



JOHNS HOPKINS  
BLOOMBERG  
SCHOOL of PUBLIC HEALTH

Department of Epidemiology  
Johns Hopkins Bloomberg School of Public Health  
415 N. Washington Street, 2<sup>nd</sup> Floor  
Baltimore, Maryland 21231

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## Memorandum

To: Trialists

Fr: Curtis Meinert

Re: Trials and common sense

I am a trialist, but very little of what we know is based on trials.

We went from “More doctors smoke Camels than any other cigarette” to the “Marlboro Man” to a warning on every pack of cigarettes sold (1965):

**The Surgeon General Has Determined That  
Cigarette Smoking Is Dangerous to Your Health**

Do we really need a warning?

Common sense should tell us that inhaling smoke is not good for us.

Likewise with brain injuries from using our heads as battering rams, but alas, common sense is not so common.

Yet we are driven by “common sense” health adages like:

**An apple a day keeps the doctor away**

and

**Early to bed, early to rise, makes a man healthy, wealthy, and wise**

A lot of what we do is by dogma; an example: how we sleep babies.

In the era of Benjamin Spock the dogma (not unique to Spock) was to sleep babies on their tummies, the supposition being that doing so would reduce the risk of choking if the baby vomits while sleeping. But with the “epidemic” of sudden infant deaths (SIDs), the advice changed to sleeping them on their backs.

It is postulated that it was not until the 1900s that people were better off going to doctors than staying away from them. A game changer was vaccinations.

The march toward vaccination began in 1796 when Edward Jenner noticed that milkmaids with cowpox did not get smallpox. To test the observation Jenner took material from a cowpox sore on a milkmaid’s hand and inoculated it into the arm of the 9-year-old son of Jenner’s gardener. Months later, Jenner exposed the boy to the variola virus but never developed smallpox. More experiments followed, and, in 1801, Jenner published his treatise “On the Origin of the Vaccine Inoculation.”

As a trialist, I know you have more failures than successes. Therefore, we have to thank those who came before who had the courage and wherewithal to test vaccines we use today. The list in the table below is through 1998

(<https://www.cdc.gov/mmwr/preview/mmwrhtml/00056803.htm#00003752.htm>).

Disease	Year	Lic for use in US
Smallpox*	1798	
Rabies	1885	
Typhoid	1896	
Cholera	1896	
Plague	1897	
Diphtheria	1923	
Pertussis	1926	
Tetanus	1927	
Tuberculosis	1927	
Influenza	1945	Yes
Yellow fever	1953	Yes
Poliomyelitis	1955	Yes
Measles	1963	Yes
Mumps	1967	Yes
Rubella	1969	Yes
Anthrax	1970	Yes
Meningitis	1975	Yes
Pneumonia	1977	Yes
Adenovirus	1980	Yes
Hepatitis B	1981	Yes
Haemophilus influenzae type b	1985	Yes
Japanese encephalitis	1992	Yes
Hepatitis A	1995	Yes
Varicella	1995	Yes
Lyme disease	1998	Yes
Rotavirus	1998	Yes

\* Use in US ended 1971

The list below of approved vaccines is from the Vaccine-Specific Advisory Committee on Immunization Practices (ACIP), National Center for Immunization and Respiratory Diseases (<https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/index.html>), March 2021.

Anthrax (updated Jan 2020)  
 BCG  
 Cholera  
 COVID-19 (added Dec 2020)  
 DTaP-IPV-Hib-HepB (new Mar 2021)  
 DTaP/Tdap/Td (updated Jan 2020)  
 Ebola (new Jan 2021)  
 Hepatitis A (updated Jul 2020)  
 Hepatitis B  
 Hib  
 HPV  
 Influenza (updated Aug 2020)  
 Japanese Encephalitis  
 Measles, Mumps and Rubella  
 MMRV (Measles, Mumps, Rubella, and Varicella)  
 Meningococcal (updated Sep 2020)  
 Pneumococcal  
 Polio  
 Rabies  
 Rotavirus  
 Smallpox (Vaccinia)  
 Typhoid  
 Varicella (Chickenpox)  
 Yellow Fever  
 Zoster (Shingles)

Life expectancies in the US (<https://ourworldindata.org/life-expectancy>) in 1880 were 39.4 years and 81.1 in 2015; double from 1880. The increase, no doubt, due in part to vaccines.

But the gain is also due to reductions in heart disease and strokes in the last 50 years (<https://www.prb.org/wp-content/uploads/2002/12/US Trends heart disease cancer stroke.pdf>). Deaths from heart disease and stroke are less than half of what they were in 1950. The reduction is due to a variety of factors, but in part to the pioneering work of Ed Freis involving trials of patients with hypertension and heart disease trials that followed.