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# Do You Know What's in a Vaccine? Chemical Ingredients

## Addendum to the Childhood Vaccination Series

By Health Freedom Defense Fund
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Theme: Science and Medicine



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*Over the last few decades, the number of chemicals added to foods and other products has skyrocketed. Chemicals are added to "enhance flavor", make fruits and vegetables look fresh, extend the shelf life of packaged foods and for other invented reasons. A cornucopia of chemicals are also found in lotions and beauty products with the ostensible reason that these chemicals make beauty products feel, look, and smell nice.*

Along with this increase in heavily processed foods has come increased skepticism *about the necessity* of inserting chemical additives into everything we touch and taste. A significant and growing segment of the US population are beginning to examine the health consequences of ingesting and absorbing these chemical-laden products.

This growing awareness about the adverse effects of ingesting and absorbing synthetic ingredients and the public's understanding of the attendant health benefits of consuming products free from synthetic chemicals has prompted consumers to seek out organic ingredient-based items in their foods and skin lotions.

More people are showing interest in knowing about the ingredients in their food and striving to 'eat clean.' This increased awareness is evidenced in the steady growth of the organic food industry and trends in the natural and organic cosmetic industry where demand is higher than ever.

This same level of concern has begun to seep into the public conscience regarding a certain medical product that has mostly avoided scrutiny – the vaccine.

Having been trained to accept that this product is a customary aspect of everyday life, most people haven't given much thought to what's inside the vaccine vials. Rarely will the vaccine ritual in the doctor's office include a discussion about the ingredients which are about to be injected into the patient's body. It's highly likely the physicians and nurses

themselves don't know the ingredients of each vaccine.

So what's in that vial? What's coming through that needle?

## A Partial List of Ingredients

*Aluminum:* Aluminum salts are used in some vaccine formulations as an adjuvant. An adjuvant is a substance added to vaccines to ostensibly enhance the immune response. Examples of aluminum salts in some vaccines are aluminum hydroxide, aluminum phosphate, alum (potassium aluminum sulfate) or mixed aluminum salts.

In a 2011 study Canadian scientists Professor Christopher Shaw and Dr. Lucija Tomljenovic stated the following:

> "Aluminum is an experimentally demonstrated neurotoxin and the most commonly used vaccine adjuvant. In particular, aluminum in adjuvant form carries a risk for autoimmunity, long-term brain inflammation and associated neurological complications and may thus have profound and widespread adverse health consequences."

Multiple studies have shown that the intramuscularly injected aluminum vaccine adjuvant is absorbed into the systemic circulation and travels to different sites in the body, such as the brain, joints, and the spleen, where it accumulates and is retained for years post-vaccination.

*Mercury (thimerosal):* Thimerosal is an ethyl mercury-based preservative used in vials that contain more than one dose of a vaccine (multi-dose vials) to prevent germs, bacteria and/or fungi from contaminating the vaccine. While in decline some flu vaccines and childhood vaccines in multi-dose vials still utilize thimerosal.

Mercury is known to be a genotoxic agent, even in minute concentrations, which can damage the genetic information within a cell causing mutations, which may lead to cancer.

A meta-analysis epidemiological study suggested thimerosal containing vaccines significantly increased the risk of neurodevelopmental disorders.

A 2011 study suggested there may be higher rates of blood and brain mercury levels in monkeys exposed to vaccines containing thimerosal.

The American Academy of Pediatrics and the U.S. Public Health Service (1999) published a joint statement that urged "all government agencies to work rapidly toward reducing children's exposure to mercury from all sources."

*Gelatin:* Gelatin is used as a stabilizer in some vaccines licensed in the U.S. Stabilizers are added to vaccines to protect the active ingredients from degrading during manufacture, transport and storage.

Gelatin is a protein obtained from cows or pigs and produced by the partial hydrolysis of collagen extracted by boiling animal parts such as cartilage, tendons, skin, bones and ligaments in water. Some people might have a severe allergic reaction to it.

Certain vaccine viruses are grown on gelatin derived from the ligaments of pigs fed heavy doses of glyphosate in their feed. Gelatin comes from collagen which has lots of glycine.

Gelatin is one of the most commonly identified causes of allergic reactions to vaccines.

A 1999 Japanese study showed most anaphylactic reactions and some urticarial reactions to gelatin-containing measles, mumps, and rubella monovalent vaccines were associated with gelatin allergy. Based on these findings Japan removed gelatin from vaccines in 2000.

*Formaldehyde:* Formaldehyde is used during the manufacture of some vaccines to inactivate viruses (like polio and hepatitis A viruses) or bacterial toxins (like diphtheria and tetanus toxins).

Formaldehyde is a human carcinogen based on evidence from cancer studies in humans and is listed as a*known to be* human carcinogen in the National Toxicology Program's (NTP) *Twelfth Report on Carcinogens*(2011).

*Phenol/Phenoxyethanol:* Phenoxyethanol is used in vaccines and biologics as a preservative to prevent microbial growth.

A 2010 study, *The relative toxicity of compounds used as preservatives in vaccines and biologics,* assessed the relative cytotoxicity of the levels of the compounds commonly used as preservative in US licensed vaccines and found that for phenoxyethanol it was 4.6-fold, for phenol 12.2-fold and for Thimerosal >330-fold.

They concluded, "None of the compounds commonly used as preservatives in US licensed vaccine/biological preparations can be considered an ideal preservative, and their ability to fully comply with the requirements of the US Code of Federal Regulations (CFR) for preservatives is in doubt."

Case reports (here, here and here) have suggested a link between phenoxyethanol and urticaria (hives), eczema and anaphylaxis.

*Triton X-100:* Triton X –100 or octylphenol ethoxylate (OPE) is a surfactant (reducing the surface tension of liquids) and stabilizer present in some influenza vaccines.

OPEs are endocrine disruptors and break down relatively easily into Octylphenols (OPs), which are more harmful. Endocrine disruptors can alter reproductive function, increase incidences of breast cancer, affect growth patterns and neurodevelopment in children and change immune function.

*Squalene:* Squalene is a naturally-occurring substance derived primarily from shark liver oil. When combined with other ingredients it becomes an adjuvant, which, like aluminum, is added to vaccines to elicit a stronger immune response from the body.

A 2000 study demonstrated that one intradermal injection of squalene adjuvant produced arthritis in rats.

Some believe that Gulf War Syndrome was linked to the presence of squalene in certain lots of the anthrax vaccine.

*Beta-propiolactone:* Beta-propiolactone (BPL) is a commonly used reagent for the inactivation of viruses for use in vaccine preparations. It has recently been used in the development of an inactivated SARS-CoV-2 vaccine preparation.

Beta-propiolactone is a known carcinogen. Local sarcomas have been produced by subcutaneous injection of beta-propiolactone in rats. In the laboratory sarcomas and squamous papillomas in mice were produced by a single subcutaneous injection of a minute amount of beta-propiolactone.

*Polysorbate 80:* Polysorbate 80 is present in some vaccines to stop the vaccine from separating into its component parts. In a PubMed study Polysorbate 80 was described as, "a ubiquitously used solubilizing agent that can cause severe nonimmunologic anaphylactoid reactions."

In a pharmacological study on mice and rats Polysorbate 80 produced, "mild to moderate depression of the central nervous system with a marked reduction in locomotor activity and rectal temperature, exhibited ataxia and paralytic activity and potentiated the pentobarbital sleeping time."

The results of that study concluded, "The results of the present study indicate that polysorbate 80 can neither be used as a solvent for isolated tissue experiments nor when considered for intravenous administration."

Another study from the American Association for Cancer Research (AACR) suggested the dietary emulsifier polysorbate 80 may induce low-grade inflammation which may contribute to metabolic diseases and increase the potential for development in colon cancer.

*Genetically modified yeast:* S. cerevisiae, a species of yeast, is used in vaccines in a variety of ways. It is used as an adjuvant and now through genetic manipulation it is being used to create artificial antibodies

Studies have suggested that genetically engineered yeast used in vaccines may be a contributing factor to autoimmune disorders.

*Monosodium Glutamate (MSG):* Monosodium Glutamate is used in small amounts in some vaccines to keep them stable and protect them from losing potency even when exposed to heat and light.

In a study that looked at rat fertility and MSG consumption the authors found there was a negative impact on the rats' fertility.

In another study it was noted that chronic MSG intake caused kidney dysfunction and renal oxidative stress in the animal model.

*Cells From Aborted Fetus:* Fetal cell lines are used to grow viruses which are then collected from the cell cultures and processed further to produce the vaccine itself.

The cell lines are propagated from lung tissue of mature aborted and used in the current manufacture of a number of routine vaccines, including measles, mumps and rubella (MMRV), diphtheria, tetanus, pertussis and polio, (DTaP-IPV), Hepatitis A and chickenpox.

Aborted fetal cells are listed on vaccine package inserts as "Human Fetal Diploid Cells." Two aborted fetal cell lines, WI-38 and MRC-5, have been grown under laboratory conditions since the 1960s. Diploid cells (WI-38, MRC-5) vaccines have their origin in induced abortions.

The use of such cell lines can be profoundly objectionable to segments of the population

who hold certain religious and/or philosophical beliefs.

The Italian vaccine research and advocacy organization Corvelva released a study in 2019 regarding the use of aborted fetal cell lines in vaccines.

In their summary they highlighted the following:

- The human genomic DNA contained in this vaccine is clearly, undoubtedly abnormal, presenting important inconsistencies with a typical human genome, that is, with that of a healthy individual.
- 560 genes known to be associated with forms of cancer were tested and all underwent major modifications.
- There are variations whose consequences are not even known, not yet appearing in the literature, but which still affect genes involved in the induction of human cancer.
- What is also clearly abnormal is the genome excess showing changes in the number of copies and structural variants.

*Serum From Aborted Calf Fetus Blood:* The purpose for the fetal bovine serum is to provide a nutrient broth for viruses to grow in cells.

Humane Research Australia describes the process of how the blood is collected, "The blood is collected after the slaughter of a mature female cow, the mother's uterus containing the calf fetus is removed during the evisceration process and transferred to the blood collection room. A needle is then inserted between the fetus's ribs directly into its heart and the blood is vacuumed into a sterile collection bag.

Only fetuses over the age of three months are used otherwise the heart is considered too small to puncture. Once collected, the blood is allowed to clot at room temperature and the serum separated through a process known as refrigerated centrifugation."

Beyond certain ethical considerations scientists have found that different bovine tissues contain different amounts of the BSE agent.

*Antibiotics:* Antibiotics are used during the manufacturing process of some vaccines to stop bacteria growing and contaminating the vaccine.

Antibiotics found in some vaccines include neomycin, streptomycin, polymyxin b, gentamicin and kanamycin.

Polymyxin B comes with a warning that, "This medicine has not been fully studied in pregnant women. This medicine may cause kidney problems. This medicine may cause nerve problems", as well as a laundry list of side effects.

Similar warnings are found with streptomycin, neomycin, gentamicin, and kanamycin.

A study out of Finland raised concerns about excessive antibiotic use in early childhood which may lead to weight gain and altered gut bacteria.

## What Else Could be in That Needle?

The list above is not a complete account of all the ingredients found in various vaccine

cocktails. A comprehensive manufacturers' catalog of ingredients can be found here, here and here.

The reality is that even a complete list issued by the producer doesn't tell the entire story of what is found in vaccines.

Using an Environmental Scanning Electron Microscope equipped with an X-ray microprobe a group of Italian scientists examined 44 samples of 30 different vaccines and found dangerous contaminants, including metal toxicants in 43 of the 44 samples tested.

In the study, published in the *International Journal of Vaccines and Vaccination*, the researchers detected lead, chromium, nickel and other metals in every adjuvant sample tested.

Additional metal contaminants identified in 25 of the human vaccines included platinum, silver, bismuth, iron, and chromium. Foreign impurities such as zirconium, hafnium, strontium, tungsten, antimony, bismuth, cerium and were also detected in many of the vaccines tested.

The researchers commenting on their unexpected findings reported:

> The quantity of foreign bodies detected and, in some cases, their unusual chemical compositions baffled us. In most circumstances, the combinations detected are very odd as they have no technical use, cannot be found in any material handbook and look like the result of the random formation occurring....*In any case, whatever their origin, they should not be present in any injectable medicament, let alone in vaccines, more in particular those meant for infants. [Emphasis added]*

When interviewed lead scientist Dr. Antonietta Gatti, of the National Council of Research of Italy and Scientific Director of Nanodiagnostics, explained that the discovery of vaccine impurities shocked the researchers:

> Those particles should not have been there. We had never questioned the purity of vaccines before. In fact, for us the problem did not even exist. All injectable solutions had to be perfectly pure and that was an act of faith on which it seemed impossible to have doubts. For that reason, we repeated our analyses several times to be certain. In the end, we accepted the evidence.

Speculating on the potential consequences of these foreign impurities Dr. Gatti stated:

> The particles, be they isolated, aggregated or clustered, are not supposed to be there… Our tissues perceive these foreign bodies as potential enemies…Unfortunately, though, the particles we found in vaccines, are not biodegradable. So, all the macrophages' efforts will be useless, and depending on the exact chemicals involved, the particles may be especially toxic. Cytokines and pro-inflammatory substances in general are released and granulated tissue forms, enveloping the particles. This provokes inflammation which, in the long run, if locally persistent, is known to be a precursor to cancer.

Along with unlisted metal contaminants another unlisted contaminant was noted in some vaccines when a preliminary screening result from Microbe Inotech Laboratories Inc. detected glyphosate in the childhood vaccines they tested.

Merck's MMR II vaccine had 2.671 parts per billion (ppb) of glyphosate, Sanofi Pasteur's DTap Adacel vaccine had 0.123 ppb, Novartis' Influenza Fluvirin had 0.331 ppb, Glaxo Smith Kline's HepB Energix-B vaccine had 0.325 ppb, Merck's Pneumococcal Vax Polyvalent Pneumovax 23  had 0.107 ppb of glyphosate.

These findings prompted Moms Across America to send a letter to the FDA, CDC, EPA,NIH and California Department of Health requesting that they test vaccines for glyphosate and recall contaminated vaccines.

MIT scientist Dr. Stephanie Seneff remarked on the route by which glyphosate could get into vaccines:

> Collagen is a protein found in large amounts in the ligaments of cows, and these ligaments are often used in the production of gelatin. The MMR vaccine and flu vaccine viruses are grown as live cultures on gelatin sourced from cows fed high concentrations of glyphosate in their GMO RoundupReady feed.

## What to Do?

Given the complex nature of the composition of vaccines and the paucity of information volunteered to the public on the manufacturing processes and ingredients that go into these products, how does one go about navigating this subject?

Conventional wisdom might suggest, "Ask your doctor." But how independent are these doctors?

Where do you turn when you discover physicians and pediatricians, who have a legal duty to fully inform patients about vaccine risks and side effects, have ideological and material incentives to avoid presenting specific information that might cause a parent to question a vaccine?

What about educational materials and advice from the agencies tasked with protecting public health? Can we trust the FDA and the CDC to provide detailed and unbiased information when it is known that they get substantial amounts of money from vaccine manufacturers?

Informed consent is a principle in medical ethics and medical law that a patient must have sufficient information and understanding before making decisions about their medical care.This includes being given a thorough account of the risks and benefits of treatments, alternative treatments, the patient's role in treatment, and their right to refuse treatment.

Informed and individualized health care decisions about any product one puts into their or their children's body starts with being fully informed with what is in that product.

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