

Building Core Health

Dr Suzanne Humphries

2026

2014 Four part series on infant immunity

Neonatal Immunity : the Design



[https://odysee.com/\\$/playlist/3f539b497f38eea5a8d9f5cd65f8415c13e00480](https://odysee.com/$/playlist/3f539b497f38eea5a8d9f5cd65f8415c13e00480)

What happens when ?

Foundations and early stages.

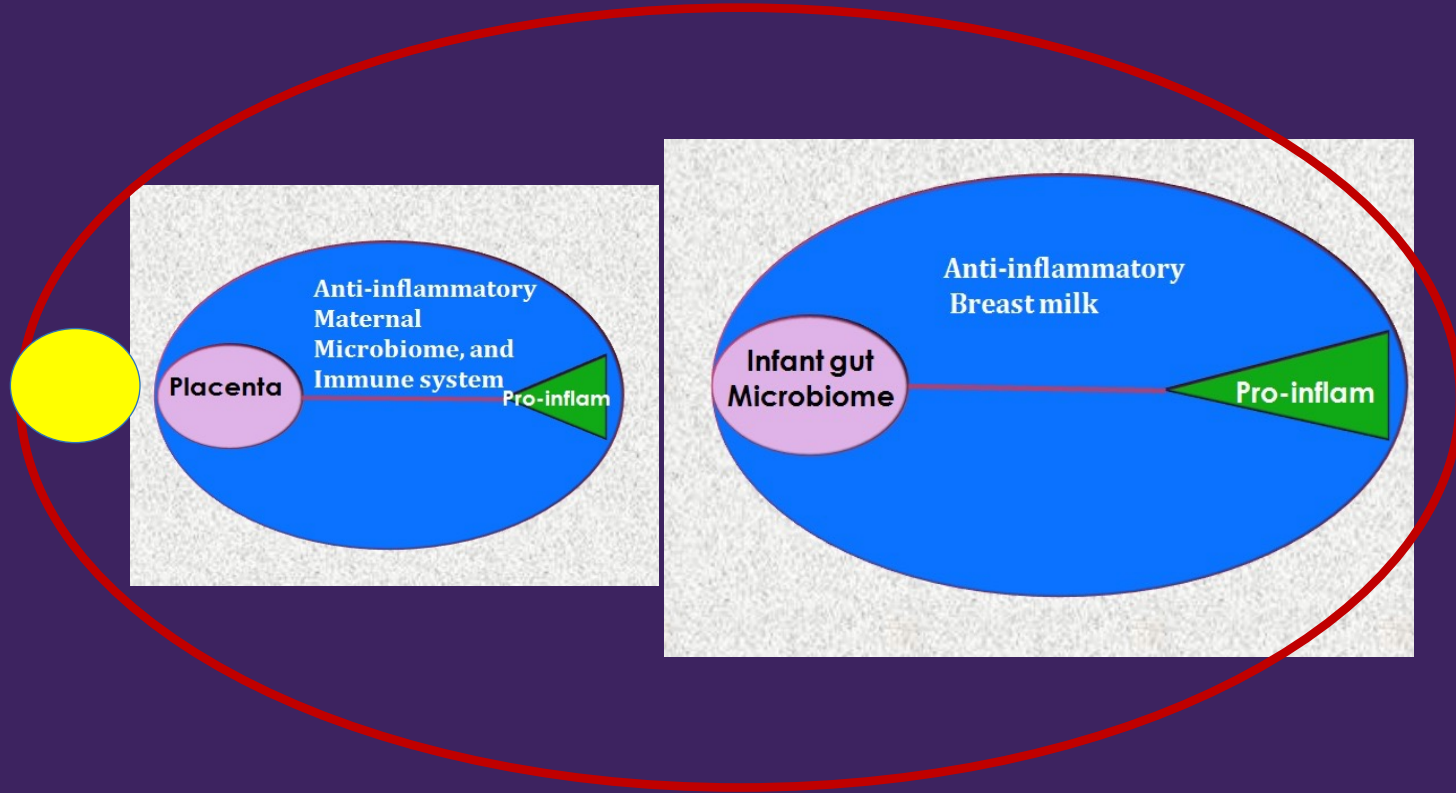




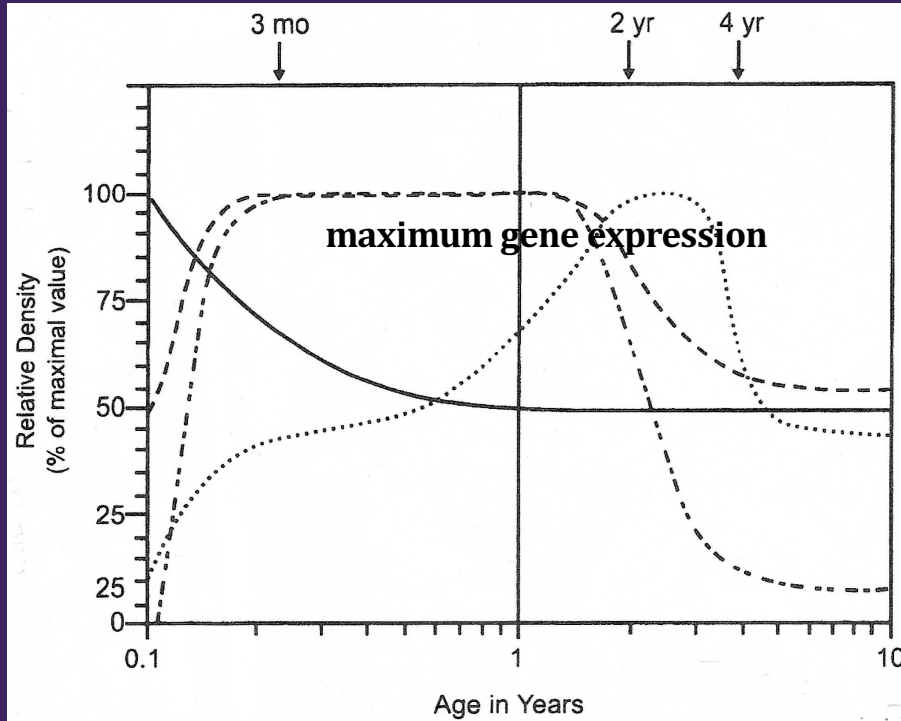
Lets look at what it takes to cultivate a healthy robust, non-vaccinated two year old....

Core foundation:

Three year “pregnancy”



Developmental periods in brain



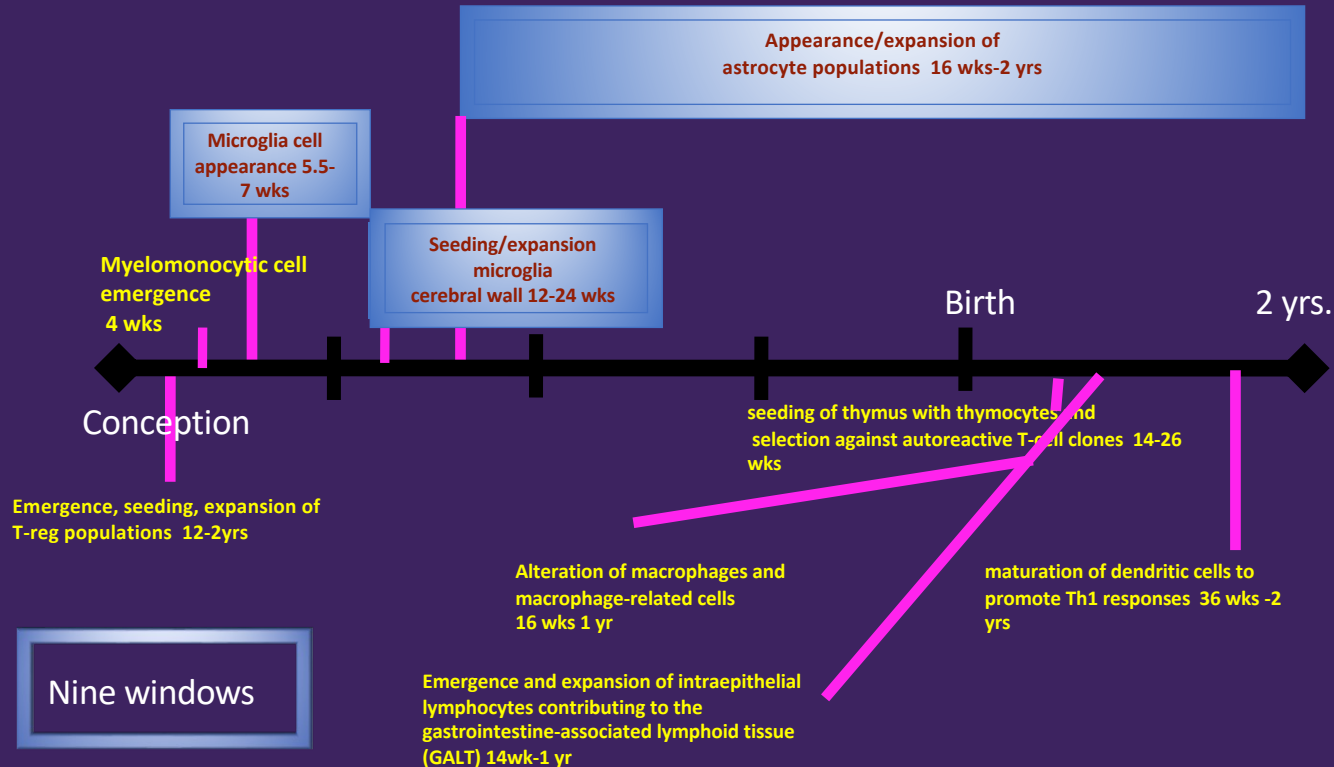
————cholecystinin-positive neurons
(satiety)

-----spine density/pyramidal neurons.
(ability to think)

•••••chandelier neuron cartridges.
(nerve excitation/muscle tone)

•••••dopamine axon terminals.
(motivational/reward related)

Developmental windows of immune maturation



From Womb to World: Exploring the Immunological Connections between Mother and Child

Cherayil 2024
PMID: 39172025

- “...any **event** that impacts maternal immunity can have an influence on pregnancy itself as well as on the developing fetal immune system”
- “Mother and offspring constitute a single **interconnected unit during pregnancy and for about 1 year after birth.**”

From Womb to World: Exploring the Immunological Connections between Mother and Child

Cherayil 2024
PMID: 39172025

- *“... the microbiota has profound effects on the development, phenotype and function of multiple immune cell populations.....*
- *Variations in the mother’s microbiota can have a significant impact on the offspring’s immune capabilities.”*

From Womb to World: Exploring the Immunological Connections between Mother and Child

Cherayil 2024
PMID: 39172025

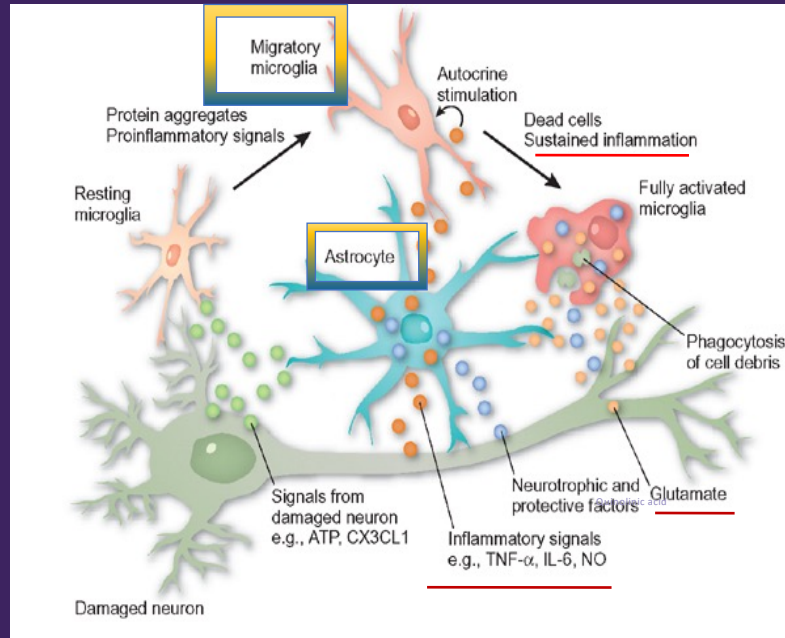
- Antibiotics in pregnancy can:
 - affect the offspring's immune capabilities or risk of infection and immune mediated disease
 - ... elevated risk of infection related hospitalization .
 - Risk increases with number of antibiotics used...
 - increased risk of asthma and atopic dermatitis

From Womb to World: Exploring the Immunological Connections between Mother and Child

Cherayil 2024
PMID: 39172025

- Effect of maternal immune activation of multiple cytokines on fetus is unknown.
- Nonspecific effects of pregnancy vaccines unknown.
- Consequences of maternal innate immune activation on offspring immunity “remains unexplored”

Cytokines and the brain



Cytokines play important roles in refinement of connections in the developing brain.

~ Garay 2010. PMID: 21423522

*“Microglia can be triggered into
a permanently primed or
sensitized state by early
infection or stress.”*

Patterson 2009. PMID: 19136031

Known Microglial triggers

- **Vaccination stimulation**
- **Vaccine components**
 - Aluminum
 - DNA/RNA/Protein frag
 - Mercury
 - MSG
- **Gut infections/imbalance inflammation.**

From Womb to World: Exploring the Immunological Connections between Mother and Child

Cherayil 2024
PMID: 39172025

- Tdap vaccines do not fully protect the mother
 - Decreases newborn's own immune response to subsequent pertussis vaccination as well as polio and pneumococcus vaccine. ("Blunting")
- *Impact on maternal microbiome and acquisition of **maternal micro-chimeric cells** "entirely unknown"*

How they arise and persist

During pregnancy, cells (and also extracellular vesicles) traffic across the placenta in both directions. Maternal cells that enter the fetus are present at very low frequency—typically far less than 1% of cells, often on the order of 1 in a million. They include immune cells (T cells, B cells, NK cells, monocytes/macrophages, granulocytes) as well as stem or progenitor cells that can differentiate into tissue-specific cell types. pmc.ncbi.nlm.nih.gov

These cells have been detected in many organs of the offspring, including bone marrow, thymus, spleen, lymph nodes, liver, lungs, heart, pancreas, kidney, adrenal gland, gonads, and even the brain. They can remain detectable into adulthood. pmc.ncbi.nlm.nih.gov

Biological roles

Research (mostly in mice, with supporting human data) indicates they are not just leftover “souvenirs”:

- They help shape the offspring's immune system, including promoting differentiation of certain immune cells and enhancing early-life resistance to some infections. [nature.com](#)
- A specific subset (LysM⁺ CD11c⁺ maternal cells) sustains long-term immunological tolerance to *non-inherited maternal antigens* (NIMAs)—the mother's antigens the child did not inherit genetically. This tolerance can influence later pregnancy outcomes in the next generation. [cell.com](#)
- Stem-like maternal cells may contribute to tissue integration or repair in some contexts.

The cycle of life....

- **Microbiome**

- Pregnancy/birth/breastfeeding
- (Stem Cells) present every stage

- Infant / Toddler
- Adolescent/child bearing age
- Elderly

European study

Molecular Fingerprinting of the Fecal Microbiota of Children Raised According to Different Lifestyles^{▽†}

Dicksved 2007
PMID: 17293501

In this population-based study, 90 children from three European countries were examined to determine the impact of lifestyle on the fecal microbiota. The study was designed to assess the impact of two **extreme** lifestyles that we hypothesized could impact the microbial composition in the gut: i.e., **an anthroposophic lifestyle (restricted use of antibiotics, greater consumption of fermented vegetables, etc.)** versus **living on a farm (greater consumption of farm milk, contact with animals, etc.)**. In previous studies, these lifestyles correlated with lower prevalence of allergies. Terminal restriction fragment length polymorphism (T-RFLP) was used to assess the bacterial composition in fecal samples since recent studies have shown that the majority of this community cannot be cultivated. The T-RFLP data were used to calculate richness and evenness of the fecal microbiota. **Children that were attending Steiner schools (anthroposophic children) had a significantly higher diversity of microbes in their feces than farm children, who in turn also had lower diversity than the control groups.** Specific primers were also used to focus on the *Lactobacillus*-like community (lactic acid bacteria [LAB]). Large differences were found in the LAB subpopulations in the sampled groups. In some children, the LAB subpopulation was dominated by a species that has not yet been cultivated.

Molecular Fingerprinting of the Fecal Microbiota of Children Raised According to Different Lifestyles^{▽†}

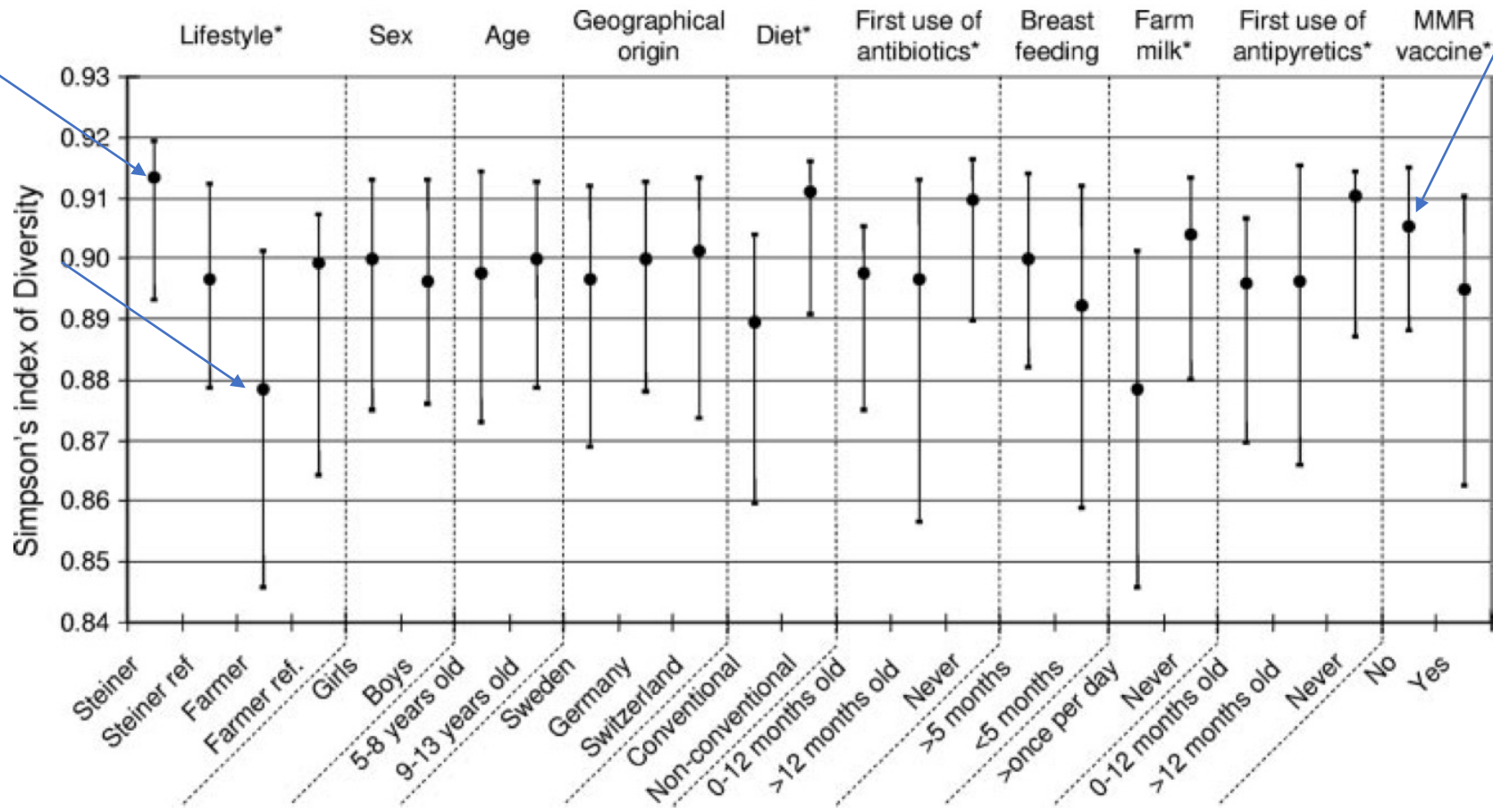
Dicksved 2007
PMID: 17293501

material). Farm children more frequently reported contact with pets and farm animals, and they consumed more home-grown or farm-produced foods compared to children in other groups. Steiner schoolchildren were breastfed for a longer period and consumed organically and/or biodynamically grown food products, as well as fermented vegetables, more often. They also received antibiotics, antipyretics, and MMR (measles, mumps, rubella) vaccinations to a lesser extent than the farm and reference children but were consequently also affected by measles infections more often.

Molecular Fingerprinting of the Fecal Microbiota of Children Raised According to Different Lifestyles[†]

Dicksved 2007
PMID: 17293501

parison between samples. When the different groups of children were compared with regard to the diversity of their fecal bacteria, some highly significant differences were observed. Foremost, Steiner schoolchildren had a higher diversity of fecal bacteria compared to farm children ($P = 0.0001$; Fig. 2), as exhibited by a larger number of total TRFs and higher evenness than those of the farm children, (average TRF numbers



Molecular Fingerprinting of the Fecal Microbiota of Children Raised According to Different Lifestyles^{▽†}

Dicksved 2007
PMID: 17293501

($P = 0.007$; Fig. 2). In addition, children who had never used antibiotics or antipyretics had a significantly higher diversity of bacteria than those who had used antibiotics ($P = 0.024$; Fig. 2) or antipyretics ($P = 0.031$; Fig. 2) during the first year of life. Children who had received MMR vaccinations showed lower diversity than those who had not received MMR vaccination

Go With Your Gut: The Shaping of T-Cell Response by Gut Microbiota in Allergic Asthma

Di Gangi 2020 PMID: 32760404

T CELL PLASTICITY AND GUT MICROBIOTA

During homeostatic periods, gut-microbiota and T-cells within the gut mucosa engaged profitable crosstalk capable of shaping the systemic immune response of the individual. T-cell-receptors are reactive to microbiota-derived antigens that are necessary for an adequate maturation of the immune system and to ensure proper colonization of the gut lumen. Heterogeneous

Go With Your Gut: The Shaping of T-Cell Response by Gut Microbiota in Allergic Asthma

Di Gangi 2020 PMID: 32760404

helper (Th) 2 responses, a complex network of immunological interaction driven by gut microbiota could modulate the final effector phase. Regulatory T cells are abundant in gastrointestinal mucosa and have been shown to be pivotal in AAS. The gut microbiota could also influence the activity of other T cell subsets such as Th9, Th17, and populations of effector/memory T lymphocytes. Furthermore, gut microbiota metabolites drive the hematopoietic pattern of dendritic cells and ameliorate lung Th2 immunity in AAS models. The administration of probiotics has shown conflicting results in AAS,

Go With Your Gut: The Shaping of T-Cell Response by Gut Microbiota in Allergic Asthma

Di Gangi 2020 PMID: 32760404

are noted in germ-free mice, and the degree of systemic immune perturbation of a single macrolide pulse is relatively modest, but it is strong enough to induce an imbalance in local Th17 immunity, leading to long-lasting microbiome alterations (23). It would be of great interest to explore T-cell development in a similar model challenged with HDM or OVA.

Since transient gut dysbiosis is relatively common in children due to the widespread use of antibiotics (24), it is possible

Review

The Neonatal Immune System and Respiratory Pathogens

Colleen J. Sedney  and Eric T. Harvill * 

Sedney 2023 PMID: 37375099

-

- *“We have previously promoted the view of the mammalian immune system as a form of microbiome management. . . .*
- *Neonate must rapidly and efficiently determine the benefits and risks of reaction to many of each [microbe/pathogen] nearly simultaneously.”*

Review

The Neonatal Immune System and Respiratory Pathogens

Colleen J. Sedney  and Eric T. Harvill * 

Sedney 2023 PMID: 37375099

-

- “We propose a view of neonatal immunity as **not a flawed version of adult immunity**, but as a system evolved to face this particular challenge, very different from that of an adult.”
- “...**viewing the neonatal immune system as an incomplete version of the adult’s is missing its critical and unique challenges**. The most immediate challenge is the exit from the near-sterile uterus, which represents a unique transition which suddenly bombards the immune system with huge numbers **and a diversity of microbes, each expressing thousands of antigens and many of which immediately begin to establish permanent residence in intimate contact with all body surfaces.**”

The Neonatal Immune System and Respiratory Pathogens

Colleen J. Sedney  and Eric T. Harvill * 

Sedney 2023 PMID: 37375099

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- *The emerging view is that neonates have a distinctly different immune response that is well-adapted to deal with unique immunological challenges of the transition from a relatively sterile uterus to a **microbe-rich world**, tending to suppress potentially dangerous inflammatory responses.*
- *increasing evidence suggests that newborns and neonates have a quite effective immune system that is very different from that of adults...*

Review

The Neonatal Immune System and Respiratory Pathogens

Colleen J. Sedney  and Eric T. Harvill * 

Sedney 2023 PMID: 37375099

*Therefore, during this transition from near-sterile fetal to microbe-rich neonatal environment, the immune system is evolved to respond to novel antigens primarily **with anti-inflammatory TH2 responses** to prevent unnecessary inflammation which can severely harm the infant.*

How does the infant defend itself?

- The mother is key while baby's B cells are maturing.
- Baby is not making IgG and IgA robustly.
- **Maternal IgG is transferred across the placenta and secretory IgA plus other factors in breast milk** this contributes to antibody-mediated defense against some extracellular bacteria and toxins.

Review

The Neonatal Immune System and Respiratory Pathogens

Colleen J. Sedney  and Eric T. Harvill * 

Sedney 2023 PMID: 37375099

-

Pertussis vaccines in adults do not prevent asymptomatic nasal carriage and transmission, and therefore, infants are often infected by asymptomatic caregivers. . . In addition to imperfect vaccines, antibiotic treatments have limited effect after the presentation of diagnostic symptoms. Therefore, more information on the effects of B. pertussis on the neonatal immune system is required to develop the most appropriate treatments and vaccines.

Drugs: What could possibly go wrong?



Rapid microbiome restructuring associated with medical exposure in remote Amazonian Indigenous communities

Sun 2026 PMID: 42167245

- Bolivar State, Caura River basin
- Yek'wana and Yanomami-Senema people
- 6 very remote villages, no previous medical contact
- 1 less remote village, quarterly visits, antibiotics, antifungals, antiparasitic drugs, analgesics and vaccines.

Rapid microbiome restructuring associated with medical exposure in remote Amazonian Indigenous communities

Sun 2026 PMID: 42167245

- Remote villages : *“To our knowledge, no additional organized groups visited these remote communities between sampling points, and interactions with visitors were brief and centered on medical activities, without food distribution.*
- **No non-local food sources were brought in** or distributed during medical campaigns, and subsistence practices based on hunting, fishing, gathering, and household gardening remained unchanged.
- No additional organized groups visited the remote villages between sampling points.”

Rapid microbiome restructuring associated with medical exposure in remote Amazonian Indigenous communities

Sun 2026 PMID: 42167245

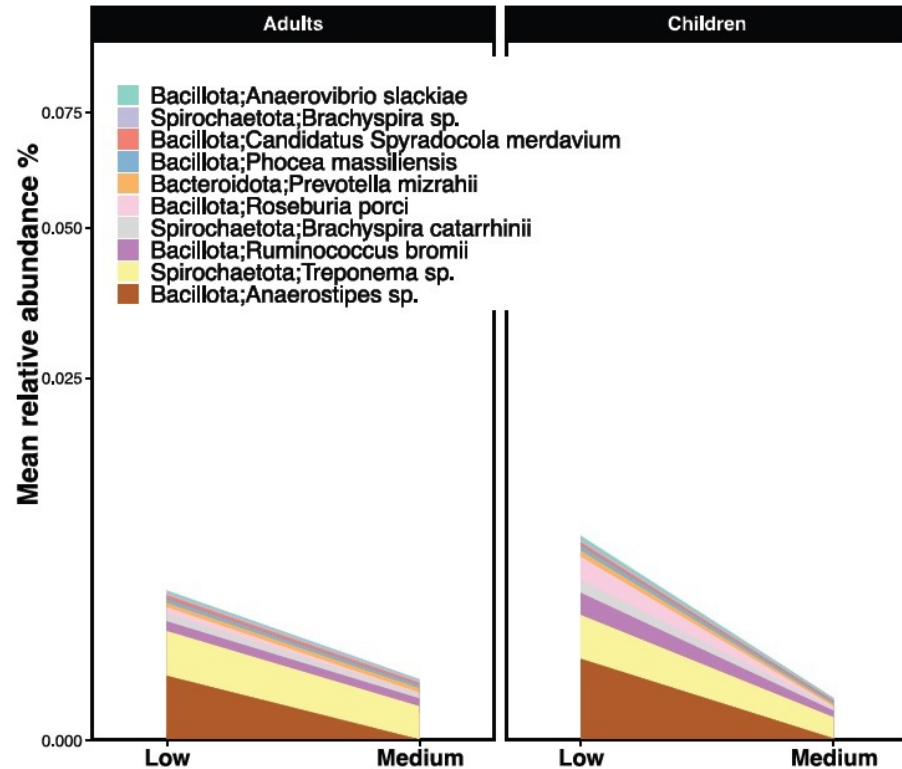
- Sampling: October 2015, February 2016
- 1,506 samples: 200 children 75 adults,
- 97 samples from same individuals both time points
- Fecal, oral, nasal and skin swabs for DNA extraction for metagenomics sequencing

Rapid microbiome restructuring associated with medical exposure in remote Amazonian Indigenous communities

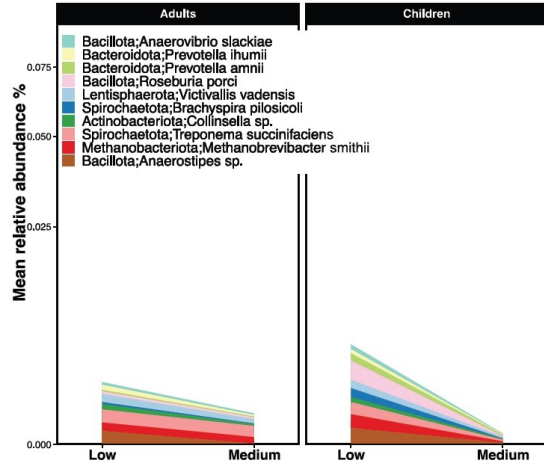
Sun 2026 PMID: 42167245

- Urban lifestyle practices characterized by strong antimicrobial measures, disrupt the transmission and colonization of human-coevolved microbe within the microbiota. **This interference affects developmental programming**
- “This natural experiment, ... provides a unique and early view of microbiome transitions that are **typically obscured by many confounded elements of industrialization.**”

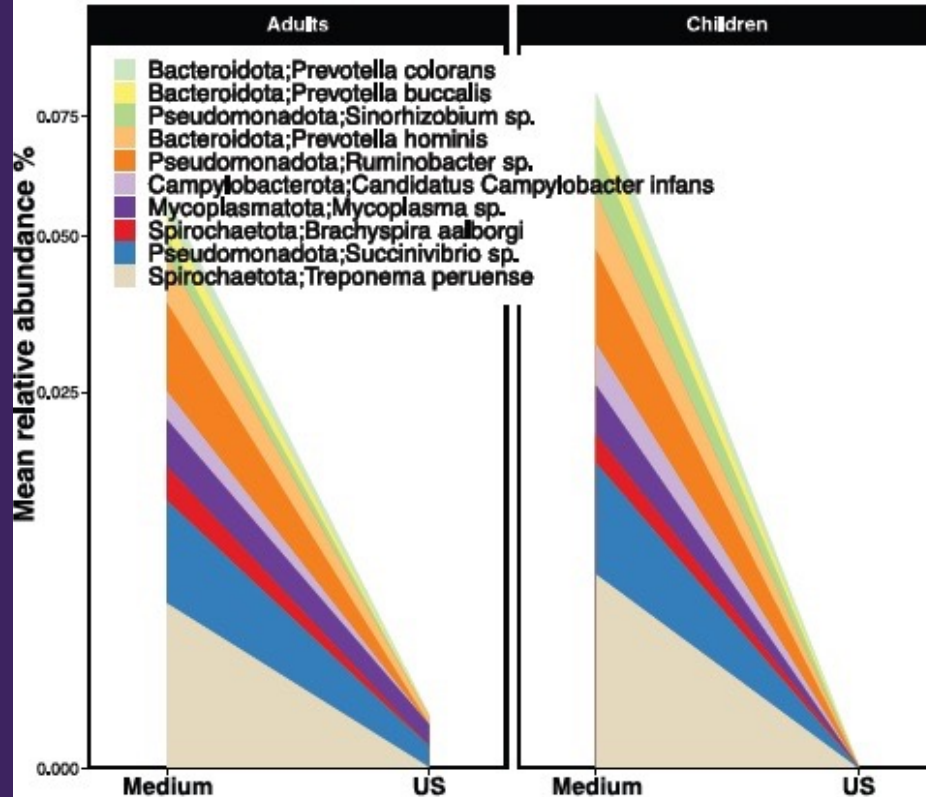
D 2015 low vs. medium



E 2016 low vs. medium



F 2016 medium vs. USA



Not just the Amazon, but for us too.

- Disruption of microbiome affects developmental programming
- Influences gene expression
- Contributes to immune, metabolic, neurodevelopmental diseases, Ab resistance
- Heightened risk of chronic immune-metabolic diseases.

RESEARCH

Antibiotics Save Babies' Lives but Affect Their Gut, Lungs, and Ability to Fight Infection

Apr. 21, 2026



Study shows changes have a long-term impact on lung immune cells

- A new study found early antibiotic exposure, while essential for saving newborns' lives, changes babies' gut microbiome.
- This disruption "travels" from the gut to the lungs and rewires the immune system by altering how the lungs' immune cells function.
- These immune cell changes didn't fade with time, persisting into young adulthood in mice.
- The research suggests a need to develop strategies to protect a baby's immune system during necessary antibiotic treatment.



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Mucosal Immunology

journal homepage: www.elsevier.com/mi



Article

Single cell atlas of lung-resident innate lymphoid cells shows impact of age and dysbiosis on epigenetic and transcriptomic programming

Bonfield 2026
PMID: 41554380

Madeline Bonfield^{a,b,c,d} , Jerilyn Gray^{b,c} , Alicia Ramiriqui^{b,c},
Joseph Stevens^{a,b,c,d,e} , Uday Pandeyⁿ, Laura Canaday^{d,f} , H.Alex Feldman^{d,e,f} ,
William J Zacharias^{a,c,d,e,g,h} , Leah Kottyan^{a,d,e,f,i} ,
Stephen N. Waggoner^{a,d,e,f,j} , Hitesh Deshmukh^{a,b,c,d,e,k,l,*} ,
Shelby Steinmeyer^m 

- (ILC) development and function in the neonatal lung **remain incompletely defined**. ILCs are critical mediators of early-life innate immune responses in the lung
- mechanisms that drive ILC development and function, especially in the neonatal lung, **remain an area of active research**
- **knowledge gaps** in the effects of early-life dysbiosis on pulmonary ILCs.

So where do we start?

Stay away from the
conventional medical
profession unless
absolutely necessary.



Covid jab

- If a pregnant mother is injected, what happens?



Sars-cov-2 mRNA vaccines

mRNA-1273 is placenta-permeable
and immunogenic in the fetus

Chen 2025
PMID: 40104112

- Moderna: “Generally recognized as safe” – yet not tested on pregnant women.
- LNP-mRNA vaccines cross placenta, into cord blood.
- LNP-mRNA cross into Breastmilk

COVID-19 Vaccine mRNA Biodistribution: Maternal and Fetal Exposure Risks

Zhong 2024 PMID: 39392236

- Pfizer – crosses placenta.
- Pfizer mRNA found in breastmilk
- Three previous trials used mismatched probes and primers.
- Biodistribution to placenta **not included in Pfizer's animal biodistribution studies** to EMA in 2020

Zhong 2024 PMID 39392236

COVID-19 Vaccine mRNA Biodistribution: Maternal and Fetal Exposure Risks

Zhong 2024 PMID: 39392236

- “our study” used correct probes and primers for vaccine sequence:
- vaccine mRNA distributes systemically to placenta, cord blood and makes spike in placenta.
- Animal studies = functional mRNA delivered to fetal liver, lung intestines.
- Animal studies = mRNA functional after being delivered to target cells in exosomes.

Zhong 2024 PMID 39392236

COVID-19 Vaccine mRNA Biodistribution: Maternal and Fetal Exposure Risks

Zhong 2024 PMID: 39392236

- the existence of multiple open reading frames overlapping sars cov-3 mRNA in the vaccine “can lead to the translation of different proteins from a single gene. ... consequently the existence of these ORFS” ... might result in the synthesis of unwanted proteins which **“could potentially trigger alterations in the placental transcriptome leading to possible unintended consequences”**

Zhong 2024 PMID 39392236

COVID-19 Vaccine mRNA Biodistribution: Maternal and Fetal Exposure Risks

Zhong 2024 PMID: 39392236

Despite the increasing evidence supporting the safety and efficacy of COVID-19 mRNA vaccines for pregnant women and their foetuses, several limitations and knowledge gaps persist in our current understanding.

Zhong 2024 PMID 39392236

COVID-19 Vaccine mRNA Biodistribution: Maternal and Fetal Exposure Risks

Zhong 2024 PMID: 39392236

- “Our understanding of mRNA deliver during pregnancy is still developing.”

Or as another article put it, “shrouded in clouds”

Zhong 2024 PMID 39392236

COVID-19 Vaccine mRNA Biodistribution: Maternal and Fetal Exposure Risks

Zhong 2024 PMID: 39392236

Although data indicates that mRNA vaccination during pregnancy is safe, it is crucial for pregnant women to engage in informed discussion with their healthcare providers regarding the benefits and potential risks associated with maternal mRNA vaccines

Zhong 2024 PMID 39392236

2020 hematopoietic progenitor stem cells

Review

> [Leukemia](#). 2020 Jul;34(7):1726-1729. doi: 10.1038/s41375-020-0887-9.

Epub 2020 Jun 1.

SARS-CoV-2 infection and overactivation of Nlrp3 inflammasome as a trigger of cytokine "storm" and risk factor for damage of hematopoietic stem cells

Mariusz Z Ratajczak ^{1 2}, Magda Kucia ^{3 4}

Affiliations + expand

PMID: 32483300 PMCID: [PMC7262681](#) DOI: [10.1038/s41375-020-0887-9](#) [🔗](#)

2021 hematopoietic stem progenitor cells

➤ [Leukemia](#). 2021 Oct;35(10):3026-3029. doi: 10.1038/s41375-021-01332-z. Epub 2021 Jun 23.

An evidence that SARS-Cov-2/COVID-19 spike protein (SP) damages hematopoietic stem/progenitor cells in the mechanism of pyroptosis in Nlrp3 inflammasome-dependent manner

Magdalena Kucia ^{1 2}, Janina Ratajczak ³, Kamila Bujko ⁴, Mateusz Adamiak ⁴,
Andrzej Ciechanowicz ⁴, Vira Chumak ⁴, Katarzyna Brzezniakiewicz-Janus ⁵,
Mariusz Z Ratajczak ^{6 7 8}

Affiliations + expand

PMID: 34163002 PMCID: [PMC8219510](#) DOI: [10.1038/s41375-021-01332-z](#) [🔗](#)

2022 cord blood hematopoietic progenitor stem cells

Skewed fate and hematopoiesis
of CD34⁺ HSPCs in umbilical cord
blood amid the COVID-19 pandemic

Estep 2022
PMID: 36406860

The limited numbers of CD34⁺ cells in the UCB of the vaccinated donor groups were the greatest impediment, especially for the hematopoiesis differentiation assays, transcriptomics at the single cell level, as well as all statistical analyses. The use of freshly isolated MNCs for humanization following depletion of incoming T cells by anti-CD3 antibodies⁶⁷ or pre-expanding CD34⁺ cells ex vivo^{68,69} would be required to assess the impact of SARS-CoV-2 vaccination on UCB CD34⁺ cells and hematopoiesis in future experiments. These studies should serve as a touchstone for understanding these potential impacts and provide insight about how the long-term side effects of SARS-CoV-2 infection and/or vaccination in mothers and even neonates affect future human immune health.

Skewed fate and hematopoiesis of CD34⁺ HSPCs in umbilical cord blood amid the COVID-19 pandemic

Benjamin K. Estep,¹ Charles J. Kuhlmann,¹ Satoru Osuka,⁴ Gajendra W. Suryavanshi,⁵ Yoshiko Nagaoka-Kamata,² Ciarria N. Samuel,¹ Madison T. Blucas,¹ Chloe E. Jepson,¹ Paul A. Goepfert,³ and Masakazu Kamata^{1,6,*}

Estep 2022
PMID: 36406860

SUMMARY

Umbilical cord blood (UCB) is an irreplaceable source for hematopoietic stem progenitor cells (HSPCs). However, the effects of SARS-CoV-2 infection and COVID-19 vaccination on UCB phenotype, specifically the HSPCs therein, are currently unknown. We thus evaluated any effects of SARS-CoV-2 infection and/or COVID-19 vaccination from the mother on the fate and functionalities of HSPCs in the UCB. The numbers and frequencies of HSPCs in the UCB decreased significantly in donors with previous SARS-CoV-2 infection and more so with COVID-19 vaccination via the induction of apoptosis, likely mediated by IFN- γ -dependent pathways. Two independent hematopoiesis assays, a colony forming unit assay and a mouse humanization assay, revealed skewed hematopoiesis of HSPCs obtained from donors delivered from mothers with SARS-CoV-2 infection history. These results indicate that SARS-CoV-2 infection and COVID-19 vaccination impair the functionalities and survivability of HSPCs in the UCB, which would make unprecedented concerns on the future of HSPC-based therapies.

Skewed fate and hematopoiesis of CD34⁺ HSPCs in umbilical cord blood amid the COVID-19 pandemic

Estep 2022
PMID: 36406860

infection and/or vaccination on the fate and hematopoietic abilities of CD34⁺ cells in the UCB thereof.

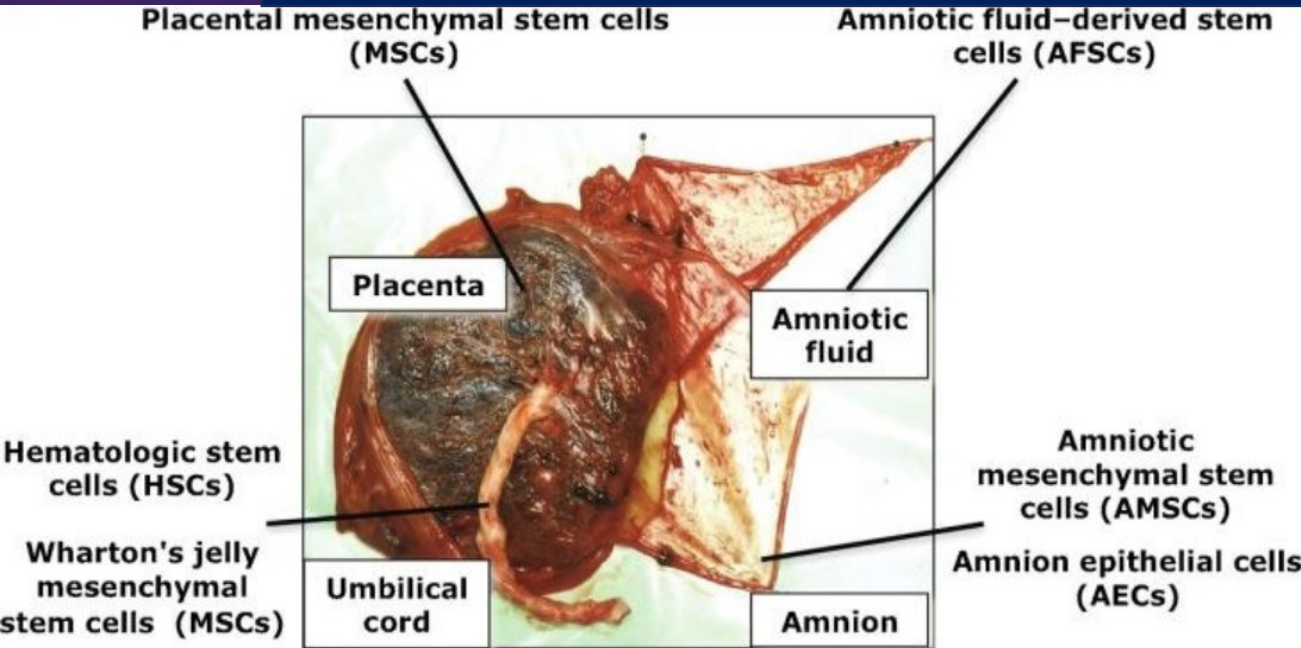
Reduced CD34⁺ cell frequencies and thus lower CD34⁺ cell numbers were observed in the UCB from the non-vaccinated but previously infected donor group and even more so in the vaccinated donor group, which was attributed to the induction of apoptosis. Furthermore, these reductions in CD34⁺ cell numbers and frequencies correlated with the timing of the second-vaccination in donors the numbers and frequencies inversely correlated with the period after the vaccination until delivery, indicating that factors causing these damages are maintained over the gestation period. In addition, the CD34⁺ cells, which would be residual cells following apoptosis, showed skewed hematopoiesis profiles, indicating that previous SARS-CoV-2 infection, and likely vaccination based on the observed trends, interferes not only with the fate of CD34⁺ cells but also the hematopoietic abilities, phenotype, and survivability of populations thereof, which could result in a shortage of available CD34⁺ HSPCs from cord blood banking, processing for use toward HSPC-based therapies, as well as unpredictable hematological issues in HSPC recipients.

Question

- What are the consequences for the baby of vaccinated mothers as a result of reduced numbers of hematopoietic stem cells, and damaged stem cells?

lower MNC numbers in the UCB. At present, it is unknown how these damages on CD34⁺ cells are impactful to the neonate immune system for example, for fighting other pathogenic viruses, bacterial infections, or cancerous cells, as well as for maintaining homeostatic hematopoiesis, proper humoral and cellular immunities.

Neonatal stem cells are all anti-inflammatory and immune-dampening to the young infant.



<http://www.medscape.com/viewarticle/778507>

Cord blood is the baby's blood

- It is identical in every way to the baby's blood. It is separate to the mother and identical to the baby's blood. It is the baby's blood. **Don't clamp the cord...**
- 33% of the blood left in placenta and cord was meant for the baby. Not giving it, deprives baby of 33% of it's blood. Like a hemorrhage
- Akin to 1.6 l liters loss in a 70kg person, which is a major hemorrhage. 40% is considered life threatening.
- Let's also think about this in terms of CD34+ stem cells.

Consequences of stem cell deletion?

- Stem cells orchestrate organ development. Covid shots increase miscarriage rate. Even Fauci admitted it.
- Immune system cell damage
 - What are consequences of giving all these vaccines in pregnancy? If fetus incurred stem cell deletion from a covid jab to mother.
- Unviable fetus, immune delays/damage CD34 (Estep), the future?
 - CD34 is a well-established surface marker for immature hematopoietic stem cells (HSCs) and progenitors in humans. These cells generate all mature blood lineages (erythroid, myeloid, lymphoid, megakaryocytic) needed for oxygen transport, immunity, hemostasis, and overall fetal growth.

From Blood to Milk

Milk

- 100 billion immune cells/day
- HAMLET
- sIgA
- Lactoferrin
- Lysozyme
- α / β defensins
- Stem cells
- miRNA
- mRNA
- IL-7
- Erythropoietin
- Soluble CD14
- Cytokines

- Anti-oxidants
- Gangliosides
- Oligosaccharides
- Osteoprotegerin
- Pre and pro biotics

- Fat
- Protein
- Carb
- Vitamins
- LCFA
- Growth factors

Biodistribution of RNA Vaccines and of Their Products: Evidence from Human and Animal Studies

Pateev 2024

PMID: 38255166

BNT162b2 or mRNA 1273	Healthy lactating individuals (first/second dose)	Humans	+ breast milk (up to 48 h after vaccination, only in ~50% of subjects)	[45,46]
BNT162b2 or mRNA 1273	Healthy lactating individuals (first/second dose)	Humans	– breast milk	[47]
BNT162b2	Healthy lactating individuals (first/second dose)	Humans	+ breast milk (up to 3 days after vaccination, only in ~10% of subjects)	[48]

the tested samples was 2 ng/mL within 1–3 days after the vaccination. Thus, vaccine RNA is indeed capable of crossing the blood–breast milk barrier, but the amounts of detected RNA are low and are eliminated several days after vaccination. These results highlight the need for additional research to better understand this process and its clinical relevance.

Biodistribution of RNA Vaccines and of Their Products: Evidence from Human and Animal Studies

Pateev 2024

PMID: 38255166

was found in breast milk but no later than 48 h after the vaccination. The concentration of vaccine mRNA among the women varied from 1.3 to 16.78 pg/ μ L, after normalization to starting breast milk volume (mL). It is worth mentioning that in a later work, the same authors quantified vaccine mRNA in the same samples but by a more accurate method: droplet digital PCR [46]. The concentration of vaccine mRNA varied between 1544 and 7605 copies/mL. After 48 h, vaccine mRNA in breast milk was not detectable either, confirming the previous findings. Despite the similarity of the results obtained in the first and

Skewed immune system?

💣 Potential outcomes apply to all vaccines.

- Mother gets vaccinated. Fetus is affected too.
- Breastmilk is affected.
- Child has changed immune system (germinal centers of changed) which does not revert to normal

Keeping healthy

- Avoid vaccines in pregnancy and infancy
- Natural birth
- Human milk to 2 years
- Whole food balanced diet low in carbs
- Sunshine on body
- Understand fever
- No sunglasses
- Knowing the infections and relevant treatments.
- Knowing when you need help. Find a TRUSTED medical provider
- Grounding
- Avoid blue light
- Avoid EMF

why?

Because typical indoor lighting is orders of magnitude dimmer than
[Show more](#)



Rusty ⚡ Solar Powered 🌞🌊 @ze_rusty · Jul 27



Your retina is loaded with melanin and iron.

Blue light excites both, driving reactive oxygen species like superoxide.

...

Necessary items

- Vit A for measles
 - CLO
- Vit C for just about everything
 - <https://drsuzanne.net/sodium-ascorbate-vitamin-c-treatment-of-whooping-cough/>
- Outdoors and in sun whenever possible (Vit D pills not the same)
- Circadian match
- Eat real food, high in healthy fat, protein, low sugar (always natural)

Keep these products in your house

➤ Vitamin C

- Sodium ascorbate crystalline
- Liposomal

➤ Colloidal silver 500 PPM

➤ Bentonite clay

➤ Activated charcoal

➤ Basic homeopathy kit

➤ “Dr Mom” ear scope

➤ Nebulizer (type that plugs into the wall, not handheld mini) if any respiratory issues

➤ Hydrogen peroxide food grade 3% or higher

➤ Red light/infrared heating pad

➤ May need Vitamin D or CLO (purchase when needed to keep fresh supply)

➤ Probiotics (lacto and bifido)

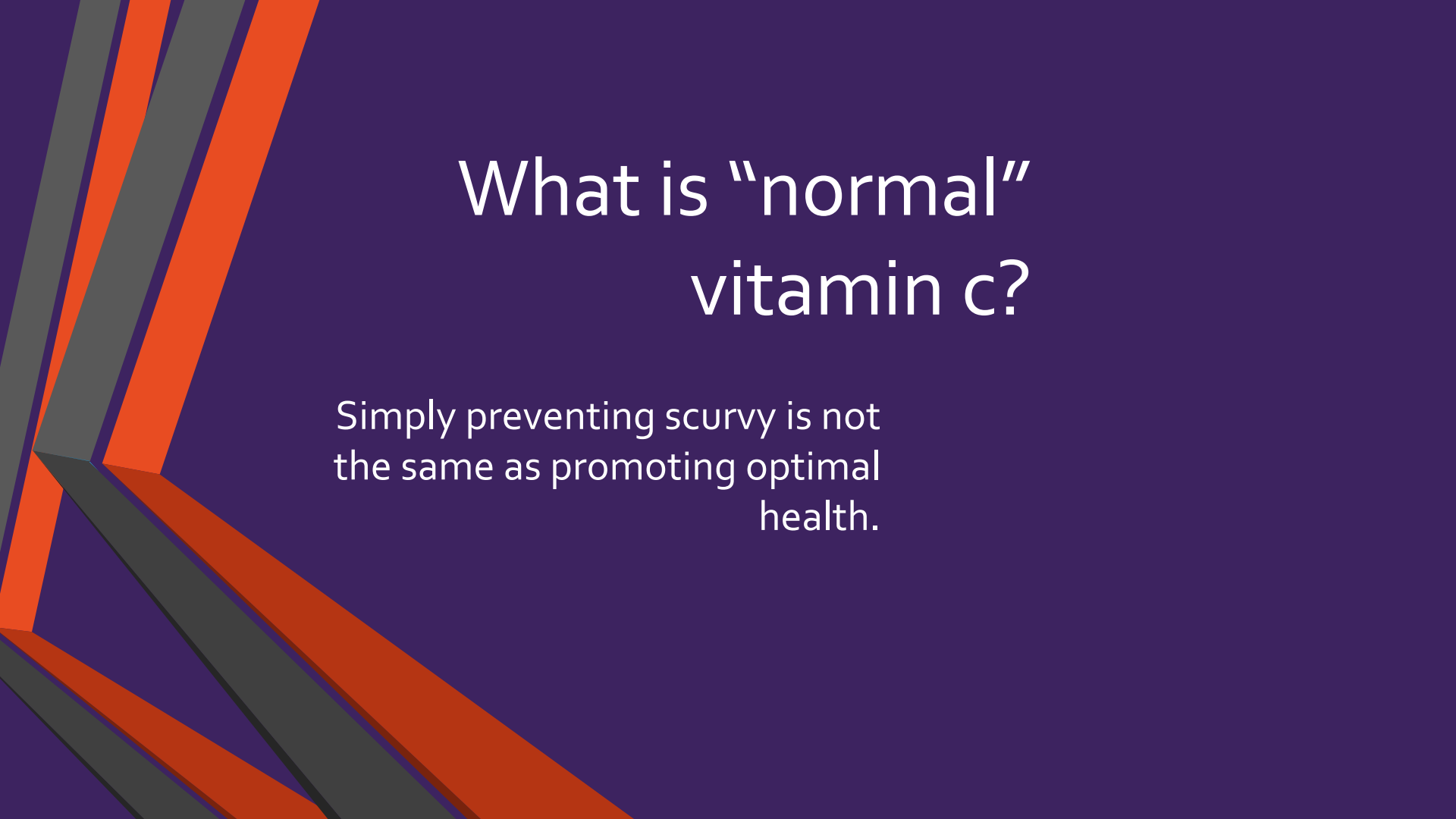
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Is there a fundamental key to staying healthy?



Yes

Vitamin C



What is “normal” vitamin c?

Simply preventing scurvy is not
the same as promoting optimal
health.

Vitamin C Deficiency in a University Teaching Hospital

Runye Gan, Shaun Eintracht, MD, L. John Hoffer, MD, PhD

Lady Davis Institute for Medical Research, McGill University (R.G., L.J.H.) and Department of Diagnostic Medicine (S.E.), Jewish General Hospital, Montreal, CANADA

Key words: ascorbic acid, vitamins, supplementation, scurvy

Objectives: There is almost no information regarding the vitamin C status of patients treated in Canadian and American hospitals. We determined the prevalence and predictors of vitamin C deficiency in patients hospitalized on the acute-care wards of a Canadian teaching hospital, and tracked their plasma vitamin C concentrations while they were there.

Methods: This was a population-based cross-sectional and time course survey of 149 medical patients shortly after admission to a university teaching hospital. The procedure for sample handling, storage and analysis was validated by measuring the vitamin C concentrations of a reference sample of 141 presumably well nourished people and comparing the results with published norms.

Results: In keeping with published norms, 13% of people in the reference group had a subnormal vitamin C concentration ($<28.4 \mu\text{mol/L}$) and 3% were vitamin C deficient ($<11.4 \mu\text{mol/L}$). By contrast, 60% of hospitalized patients had a subnormal vitamin C concentration and 19% were deficient. A history of inadequate nutrition or failure to use a vitamin supplement prior to admission, low serum albumin, and male sex predicted plasma vitamin C deficiency, whereas use of a vitamin supplement prior to admission was associated with adequate vitamin C status in hospital. In a second measurement, obtained in 52 patients after an average of 17 days in hospital, vitamin C status had not improved.

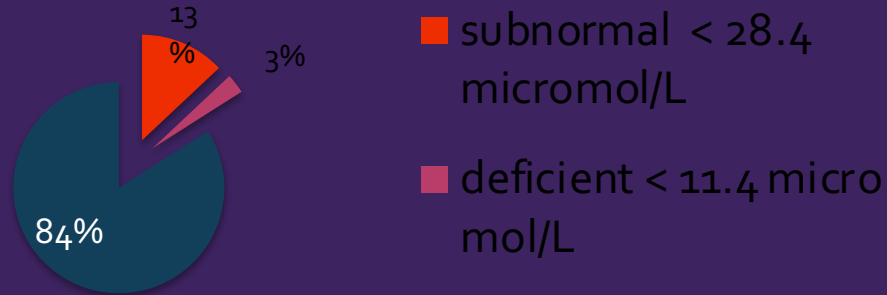
Conclusions: Vitamin C deficiency is prevalent and sustained in patients in a Canadian teaching hospital. The abnormality can be prevented by providing a diet sufficient in vitamin C or by prescribing a multiple vitamin tablet.

Gan 2008.

PMID: 18838532

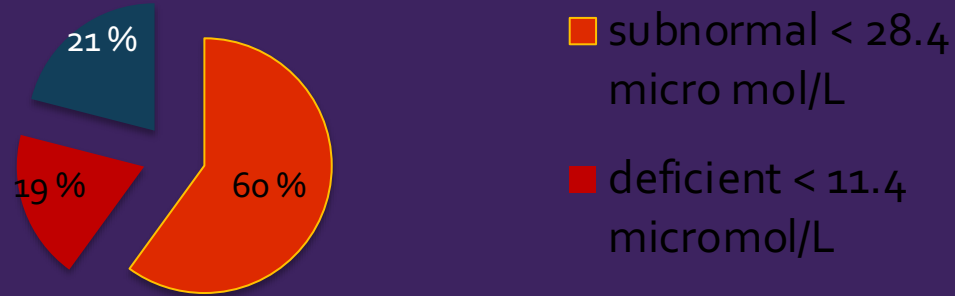
Are people getting enough vitamin C?

Canada
Normal Reference Group/ Outpatients
N= 141



Gan 2008. PMID: 18838532

Admission Day Canada Hospital Patients N=149



"The majority of patients had subnormal plasma vitamin C concentrations, and nearly one in five had a plasma vitamin C concentration compatible with scurvy."

Scurvy and vitamin C deficiency in an Australian tertiary children's hospital

Carolyn van Heerden^{1 2 3}, Daryl R Cheng^{1 2 3 4}, Sarah McNab^{1 2 3}, Rosemary Burgess³, Ashleigh Russell⁵, Yichun Wang⁵, Freya Bleathman¹, Isabella Maharaj¹, Jerry Zhang⁵, Marley Easterbrook⁵, Marie Papadopoulos⁵, Laila F Ibrahim^{1 2 3}

Affiliations + expand

PMID: 39031615 PMCID: [PMC11656666](#) DOI: [10.1111/jpc.16594](#)

Abstract

Aim: We aimed to investigate the frequency of vitamin C deficiency scurvy in the Australian paediatric context, describe cohorts at risk, and identify factors associated with development of symptoms in children with vitamin C deficiency. We also aimed to propose a management guideline for children with features of scurvy.

Method: A retrospective study was done at a tertiary paediatric hospital in Australia over a three-year period, from August 2019 to July 2022. Children from birth to 18 years old, whose vitamin C levels were low (<23 µmol/L), were included. Data extracted from hospital medical records included demographics, weight, co-morbidities, eating disorder diagnoses, clinical features, investigations and treatment. Descriptive statistics and risk statistics were performed.

Results: In a cohort of 887 patients who had their vitamin C levels checked, we identified 272 (31%) who had a vitamin C level <23 µmol/L. Of these, 13 (5%) were symptomatic of vitamin C deficiency and 19 (7%) may have been symptomatic. In patients with vitamin C deficiency, 248 (91%) had comorbidities, neurodevelopmental disorders being most common, and 176 (65%) had restricted eating. When the asymptomatic and symptomatic groups were compared, in the symptomatic group, there was a significantly lower vitamin C level and disordered eating related to autism spectrum disorders was more common.

Conclusion: In order to avoid delayed diagnoses and unnecessary investigations, clinicians should be familiar with symptoms of scurvy and perform a dietary assessment, vitamin C assay, and commence empiric vitamin C supplementation where appropriate.

Van Heerden 2024
PMID: 39031615



Article

Vitamin C Can Shorten the Length of Stay in the ICU: A Meta-Analysis

Harri Hemilä ^{1,*}  and Elizabeth Chalker ²

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Hemila 2019 PMID: 30934660

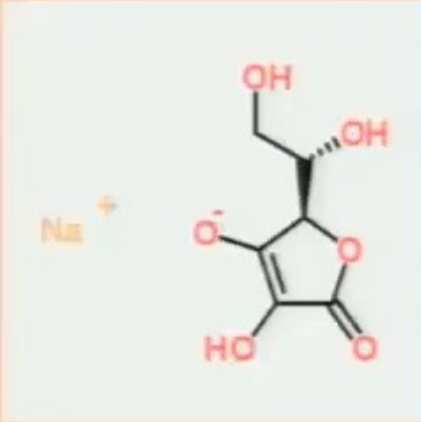
issue [82–89].

A survey of elderly Scottish patients hospitalized because of acute respiratory infections reported that 35% of patients had vitamin C plasma levels less than 11 $\mu\text{mol/L}$ [82]. One study in a hospital in Paris reported that 44% of patients had vitamin C plasma levels less than 6 $\mu\text{mol/L}$ [84], and in another hospital in Paris, 17% of patients had levels less than 11 $\mu\text{mol/L}$ [85]. Another survey, of patients with advanced cancer in a hospice, found that 30% had vitamin C plasma levels less than 11 $\mu\text{mol/L}$ [86]. In a Canadian university hospital, it was found that 19% of patients had vitamin C plasma levels less than 11 $\mu\text{mol/L}$ [87]. In a study of surgical patients in Australia, it was found that 21% had vitamin C plasma levels less than 11 $\mu\text{mol/L}$ [89]. Finally, in another study, 3% of cancer patients had clinical scurvy and vitamin C plasma levels less than 6 $\mu\text{mol/L}$ [83], and in a survey of 145 hospitalized elderly French patients, 18 had clinical symptoms of scurvy [88]. Although these estimates of prevalence for vitamin C deficiency should not be extrapolated directly to other hospital settings, they demonstrate that low vitamin C levels are common in some contexts.

Given this, it would seem reasonable to screen plasma vitamin C levels in hospital patients when appropriate and administer vitamin C to patients with particularly low levels, irrespective of whether vitamin C is believed to be effective for conditions other than scurvy.

Hemila 2019 PMID: 30934660

<https://odysee.com/@drsuzanneh:f?view=content>



VITAMIN C AND PREGNANCY

Live Aware
San Francisco 2017
Suzanne Humphries, MD



<https://odysee.com/@drsuzanneh:f?view=content>.



Lecture on Vitamin C to the Swedish Orthomolecular Society, Stockholm Sweden 2015.

Vitamin C the very foundation of life.

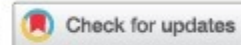
<https://www.tandfonline.com/doi/full/10.1080/10942912.2024.2327335>

INTERNATIONAL JOURNAL OF FOOD PROPERTIES
2024, VOL. 27, NO. 1, 493–515
<https://doi.org/10.1080/10942912.2024.2327335>



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Potential of ascorbic acid in human health against different diseases: an updated narrative review Not on pubmed

Anwar Ali^{a,b*}, Sakhawat Riaz^c, Waseem Khalid^{d,e}, Maleeha Fatima^c, Umber Mubeen^c, Quratulain Babar^f, Muhammad Faisal Manzoor^{g,h}, Muhammad Zubair Khalidⁱ, and Felix Kwashie Madilo^j

Potential of ascorbic acid in human health against different diseases: an updated narrative review

Ali 2024

Ascorbic acid (vitamin C) is the most crucial antioxidant for the body. The biochemical capabilities of ascorbic acid are still being studied. It acts as a cofactor for many enzymes participating in various physiological functions. This review presents how ascorbic acid is a cofactor for multiple enzymes involved in numerous human activities. Ascorbic acid protects the immune system, reduces allergic reaction severity and assists the fight against infections and other disorders. Ascorbic acid is metabolized by several procedures

Potential of ascorbic acid in human health against different diseases: an updated narrative review

Ali 2024

recycling, renal reuptake, and effective absorption in the digestive tract. The levels of ascorbic acid in tissues and serum may be precisely controlled by specific sodium-dependent vitamin C transporters or sodium vitamin C cotransporters (SVCTs).^[16] The differing ascorbic acid requirements of distinct organs and tissues are reflected in the level of ascorbic acid. Brain, adrenal, and pituitary gland tissues have higher ascorbic acid concentrations than other tissues. One of ascorbic acid's primary functions can be imitated by its potential to serve as a cofactor for a variety of regulatory and biosynthetic enzymes, including those involved in the production of catecholamines and peptide hormones.^[17]

infection. Hypovitaminosis C can trigger low mood symptoms. Numerous clinical symptoms might be linked to its severe deficiency.^[9] Prolonged and severe ascorbic acid deficiency can result in some specific clinical syndromes, such as scurvy, a medical illness that requires hospitalization. Ascorbic acid plays countless functions in providing optimal health as well as

Potential of ascorbic acid in human health against different diseases: an updated narrative review

Ali 2024

Ascorbic acid, one of the least expensive therapeutic alternatives, may prevent and cure infections, toxins, autoimmune disorders, and cancer development. Ascorbic acid is a marvel for people with aesthetic preferences amid its role as an anti-aging agent that maintains skin tone and texture.

ascorbate.^[43] Ascorbic acid is a vital nutrient because it is an antioxidant and a cofactor in many enzymatic processes. It plays a positive role in health by combating neurodegenerative syndromes, cardiovascular disease, obesity and autoimmune disorders (Figure 2, Table 2). Despite being significant, ascorbic acid uptake has not received adequate research^[44]

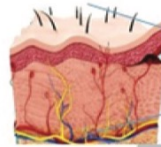
Table 2. Multiple effects of ascorbic acid against chronic diseases.

Administration	Diseases	Outcomes	Source
N.A	HIV-infected subjects	High oxidative stress in hospitalized HIV-infected adults; ASC ($p < .0001$) and albumin ($p < .01$) were lower in HIV-patients relative to controls.	[48]
Not applicable (N.A)	Infection diseases	Low levels of ASC were proportional to infection disease severity	[49]
Intravenous administration	COVID-19	Large doses of ASC (10,000–20,000 mg/d) led to a shorter mean hospital length of stay compared with untreated patients with COVID-19 and no incidences of death	[50]
High-dose intravenous administration	Advanced cancer	Improved QoL in cancer patients	[51]
N.A	Hepatitis virus C	Oxidative stress was independently associated with recurrence of hepatitis virus C infection.	[52]
Intravenous administration	Metastatic and node-positive pancreatic cancer	Data suggested pharmacologic ascorbate administered concurrently with gemcitabine were well-tolerated. Initial data from this small sampling suggested some efficacy.	[53]
High-dose intravenous administration	Advanced cancer patients	Ascorbic acid administered i.v. at 1 g/min for 4 consecutive days/week for 4 weeks produced up to 49 mM ascorbic acid in patient's blood and was well tolerated. The recommended dose for future studies is 70–80 g/m ²	[54]
Oral administration	HIV	Exogenous antioxidant supplementation with ACS did not increase the antioxidant status in patients with HIV	[52]
Intravenous administration	Metastatic pancreatic cancer	The initial safety data did not reveal increased toxicity with the addition of ascorbic acid to gemcitabine and erlotinib in pancreatic cancer patients.	[54]
Oral administration	Diabetic patients	ASC increased HDL cholesterol and reduced systolic and diastolic blood pressure	[55]
Intravenous administration	Acute and chronic viral infectious	Protective effects with improvement of oxidative damage	[56]
Oral administration of orange juice	Hepatitis C under antiviral therapy	The serum levels of total cholesterol, LDL-cholesterol, c-reactive protein (CRP) and parameters of oxidative stress decreased in patients receiving orange juice. Moreover, alanine aminotransferase (AST) levels decreased significantly after oral administration of orange juice.	[57]
Oral administration	Patients with CVD	ASC prevented decline in endothelial function during sitting	[58]

Ascorbic Acid effects

Ascorbic Acid effect on skin

- Supports epithelial barrier against pathogens
- Protects against environmental oxidative stress
- UV induced oxidative stress resistance



Ascorbic Acid and liver

Increase the secretion of high molecular weight adiponectin (its anti-inflammatory, anti-fibrotic, and antioxidant effects) from human hepatocytes and adipocytes which regulate glucose levels, lipid metabolism, and insulin sensitivity.

Gut Microbiota

- Reduce Redox Potential
- Increase Positive Microbial diversity
- Increase SCFA production

CNS

- Savenging reactive oxygen and nitrogen species
- Encourage the growth of myelin in Schwann cells
- Synthesis of neurotransmitters, neuropeptides, carnitine, collagen

Ascorbic Acid And CVD

- lower heart disease risk factors, including high blood levels of LDL (bad) cholesterol and triglycerides.
- Prevent oxidative damage of heart cells

Ascorbic Acid Effect on Lungs

- Vitamin C shows anti-viral responses and a reduction in viral titres in the lung
- enhances lung epithelial barrier function

Ascorbic Acid in Colorectal cancer

- Boosts the effect of chemical therapies
- Induces **apoptosis** of colon cancer cell line, HCT-8 through the increase calcium influx
- Reduction of Fe³⁺ to Fe²⁺ iron.
- Reduce oxidative DNA degradation

Figure 3. Positive Health effect of ascorbic acid.

A few actions of Vitamin C



- Anti-oxidant
 - Electron donor
 - Detoxicant
 - Prevents damage
- Anti-histamine
- Enzyme co-factor
 - Collagen
 - Neurotransmitters
 - Hormones
 - Carnitine

Chronic disease:



Diabetic control

- ▶ Glucose handling improved with vit C
 - ▶ Insulin sensitivity
 - ▶ Insulin production/release
- ▶ Higher requirements in
diabetics/inflammation/competition
- ▶ Insulin injection lowers vit C
- ▶ Blood vessel health



Chronic disease:



Heart disease



Blood vessels/inflammation

Villacorta 2007 PMID: 17624419

Paterson 1941 PMID: 20321982



Cholesterol metabolism

McRae 2008 PMID: 19674720



High blood pressure

Juraschek 2012 PMID: 22492364

Effects of ascorbic acid on trabecular meshwork gene expression and collagen secretion

Holden 2026
PMID: 41692493

- **Study results. Several collagens and 96 genes are regulated by ascorbate in trabecular meshwork.**
- Aqueous humour has vitamin C concentrations of 20 – 70-fold higher than plasma and other biofluids
- Absence of vitamin C resulted in significant degradation of collagen type 1 and a decline in Trabecular meshwork cellular health.

Effects of ascorbic acid on trabecular meshwork gene expression and collagen secretion

Holden 2026
PMID: 41692493

- Addition of vitamin C resulted in several collagen chains being properly modified and secreted
- 76 genes were significantly upregulated
- 20 genes were downregulated
- The genes were involved in collagen synthesis extracellular matrix and remodelling, antioxidant, autophagy and specific signalling pathways.

Effects of ascorbic acid on trabecular meshwork gene expression and collagen secretion

Holden 2026
PMID: 41692493

- Vitamin C can decrease some types of glaucoma
 - Prevents oxidative stress which can lead to intracellular accumulation of non-degradable material
- Without vitamin C collagen chains cannot form a stable triple helix, meaning that collagen is improperly folded making them vulnerable to degradation
- Vitamin C essential cofactor in maintain contractile functions and actin dynamics



2 tomatoes
60 mg



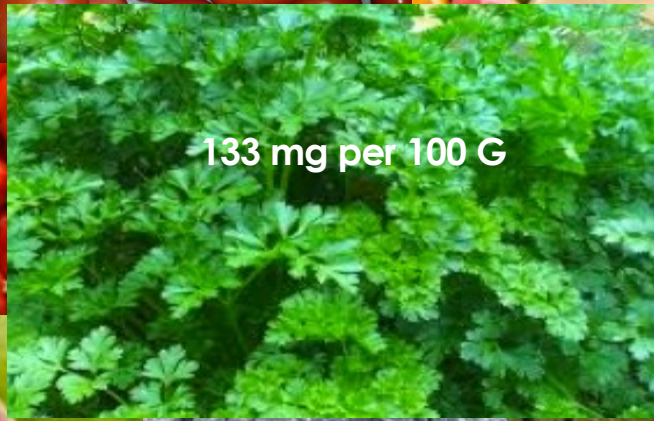
70 mg
per



11 mg
per
berry



300 mg



133 mg per 100 G



82 mg/
chopped cup



100 mg for 3



80 mg in
chopped
cup



140 mg for 2



Natural whole vitamin C



- Camu Camu
- Rose hips
- Acerola

Synthetic

