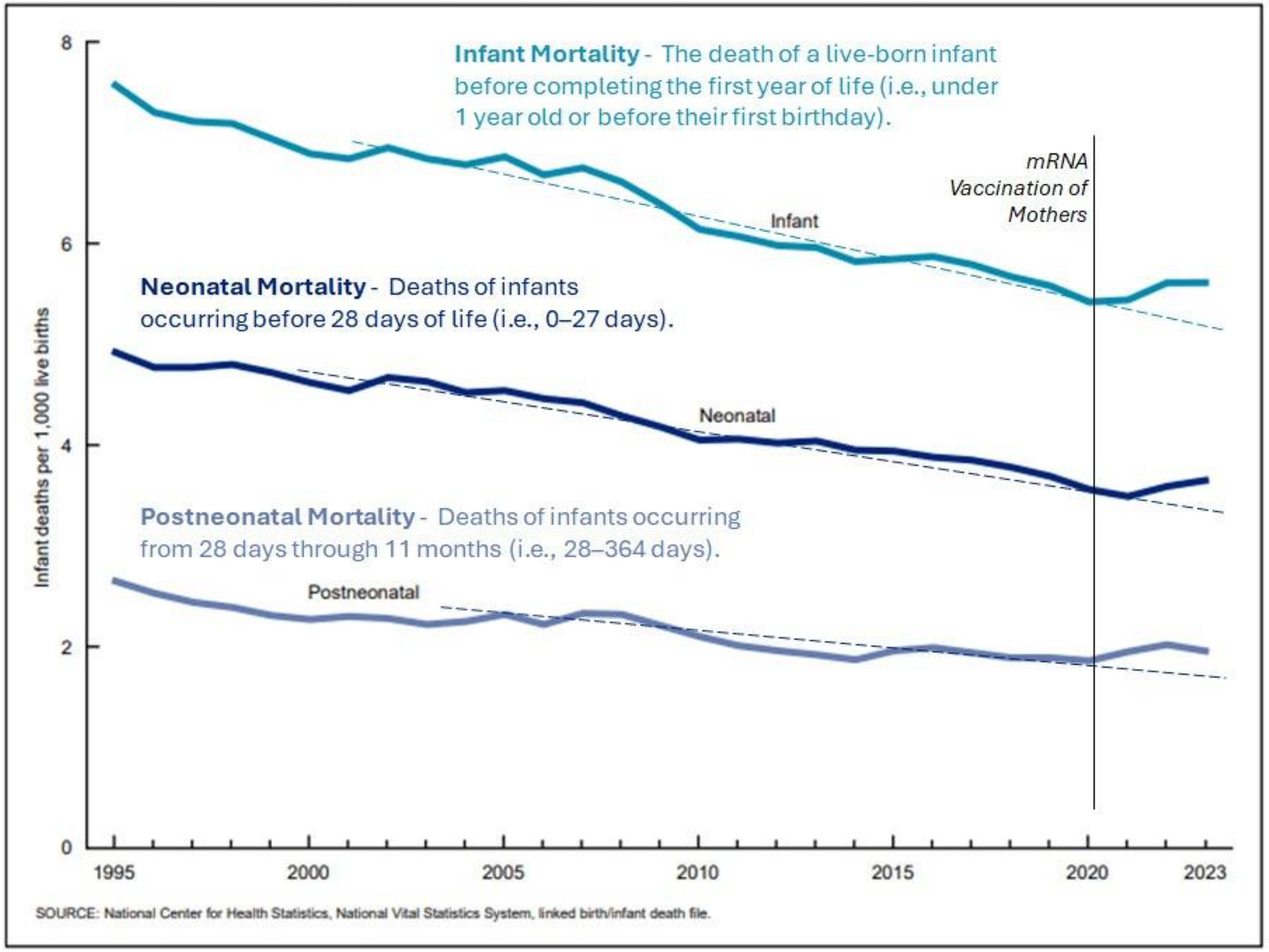

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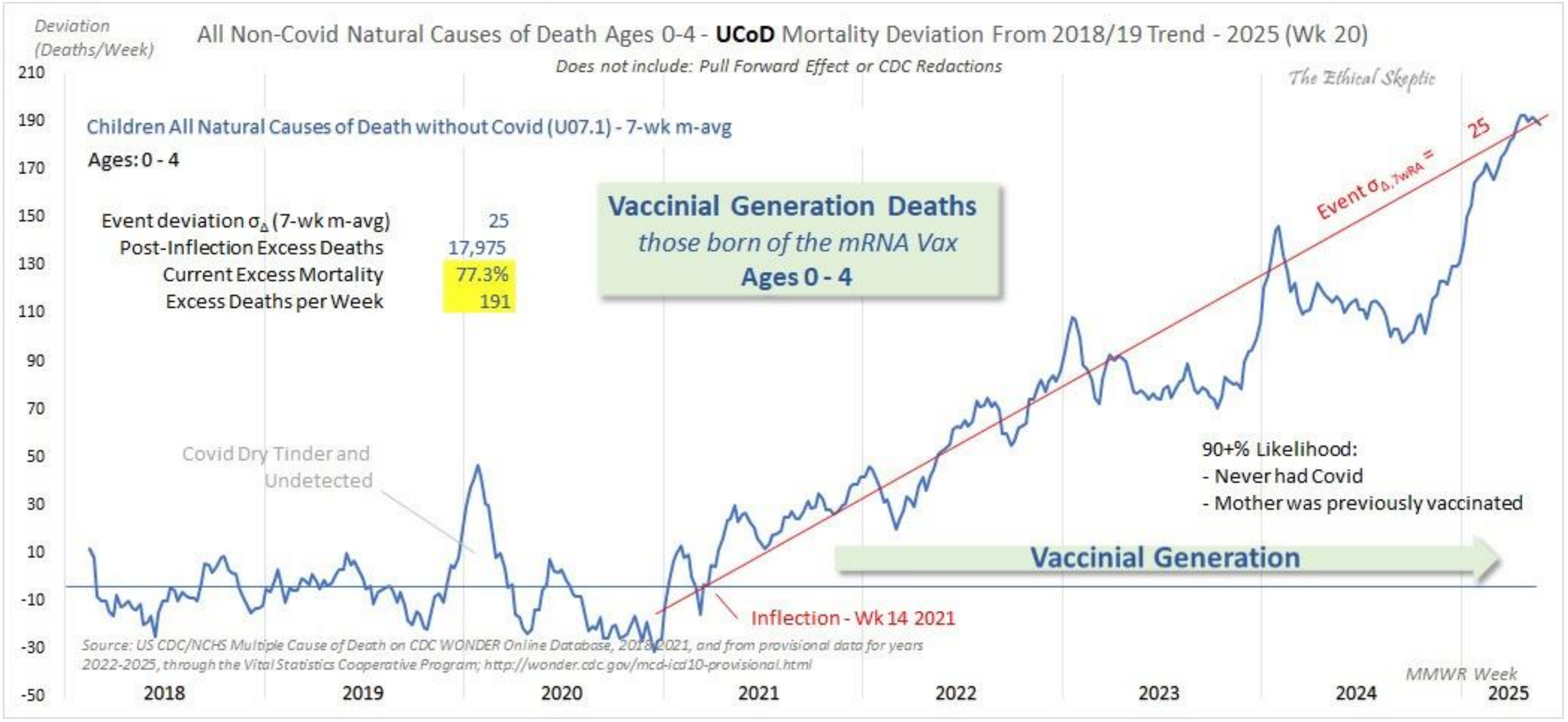

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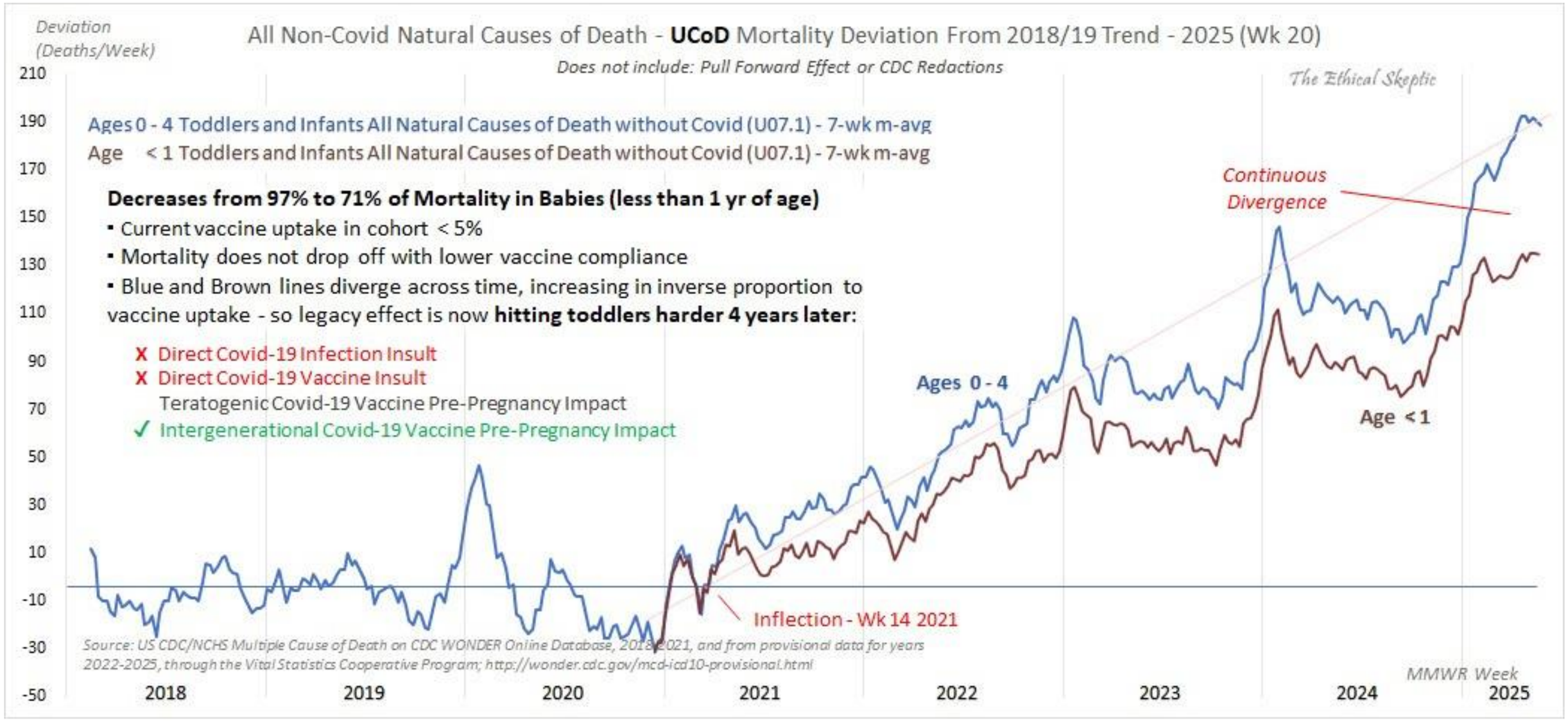

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Mortality Group	2018/19	2023/24	Diff	%Diff
Respiratory Diseases and Failure	1994	3075	1081	54%
Congenital Malformations	1296	1958	662	51%
Cardiopulmonary Disorders	1585	2192	607	38%
Increase in Susceptibility to Narcotics	147	711	564	384%
Virus and Septicaemia Susceptibility	517	982	465	90%
Other ill-defined and unspecified causes of mortality	465	899	434	93%
Epilepsy and Nervous Related	1154	1585	431	37%
Increase in Susceptibility to Non-fatal Submersion Eve	883	1206	323	37%
Disorders of Liver and Digestive Tract	251	458	207	82%
Renal Function Related	135	317	182	135%
Asphyxia and Respiratory Arrest	304	377	73	24%
Menengitis (various)	25	53	28	112%

Parallels the same excess mortality breakout as is currently observed in mRNA-vaccinated adults

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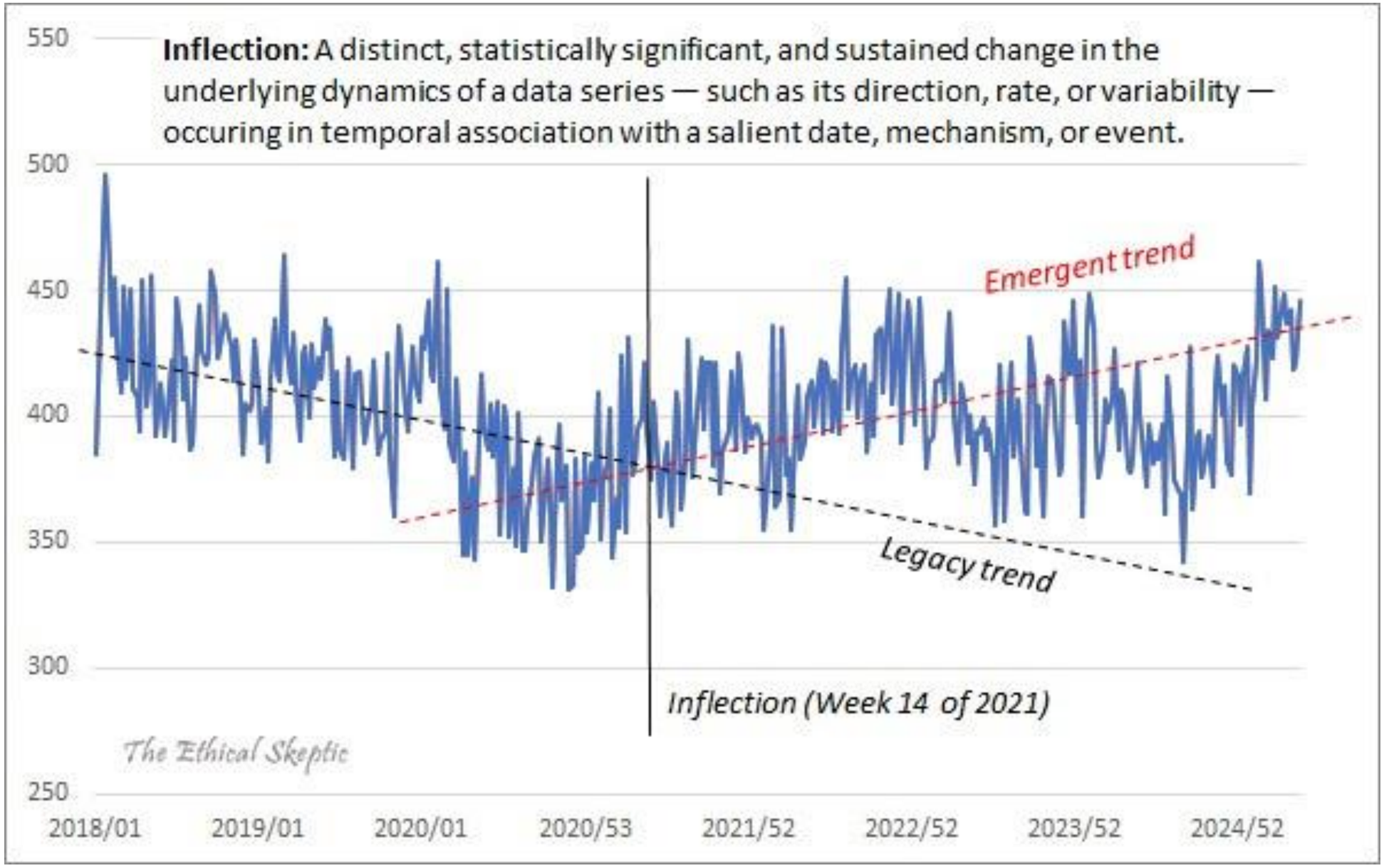

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mRNA-1273 is placenta-permeable and immunogenic in the fetus

Jeng-Chang Chen [1,2] · Mei-Hua Hsu [3,4] · Rei-Lin Kuo [5,6,7] · … · Li-Yun Tseng [9] · Hsueh-Ling Chang [9] · Cheng-Hsun Chiu [3,4] …
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Abstract

COVID-19 mRNA vaccines are generally recognized as safe for gestational administration. However, their transplacental pharmacokinetics remain obscure. In this study, mRNA-1273 intramuscularly given to pregnant mice rapidly circulated in maternal blood and crossed the placenta within 1 h to spread in the fetal circulation. Although spike mRNA in fetal circulation faded away within 4–6 h, it could accumulate in fetal tissues, mainly the liver and get translated into spike protein.

the liver and get translated into spike protein. Transplacental mRNA-1273 proved immunogenic in the fetuses, as postnatally equipped with anti-spike immunoglobulin (Ig)M, paternal allotypic anti-spike IgG_{2a}, and heightened anti-spike cellular immunity. Gestationally administered, mRNA-1273 had a dose-dependent effect on its transplacental transfer and immunogenicity in the fetuses, with higher mRNA-1273 doses leading to increased transplacental mRNA-1273 passage and greater serum titers of endogenous anti-spike IgM/IgG generated by the fetuses. Thus, gestationally maternal mRNA-1273 vaccination might endow the newborns with not only passive but also

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RETRACTED ARTICLE: Prenatal Exposure to COVID-19 mRNA Vaccine BNT162b2 Induces Autism-Like Behaviors in Male Neonatal Rats: Insights into WNT and BDNF Signaling Perturbations

Original Paper | Open access | Published: 10 January 2024

Volume 49, pages 1034–1048, (2024) Cite this article

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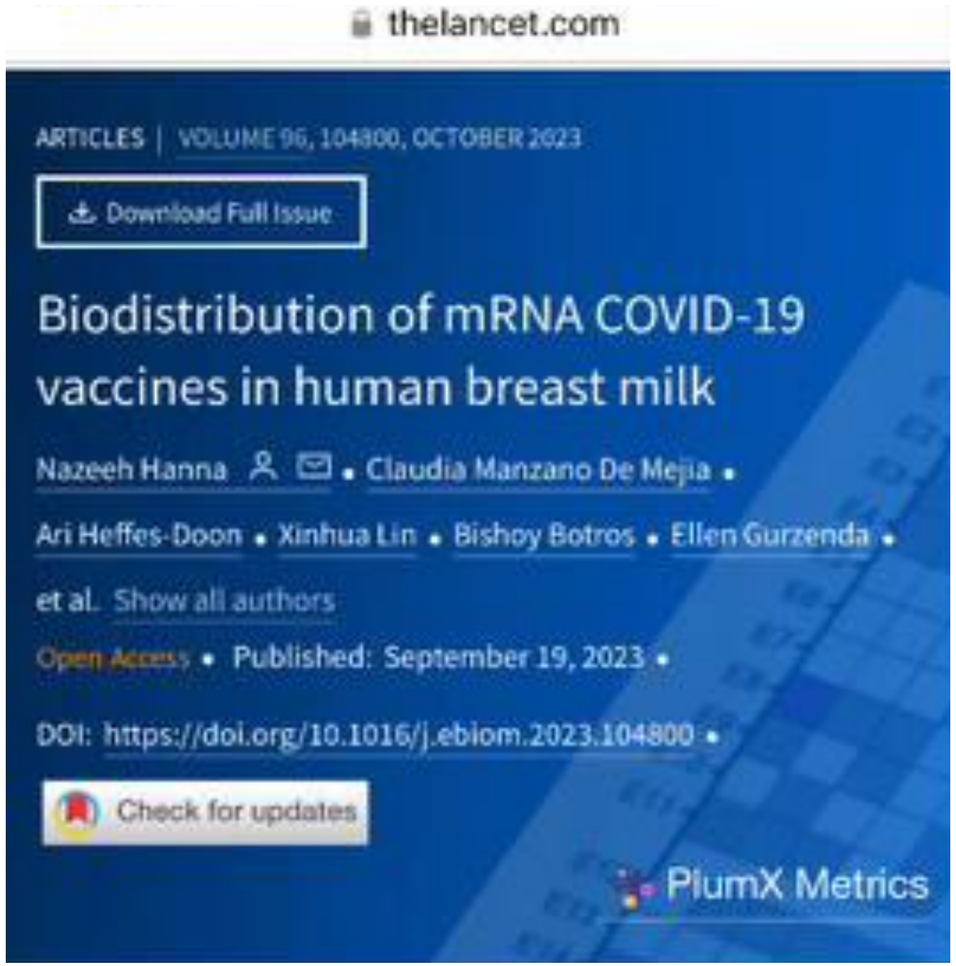
Mumin Alper Erdogan, Orkun Gurbuz, Mehmet Fatih Bozkurt & Oytun Erbas

This article was retracted on 19 July 2025

Biodistribution of mRNA in breastmilk



Interpretation

Our findings demonstrate that the COVID-19 vaccine mRNA is not confined to the injection site but spreads systemically and is packaged into BM EVs. However, as only trace quantities are present and a clear translational activity is absent, we believe breastfeeding post-vaccination is safe, especially 48 h after vaccination. Nevertheless, since the minimum mRNA vaccine dose to elicit an immune reaction in infants <6 months is unknown, a dialogue between a breastfeeding mother and her healthcare provider should address the benefit/risk considerations of breastfeeding in the first two days after maternal vaccination.

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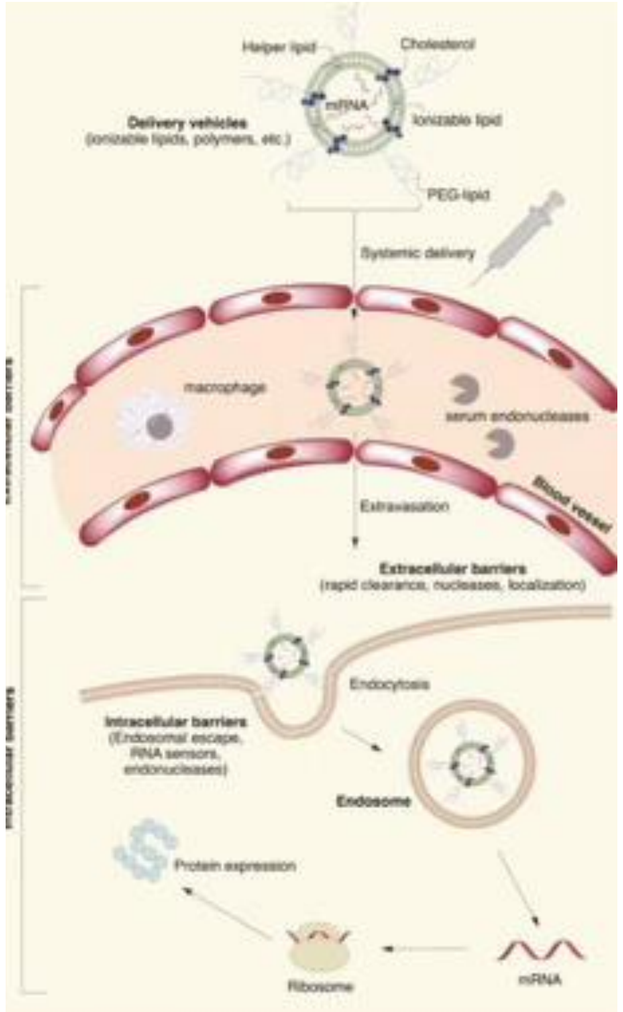
Nanoparticles can cross mouse placenta and induce trophoblast apoptosis

Jian-Pei Huang [a], Patrick C.H. Hsieh [b], Chen-Yu Chen [a], Tao-Yeuan Wang [c], Pei-Chun Chen [d], Chang-Ching Liu [d], Chen-Chun Chen [e], Chie-Pein Chen [a d]



According to this study from 2015, it makes its way through the placenta and can induce trophoblast apoptosis.

In Conclusion: "In the present study, we demonstrated that carboxylate-modified nanoparticles ranging from 20 to 500 nm in size can cross mouse placenta and be distributed in various fetal organs."

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Review

Potential adverse effects of nanoparticles on the reproductive system

Ruolan Wang et al. Int J Nanomedicine. 2018.

LNP effect on fertility.

Abstract

With the vigorous development of nanometer-sized materials, nanoproducts are becoming widely used in all aspects of life. In medicine, nanoparticles (NPs) can be used as nanoscopic drug carriers and for nanoimaging technologies. Thus, substantial attention has been paid to the potential risks of NPs. Previous studies have shown that numerous types of NPs are able to pass certain biological barriers and exert toxic effects on crucial organs, such as the brain, liver, and kidney. Only recently, attention has been directed toward the reproductive toxicity of nanomaterials. NPs can pass through the blood-testis barrier, placental barrier, and epithelial barrier, which protect reproductive tissues, and then accumulate in reproductive organs. NP accumulation damages organs (testis, epididymis, ovary, and uterus) by destroying Sertoli cells, Leydig cells, and germ cells, causing reproductive organ dysfunction that adversely affects sperm quality, quantity, morphology, and motility or reduces the number of mature oocytes and disrupts primary and secondary follicular development. In addition, NPs can disrupt the levels of secreted hormones, causing changes in sexual behavior. However, the current review primarily examines toxicological phenomena. The molecular mechanisms involved in NP toxicity to the reproductive system are not fully understood, but possible mechanisms include oxidative stress, apoptosis, inflammation, and genotoxicity. Previous studies have shown that NPs can increase inflammation, oxidative stress, and apoptosis and

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Where are the tox studies?

Animal work was very limited. Rat studies, [94] the results of which were only obtained by a Freedom of Information Request (FOIR), showed that lipid nanoparticles accumulate in organs including the spleen, heart, and ovaries, with levels still rising after 9 days. No distribution studies were done using the final mRNA product.

Pfizer's non-clinical overview document revealed that safety pharmacology, carcinogenicity, pharmacokinetic, and genotoxicity studies were not conducted as they were **"not deemed necessary".** [95] The MHRA's unprecedented rapid approvals meant that they did not appear to have identified (or discounted without investigation) that some of the ingredients were **novel and known to be toxic**.

For instance, Pfizer's lipid ingredients ALC-0159 and ALC-0315 had not been included in any licensed drug before and had undisclosed quality control standards. [96] ALC-0315 is a type of man-made molecule called a cationic lipid, which can be toxic because it can trigger a process that leads to inflammation and cell death. This has become a major challenge for using cationic lipids in different applications. [97] ALC-0159 contains PEG (Polyethylene glycol) which is known to **cause anaphylaxis**, [98] a life-threatening adverse effect.

The lipid nanoparticle technology used in the mRNA vaccines was previously **found to be toxic** when multiple doses were given, in attempts to make it work for conventional gene therapy. [99]

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