 15 kg** were administered oral ivermectin for scabies, cutaneous larva migraines, myiasis, pthiriasis, strongyloidiasis, trichuriasis, and parasitic disease of unknown origin.
 - Overall, a total of **1.4% (15/1,088) of children experienced 18 adverse events all of which were mild and self-limiting**. No serious adverse events were reported.
 - **Conclusions/significance:** Existing limited data suggest that oral ivermectin in children weighing less than 15 kilograms is safe. Data from well-designed clinical trials are needed to provide further assurance.

Components of CHILD CARE

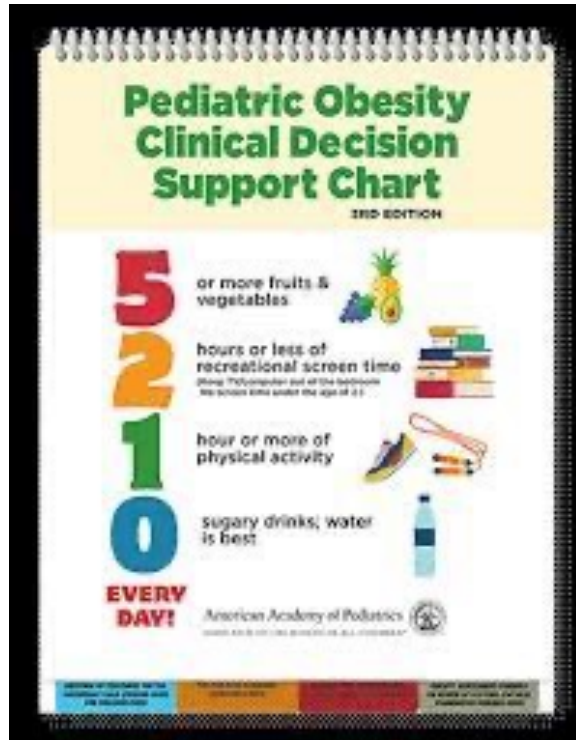
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LIFESTYLE

Nutrition, Sleep, Movement, Stress Management, Relationships

Nutrition



Increase in carbs, sugar, comfort foods
 Access to food 24/7 while at home
 Practice trends of significant weight gains during first 10 months of COVID lockdowns





Sleep hygiene

Epsom's salts baths prior to bed

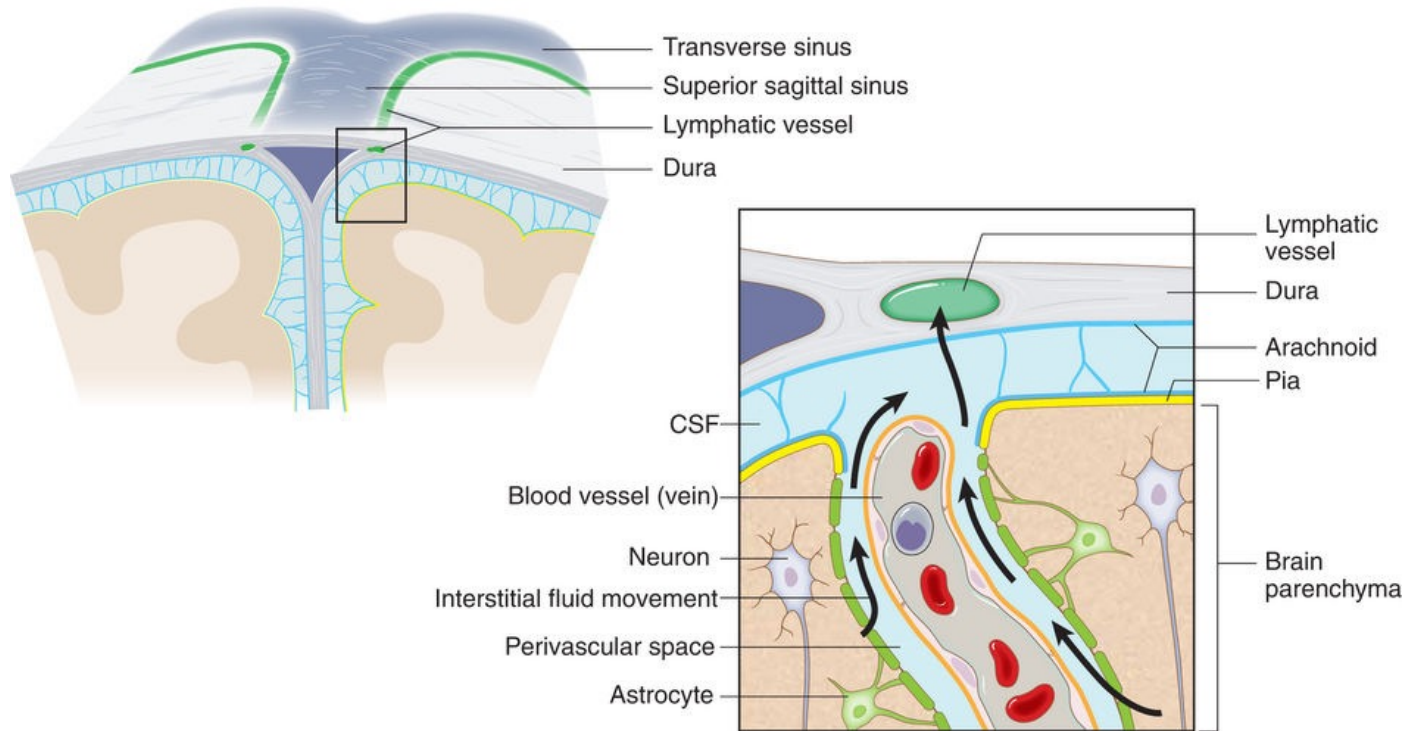
Magnesium for anxiety: 400-600 mg/d –titrate

Dark, cool, white noise

Nightmares – talk about content, then reassure



Taking out the trash out of your brain



Antoine Louveau, Structural and functional features of central nervous system lymphatic vessels, Nature 523, 337-341

Movement

Decreased exercise and time outside during lockdown





Stress management

Fears of contagion picked up by degree of anxiety in household

Adverse effects of screen time; video gaming





Relationships

For “at risk” children, schools provide many of their supportive relationships and sources of self esteem

Known social determinants of health related to parental lack of employment, financial stress, domestic abuse, substance abuse



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Immune functions of Vitamin D

- **Nonclassic actions of Vitamin D.** Bikle D. *J Clin Endocrinol Metab* January 2009, 94(1): 26-34.
 - Inhibits T cell proliferation
 - Increases IL-10 and TGF-beta
 - Increases T regulatory cells
 - Decreases innate inflammation

COVID morbidity and mortality
Correlated inversely with Vit D levels



Vitamin D references

- Aurica G. Telcian, Mihnea T. Zdrenghea, Michael R. Edwards, Vasile Laza-Stanca, Patrick Mallia, Sebastian L. Johnston, Luminita A. Stanciu, Vitamin D increases the antiviral activity of bronchial epithelial cells in vitro, *Antiviral Research*, Volume 137, 2017, Pages 93-101, ISSN 0166-3542, <https://doi.org/10.1016/j.antiviral.2016.11.004>.
- L Bishop, E., Ismailova, A., Dimeloe, S., Hewison, M. and White, J.H. (2021), Vitamin D and Immune Regulation: Antibacterial, Antiviral, Anti-Inflammatory. *JBMR Plus*, 5: e10405. <https://doi.org/10.1002/jbm4.10405>
- Édouard Lansiaux, Philippe P. Pébaÿ, Jean-Laurent Picard, Joachim Forget, Covid-19 and vit-d: Disease mortality negatively correlates with sunlight exposure, *Spatial and Spatio-temporal Epidemiology*, Volume 35, 2020, 100362, ISSN 1877-5845,
- Radujkovic, A.; Hippchen, T.; Tiwari-Heckler, S.; Dreher, S.; Boxberger, M.; Merle, U. Vitamin D Deficiency and Outcome of COVID-19 Patients. *Nutrients* **2020**, *12*, 2757. <https://doi.org/10.3390/nu12092757>
- Bleizgys, A. Vitamin D and COVID-19: It is time to act. *Int J Clin Pract.* 2021; 75:e13748. <https://doi.org/10.1111/ijcp.13748>
- Optimal range: 50-80 ng/dl
 - Adjust doses with testing prn
- Doses: depends on latitude, skin color, sun exposure, etc.
 - Infants: 400-800 IU/d
 - Toddlers: 1000-2000 IU/d
 - Elementary: 2000-4000 IU/d
 - Adolescents: 4000-5000 IU/d

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VITAMIN C: conservative guidelines vs. Geniuses collecting data



- The Dietary Guidelines for Americans recommends that babies receive ... following amount of vitamin C each day
 - **0–6 months of age:** 40 milligrams (mg)
 - **6–12 months:** 50 mg
- Possible side effects associated with overconsumption of vitamin C include kidney stones, nausea, and diarrhea
 - Ascorbic acid is water soluble and children usually have great kidneys
- The U.K.'s National Health Service (NHS) only advises that vitamins and mineral supplements be given to infants 6 months of age or older

GENIUSES: VOLUMINOUS DATA ABOUT HIGHER DOSES AND GREAT RESULTS

A Proposition: Megadoses of Vitamin C are Valuable in the Treatment of Cancer

[Linus Pauling, PhD, Charles Moertel, MD](#)

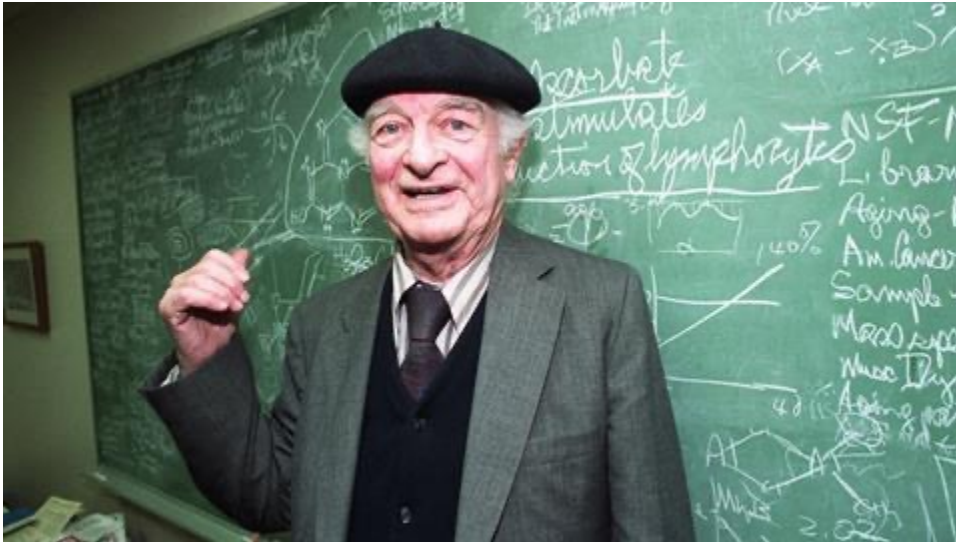
Nutrition Reviews, Volume 44, Issue 1, January 1986, Pages 28–29,

April 12, 1971

Vitamin C and Common Cold

Linus Pauling, PhD

Linus Pauling



Respect for Vitamin C

LINUS PAULING

SCIENCE • 20 Dec 1991 • Vol 254, Issue 5039 • p.

1

Vitamin C Papers

[LINUS PAULING](#)

SCIENCE • 24 Mar 1989 • Vol 243, Issue 4898

The antiviral properties of vitamin C

Ruben Manuel Luciano Colunga Biancatelli, , Max Berrill & **Paul E. Marik**

Expert Review of Anti-infective Therapy

Volume 18, 2020 - [Issue 2](#)

Pages 99-101 | Received 14 Sep 2019, Accepted 16 Dec 2019, Published online: 23 Dec 2019

Paul Marik



Paul E. Marik, Pierre Kory, Joseph Varon, Jose Iglesias, G Umberto Meduri. (2021) [MATH+ protocol for the treatment of SARS-CoV-2 infection: the scientific rationale](#). *Expert Review of Anti-infective Therapy* 19:2, pages 129-135.

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VITAMIN A

- Steven E. Trasino, A role for retinoids in the treatment of COVID-19?, *Clinical and Experimental Pharmacology and Physiology*, 10.1111/1440-1681.13354, **47**, 10, (1765-1767), (2020). [Wiley Online Library](#)
- Mohammad Shah Alam, Daniel M. Czajkowsky. (2021) SARS-CoV-2 infection and oxidative stress: Pathophysiological insight into thrombosis and therapeutic opportunities. *Cytokine & Growth Factor Reviews* 323.
- Li R, Wu K, Li Y, et al. Revealing the targets and mechanisms of vitamin A in the treatment of COVID-19. *Aging (Albany NY)*. 2020;12(15):15784-15796. doi:10.18632/aging.103888
- Aziz Rodan Sarohan, COVID-19: Endogenous Retinoic Acid Theory and Retinoic Acid Depletion Syndrome, *Medical Hypotheses*, Volume 144, 2020, 110250, ISSN 0306-9877



Face



Arm

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RECOVERY: mortality data kids

Survival rate: 99.998%

- Rate of MIS-C
- Cohort study of 248 persons with MIS-C, MIS-C incidence was 5.1 persons per 1 000 000 person-months and 316 persons per 1 000 000 SARS-CoV-2 infections in persons younger than 21 years.

Payne AB, Gilani Z, Godfred-Cato S, et al. Incidence of Multisystem Inflammatory Syndrome in Children Among US Persons Infected With SARS-CoV-2. *JAMA Netw Open*. 2021;4(6):e2116420. doi:10.1001/jamanetworkopen.2021.16420

Multisystem Inflammatory Syndrome

- “The syndrome is an inflammatory reaction in the body about four weeks after infection with the SARS-CoV-2 virus.
- The initial symptoms often include fever, rashes, red eyes, diarrhea and vomiting, and may get worse over a few days.
- The inflammation can affect the heart, blood vessels and other organs, which can make some children very ill and in need of urgent care.”

Johns Hopkins parent education

Hospitalizations in kids: for COVID or with COVID?

Positive PCR tests in children hospitalized; high rates of false positives

“45% of admissions were categorized as unlikely to be caused by SARS-CoV-2” Yet hospital records from around the country may reflect positive test status without this type of analysis about the true cause of the hospitalization.

- In the 117 pediatric hospitalizations
 - 39.3% were asymptomatic,
 - 28.2% had mild to moderate disease,
 - 7.7% had severe illness, and 15 (12.8%) had critical illness.
 - 12% patients had MIS-C.



Kushner LE, et al. “For COVID” or “With COVID”: Classification of SARS-CoV-2 Hospitalizations in Children. *Hosp Pediatr.* 2021; doi: 10.1542/hpeds.2021-006001

Prior medical conditions increase risk death 8.8 times

- In this study, we link pediatric population–based data from the US Center for Disease Control and Prevention to COVID-19 hospitalization and in-hospital death.
- In 27,045 US children with confirmed COVID-19, we demonstrate that **African American [OR 2.28 (95% CI: 1.93, 2.70)]** or **mixed race [OR 2.95 (95% CI: 2.28, 3.82)]** and an **underlying medical condition [OR 3.55 (95% CI: 3.14, 4.01)]** are strong predictors for hospitalization.
- Children with a prior medical condition had an increased odd for death [OR 8.8 (95% CI: 3.7, 21.1)].

Published: 20 January 2021, European Journal of Pediatrics

Demographic predictors of hospitalization and mortality in US children with COVID-19

Hard to find healthy kids who die from COVID

- Marty Makary, MD, from Johns Hopkins collaborated with nonprofit FAIR Health to analyze approximately 48,000 children under 18 diagnosed with Covid.
- They looked at health-insurance data from April to August 2020.
- Report found a mortality rate of zero among children without a pre-existing medical condition such as leukemia.
- In March 2021 the CDC reported that 78% of Covid hospitalizations were among overweight or obese patients.

The Flimsy Evidence Behind the CDC's Push to Vaccinate Children By Marty Makary
WSJ July 19, 2021

Components of CHILD CARE

- **C:** Chronic conditions should receive optimal management
- **H:** hydroxychloroquine
- **I:** Ivermectin
- **L: Lifestyle**
- **D:** Vitamin D

- **C:** Vitamin C
- **A:** Vitamin A
- **R: Recovery**
- **E: Et cetera:** Zinc, Saccharomyces boulardii, Quercetin, Melatonin, Famotidine

IgA: in respiratory and GI secretions

- SARS CoV2 enters respiratory, cornea and GI tract
 - *Sungnak et al. SARS-CoV-2 entry factors are highly expressed in nasal epithelial cells together with innate immune genes. Nat Med 2020;26:681-7. doi:10.1038/s41591-020-0868-6 pmid:32327758*
- Immunoglobulin A is the primary immunoglobulin expressed at these entry points
 - *Corthesy. Multi-faceted functions of secretory IgA at mucosal surfaces. Front Immunol 2013;4:185. doi:10.3389/fimmu.2013.00185 pmid:23874333*
- IgA antibodies specific to SARS CoV2 have been found in saliva, breastmilk and serum
 - *Fox A, Marino J, Amanat F, et al. Evidence of a significant secretory-IgA-dominant SARS-CoV-2 immune response in human milk following recovery from COVID-19. medRxiv 2020 :2020.2005.2004.20089995. [Preprint.] doi:10.1101/2020.2005.2004.20089995*

Actions of *Saccharomyces Boulardii*

- Non-pathogenic
- Transient
- Increased intestinal brush border enzyme activities
- Enhances short chain fatty acids that nourish colonic mucosal cells
- Increased secretory IgA secretion
- Decreases diarrhea
- Acts as prebiotic and probiotic
- Decreased adhesion of pathogenic species

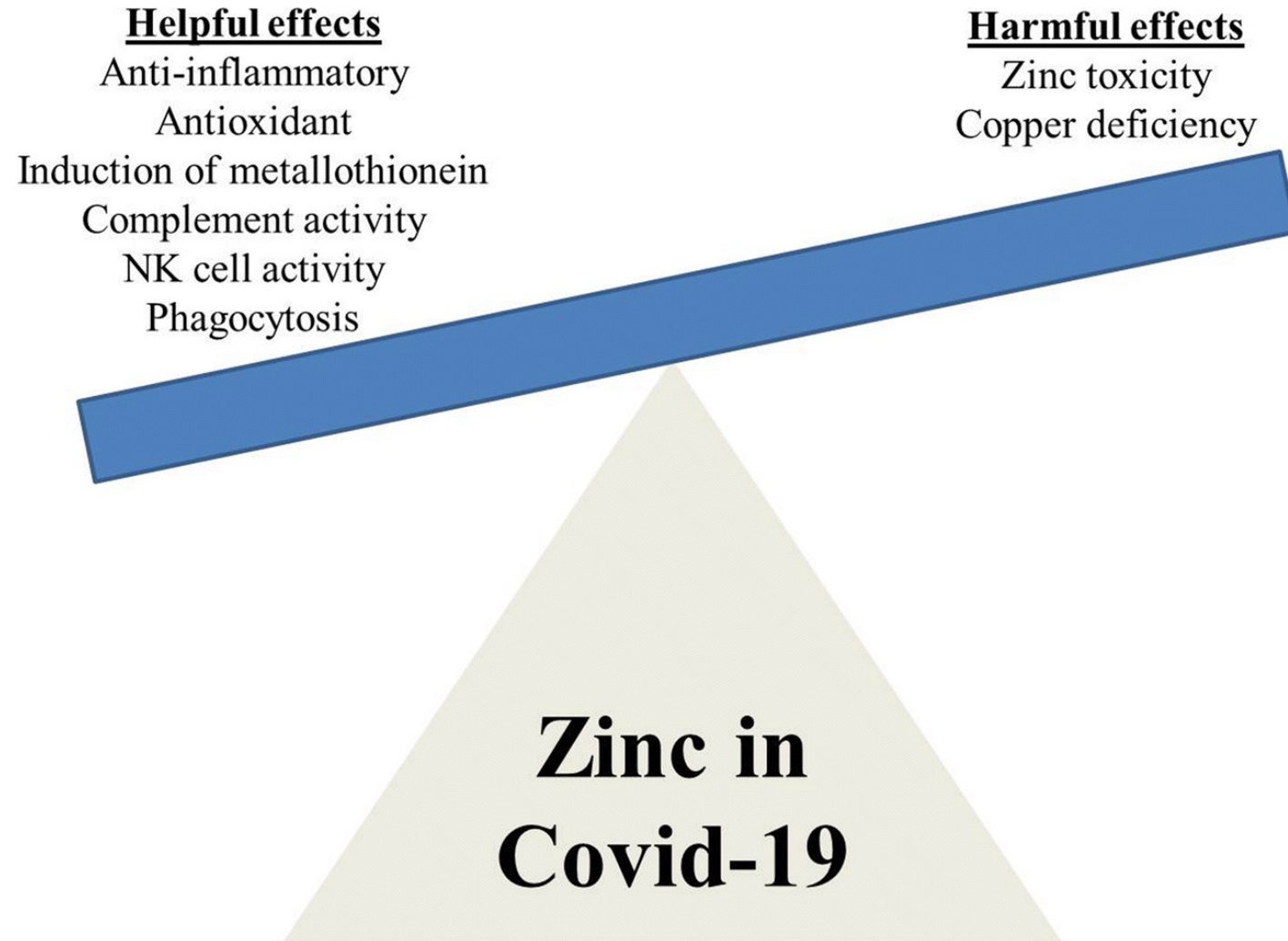
SB information to explain to parents: from Sidney M. Baker

- Saccharomyces (sugar fungus) is the genus name of common yeasts such as Saccharomyces cerevisiae (baker's and brewer's yeast). S. boulardii is a closely related yeast whose exact classification and distinction from S. cerevisiae is debated, but which clinically acts as if it kills off pathogenic yeast and supports the development of normal gut flora.
- Taking S. boulardii may result in the three main initial results (intense initial aggravation of symptoms – so called “die off” or nothing happens all, or marked benefit) that can be expected with any antifungal, except that the intensity of the die off may be more than with any other antifungal. Charcoal, see below, is the answer to such a die off and usually quenches it to make it stop or become tolerable.
- Apart from die off reactions it has no toxicity. It resides in one's gut where it joins the other flora until shortly after discontinuation and then disappears. While you are taking it a stool culture may grow out a yeast identified by the lab as S. cerevisiae, because the lab cannot distinguish between these two strains.
- Saccharomyces boulardi (S.b) dosage can be increased safely to multiples of the original dose to explore the possibility of overcoming partial resistance of the targeted fungus. The option of switching to other “systemic” antifungals such as terbinafine (Lamisil), ketoconazole (Nizoral), itraconazole (Sporanox) and fluconazole (Diflucan) is remarkably safe but cannot compete with the complete safety of S.b.
- This trial should not be undertaken without first achieving control of constipation, usually with magnesium citrate capsules (150 mg) or CALM powder or liquid such as is found in 10 oz bottles provided as a cathartic but can be portioned out to be taken “to bowel tolerance.” Bowel tolerance is achieved by increasing the daily dose – usually taken in the evening but can be spread out over the day – until the effect produced is just short of risking an embarrassing urgency of bowel movements. As that dose is approached the idea is to back off until reliable daily bowel movements are achieved with a frequency of at least once, preferably twice or three times.

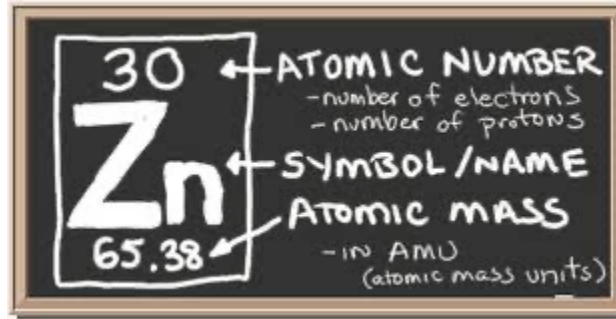
ZINC: why not?

- Chiang KC, Gupta A. To zinc or not to zinc for COVID-19 prophylaxis or treatment?. *J Med Microbiol.* 2021;70(9):001299. doi:10.1099/jmm.0.001299
 - Randomized controlled trials are urgently needed to test the efficacy and safety of zinc in patients with COVID-19,
- *NIH: Last Updated: April 21, 2021* - Recommendations
 - There is insufficient evidence for the COVID-19 Treatment Guidelines Panel (the Panel) to recommend either for or against the use of zinc for the treatment of COVID-19.
 - The Panel **recommends against** using **zinc** supplementation above the recommended dietary allowance for the prevention of COVID-19, except in a clinical trial.

Ionophore: a substance which is able to transport particular ions across a lipid membrane in a cell.



Behavioral effects of zinc on prisoners with violent behavior



Decreased aggression in prisoners and young males:

Jessica L. Hambly, Kelly Francis, Sohil Khan, Kristen S. Gibbons, William J. Walsh, Brett Lambert, Chris Testa, and Alison Haywood. Journal of Child and Adolescent Psychopharmacology. Nov 2017. 823-832. <http://doi.org/10.1089/cap.2016.0199>

William J. Walsh, Laura B. Glab, Mary L. Haakenson,
Reduced violent behavior following biochemical therapy,
Physiology & Behavior, Volume 82, Issue 5, 2004, Pages 835-839, ISSN 00319384, <https://doi.org/10.1016/j.physbeh.2004.06.023>.

QUECERTIN

- Food sources: fruits, veggies, seeds, grains, kale, red onions
 - Rapidly cleared with 1-2 hour half life after food
- Mast cell stabilizer: role in allergic, inflammatory and autoimmune diseases which release IL 8 & TNF alpha
- Also, anti-clotting mechanism
- Therapeutic effects enhanced when given with Vitamin C
- Doses:
 - Toddlers: up to 250 mg bid
 - Elementary: up to 500 bid
 - Adolescents 400-600 mg up to tid

MELATONIN

- Beyond sleep – excellent anti-oxidant (independent of M1 and M2 receptors that are important for sleep induction)
- Regulation of mood, learning, memory and immune activity
- Doses:
 - Not recommended in babies who are still establishing sleep/wake rhythms
 - most toddlers do well with between 0.5 and 3 mg
 - In special circumstances, we use 5-10 mg
- Pediatric limitations on long acting forms
 - If kids cannot swallow pill without chewing, hard to use long acting forms
 - Some kids have rebound waking between 2-3 am – vivid nightmares

FAMOTIDINE: H2 receptor antagonist

- Approved in infants down to 1 month of age
- Dose 0.5 – 1 mg/kg/day q day or divided bid
- Caution with alpha gal patients: pill form has mag stearate, which sometimes has mammal products, sometimes not
- Caution in pregnancy and breastfeeding but good R:B ratio IMO
 - Pregnancy: animal studies showed problems only at >250 times human doses
 - Breastfeeding: animal studies showed growth suppression at 600 times human doses

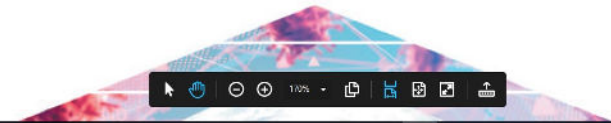
John Steinbeck's cottage



COVID-19 Treatment and Vaccine Decisions from a Pediatric Perspective:

Evaluating the risks and benefits for your child or adolescent beyond CDC, FDA or WHO proclamations

By the Children's Health Defense Team



The Real Anthony Fauci

Bill Gates, Big Pharma, and the Global War on Democracy and Public Health

Robert F. Kennedy Jr.
NEW YORK TIMES BESTSELLING AUTHOR

Children's Health Defense

The Biology of Trauma

The brain is not structurally complete at birth.

- Myelination, proliferation of synaptic connections, and development of glial and circulatory support systems all continue long after a child has entered the world.
- Nature gives children a chance to adapt to the specific needs presented by the environment into which they have been born.
 - Opportunities for optimal development:
 - Adequate nutrition vs. school closures during COVID
 - Avoidance of toxins like lead, mercury, alcohol, artificial spike proteins
 - Nurturing, loving and stimulating environment; development of the ability to “read” faces
 - Caregivers present, attentive and consistent vs. COVID trauma to adult population

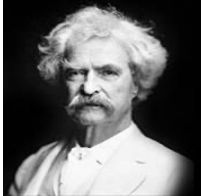


Science is incomplete & ever evolving



Wisdom vs. Knowledge

It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so.



Mark Twain

American Author and Humorist

(1835-1910)

QuoteHD.com

“IT'S EASIER TO
FOOL PEOPLE
THAN TO
CONVINCE
THEM THAT
THEY HAVE
BEEN FOOLED.”

~MARK TWAIN

