How Aluminum Adjuvant Causes Autism

Aluminum Adjuvant Injection ▶ Al Adjuvant Particles Travel Into the Brain ▶ IL-6 Production & Microglial Activation in the Brain ▶ AUTISM

There is now strong scientific evidence that vaccines cause autism by an immune activation mechanism. Aluminum adjuvant is implicated because it travels into the brain where it causes microglial activation and elevated IL-6 production.

Today about 1 in 6 American children suffer from a neurodevelopmental disorder, a large increase compared to decades ago. Vaccines are a primary cause of this new crisis.

Vaccine advocates are silent about the science of Al adjuvant toxicity and immune activation.

"These MIA (maternal immune activation) animal models meet all of the criteria required for validity for a disease model: They mimic a known disease-related risk factor (construct validity), they exhibit a wide range of disease-related symptoms (face validity), and they can be used to predict the efficacy of treatments (predictive validity)." [1]

— Dr. Kimberley McAllister, et al. (UC Davis MIND Institute), 2016

"...any factors that alter the number or activation state of microglia either in utero or during the early postnatal period can profoundly affect neural development, thus resulting in neurodevelopmental disorders, including autism." [35]

— Tomoyuki Takano (Shiga University of Medical Science, Japan), 2015

"...the existing evidence on the toxicology and pharmaco-kinetics of Al adjuvants…strongly implicate these compounds as contributors to the rising prevalence of neurobehavioral disorders in children." [3]

— Dr. C.A Shaw, et al. (University of British Columbia), 2013

"And what does a vaccination do? It activates the immune system. That's the point of vaccination... I think that universal vaccination of pregnant women could get us into a whole new set of problems." [43]

— Dr. Paul Patterson, et al. (California Institute of Technology), 2006

OBJECTIONS ANSWERED

What about the studies showing vaccines do not cause autism?

They look only at MMR or thimerosal. MMR does not contain Al. Also, MMR-autism studies ignore healthy user bias, created when parents do not give MMR to children with neurological injury caused by prior Al-containing vaccines. Healthy user bias conceals evidence of harm in vaccine safety studies. [40]

But aluminum has been used in vaccines for over 80 years.

TRUE. But it has not been studied for neurotoxicity or long-term safety until recently. Al dosage from vaccines increased dramatically in the last 25 years, in parallel with childhood neurodevelopmental disorders.

Aluminum is everywhere and ingested constantly. It cannot be harmful.

99.7% of ingested aluminum is not absorbed. The absorbed 0.3% comprises dissolved ions, which are rapidly eliminated in urine. Al adjuvant is made of ***particles***, which remain in the body for years. Babies receive about 175X more Al from vaccines than mother's milk in the first 6 months.

But immune activation studies are based on prenatal immune activation, not postnatal.

Studies of postnatal immune activation also show brain injury. The brain can be injured by immune activation prenatally or postnatally. The CDC recklessly promotes multiple vaccines for pregnant women. Influenza vaccination during pregnancy increases autism risk (4 additional autism cases per 1000 vaccinations). [41]

But autism is an inherited, genetic disorder.

Autism is a gene-environment interaction between vaccines and genes that create a vulnerability to vaccines. Heritability estimates are from twin studies, which misclassify gene-environment interaction as purely genetic. Vaccines cause autism in people with the genes; the genes per se do not cause autism. [44-45]

Are there ways to prevent damage from aluminum and immune activation?

YES. The nutrients silica, taurine and curcumin reduce Al neurotoxicity. Vitamin D reduces IL-17, and can prevent and reverse autism. [37, 38,

"Maternal immune activation yields male offspring with deficient social and communicative behavior, as well as high levels of repetitive behaviors, all of which are hallmarks of autism." [36]

— Dr. Paul Patterson, et al. (California Institute of Technology), 2012

"Interleukin-6 is necessary and sufficient for producing autism in the offspring…" [12]

— Dr Eduardo Pineda, et al. (David Geffen School of Medicine, UCLA), 2013

REFERENCES

Citations available at: vaccinepapers.org/autism-brochure

Vaccines and Autism

Vaccination ▶ Immune Activation ▶ Autism

New scientific discoveries show that autism is caused by early-life immune activation and brain inflammation. This brochure explains the science connecting vaccines, immune activation, aluminum adjuvant and autism.

VaccinePapers.org

Immune Activation & Autism

In early life, the brain and immune system develop together. "Cytokines" are chemicals used by the immune system for communcation, but they also guide brain development. Immune activation from an infection or vaccine [14] can cause elevated cytokines in the brain, thereby disrupting brain development. Specifically, immune activation can cause life-long brain injury and mental illnesses including autism, seizures/epilepsy, and schizophrenia. Developmental brain injury by cytokines has been studied extensively in humans, mice, and monkeys.[1-5]

Immune activation is recognized as a valid model for human autism, schizophrenia and other disorders.[1] Research has identified interleukin-6 (IL-6) and interleukin 17a (IL-17) as specific cytokines responsible for autism. IL-6 at low levels is necessary for healthy brain development, but elevated brain IL-6 during development causes autism.[6-12]

Immune activation in infants can cause brain injury [13-16]. This is because the brain develops for years after birth. For example, synapse formation, which is disrupted by IL-6, is most intense at ages 0-2, when vaccines are given.[17-19]

Early life immune activation causes many abnormalities associated with autism: mitochondrial dysfunction, Purkinje cell loss, microbiome dysbiosis, chronic brain inflammation, and autoimmunity. [20-25] It is established beyond reasonable doubt that autism is caused by immune/microglial activation and IL-6/IL-17 specifically.

Vaccines are designed to cause immune activation. But can vaccines cause immune activation in the brain? Can vaccines induce IL-6 in the brain? The answer to these questions is YES.

The aluminum (Al) adjuvant in vaccines can travel to the brain and stay there, causing long-term brain inflammation.

FOR FURTHER READING: **VaccinePapers.org**

Aluminum Adjuvant & Immune Activation

Aluminum (Al) adjuvant is necessary in many vaccines for stimulating immunity. The Al adjuvant dosages infants receive in the CDC schedule cause neurological injury, brain inflammation, learning and memory impairment, and behavioral abnormalities in animal experiments (@ 100, 200, 300 and 550 mcg/kg).[27-30]

It is now clear that vaccines contain brain-damaging amounts of Al adjuvant.

Aluminum from CDC Schedule

Birth	74 mcg/kg	(1 vaccine with 250 mcg, 3.4 kg infant)
2 months	245 mcg/kg	(6 vaccines with 1225 mcg, 5 kg infant)
4 months	150 mcg/kg	(5 vaccines with 975 mcg, 6.5 kg infant)
6 months	153 mcg/kg	(7 vaccines with 1225 mcg, 8 kg infant)
TOTAL		**3675 mcg aluminum**

Aluminum dosage varies by vaccine manufacturer and infant weight. Chart shows maximum possible dosages for average-weight infants.

Al adjuvant is made of microscopic particles. The particles cause immune activation wherever they go, and they travel into the brain. Al adjuvant particles persist in the brain for months or years,[30-31] causing chronic immune activation. Aluminum elevates IL-6 in the brain.[32] Hepatitis B vaccine (contains Al adjuvant) elevates IL-6 in the brain.[14] Aluminum also causes methylation impairment, which is always present in autism. [42]

Al adjuvant particles are transported around the body by immune system cells (macrophages), in response to a signal called "MCP-1".[31] Elevated MCP-1 causes Al adjuvant transport into the brain. Infants that become autistic have high MCP-1 at birth. [33, 34] Vaccines (e.g. MMR) can trigger MCP-1, and thereby accelerate transport of Al particles into the brain. Brain accumulation of Al adjuvant can take months or years. Hence, brain injury can develop months or years after vaccination.

Al Adjuvant Particle in Brain

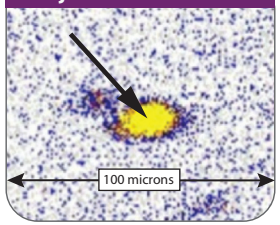
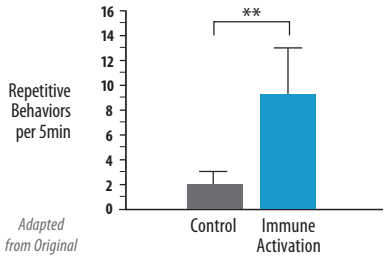


Image of Al adjuvant particle in brain of mouse injected with Al adjuvant into the leg 1 year earlier.[31]
Yellow = Aluminum

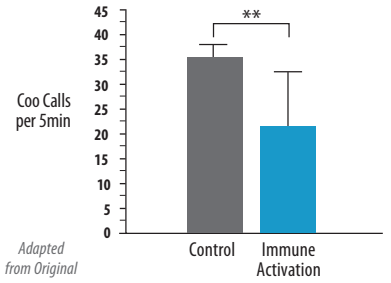
Repetitive Behavior *(in Monkeys)*



Adapted from Original

Immune activation increased repetitive behavior in monkeys. Repetitive behavior is a defining symptom of autism. P<0.01 [26]
QUOTE: *"...alterations in behavior overlap with core diagnostic domains of autism."*
PMID: 24011823

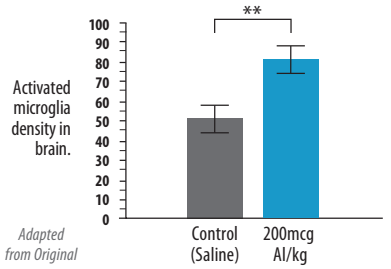
Speech Impairment *(in Monkeys)*



Adapted from Original

Immune activation reduced social speech in monkeys. This is a defining symptom of autism. P<0.01 [26]
QUOTE: *"...alterations in behavior overlap with core diagnostic domains of autism."*
PMID: 24011823

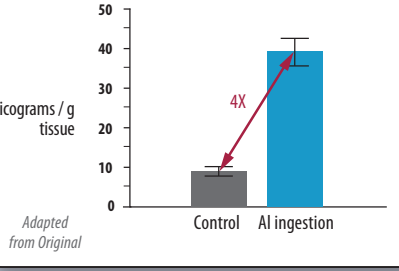
Brain Inflammation



Adapted from Original

200mcg/kg Al adjuvant caused chronic inflammation (microglial activation) in the brains of mice, 6 months after Al adjuvant injection P<0.05. This dosage increased brain aluminum content 50-fold. [30] *Activated microglia play a causal role in autism.* [35]
PMID: 27908630

Al increases IL-6 in Brain



Adapted from Original

Ingestion of 3.4mg/Kg/d Al caused 4X increase in brain IL-6 level in rats. This is a vaccine-relevant dosage. Assurance of Al adjuvant safety is based on a single study showing no adverse effects from 26mg/Kg/day (ingested). Harm from 3.4 mg/kg/day disproves the safety assurances from CDC. P<0.05.
PMID: 26897372