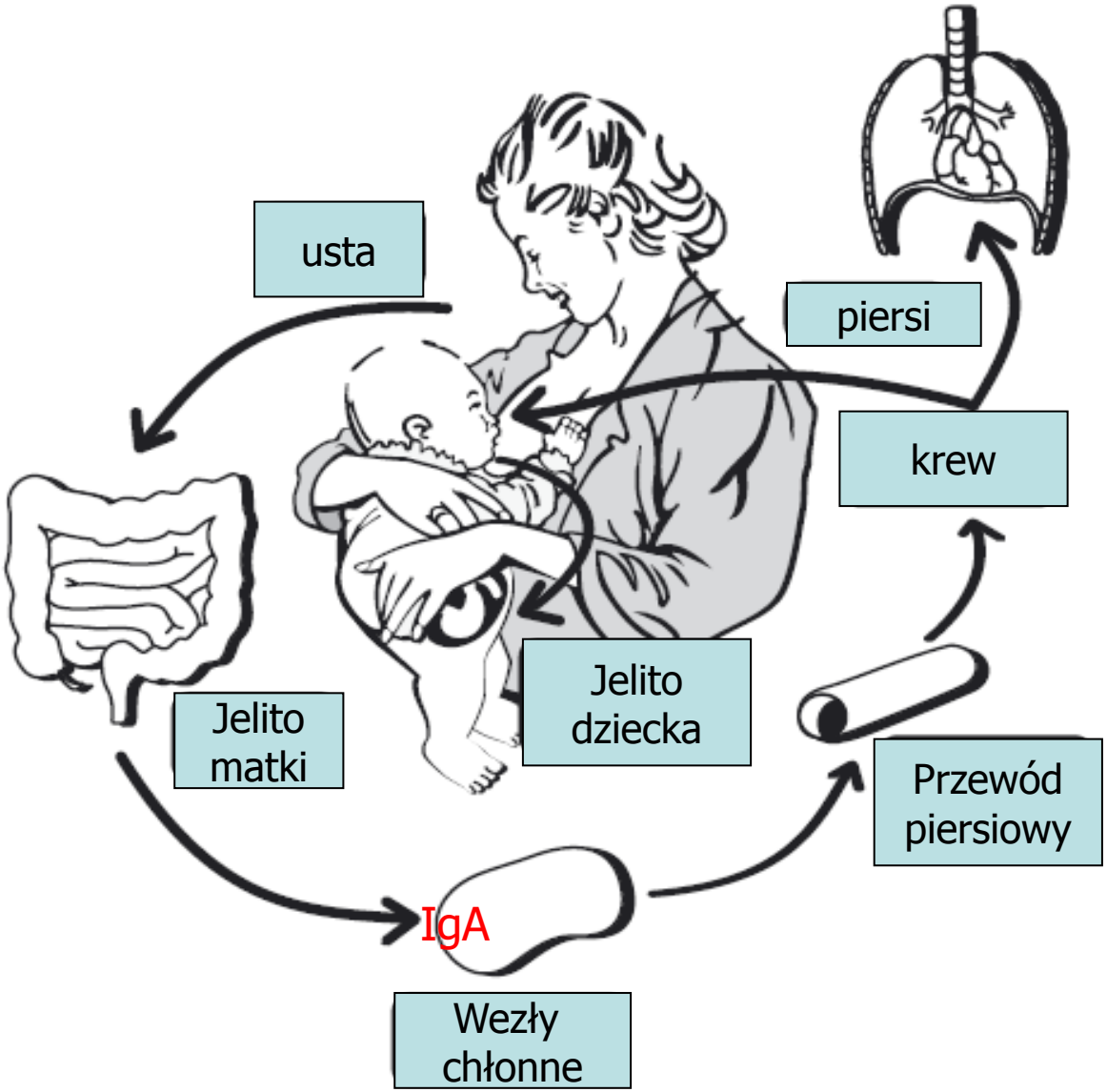
Co to jest szczepionka i jak działa?
Refleksje praktyka

Wojciech Feleszko

40 slajdów

Bierna immunizacja



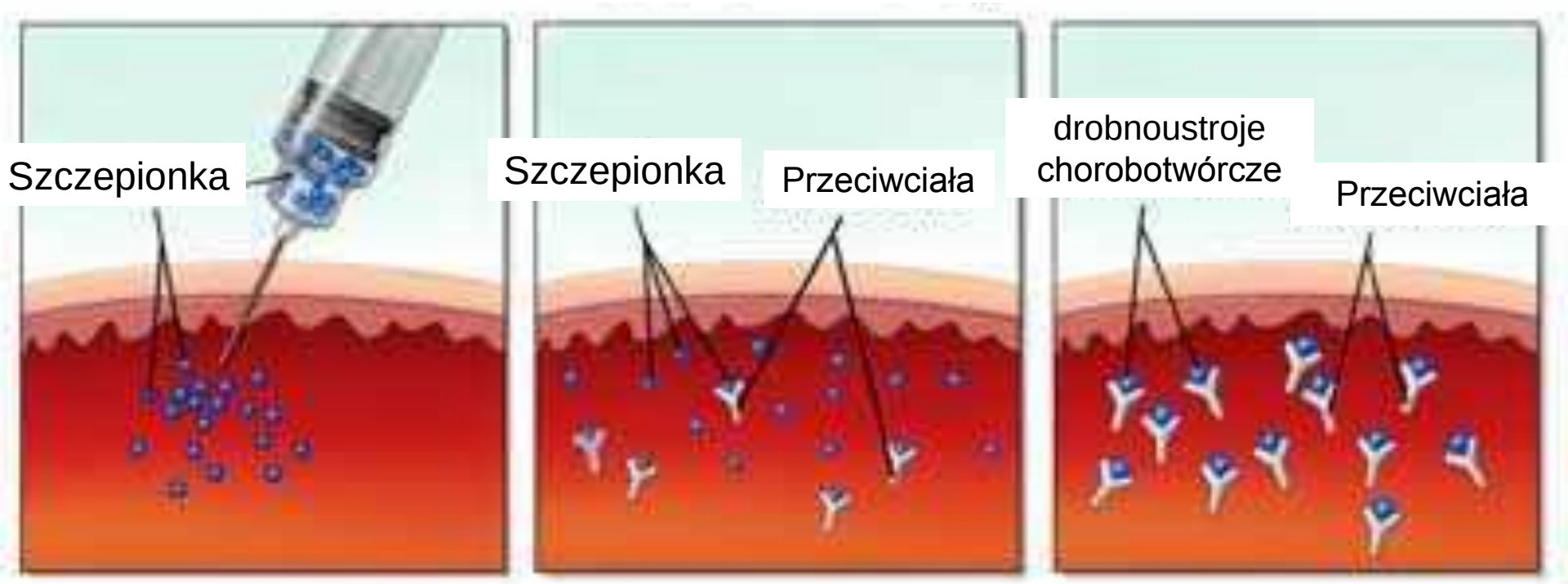
Przeciw-bakteryjne:

- sIgA,
- sIgG,
- sIgM

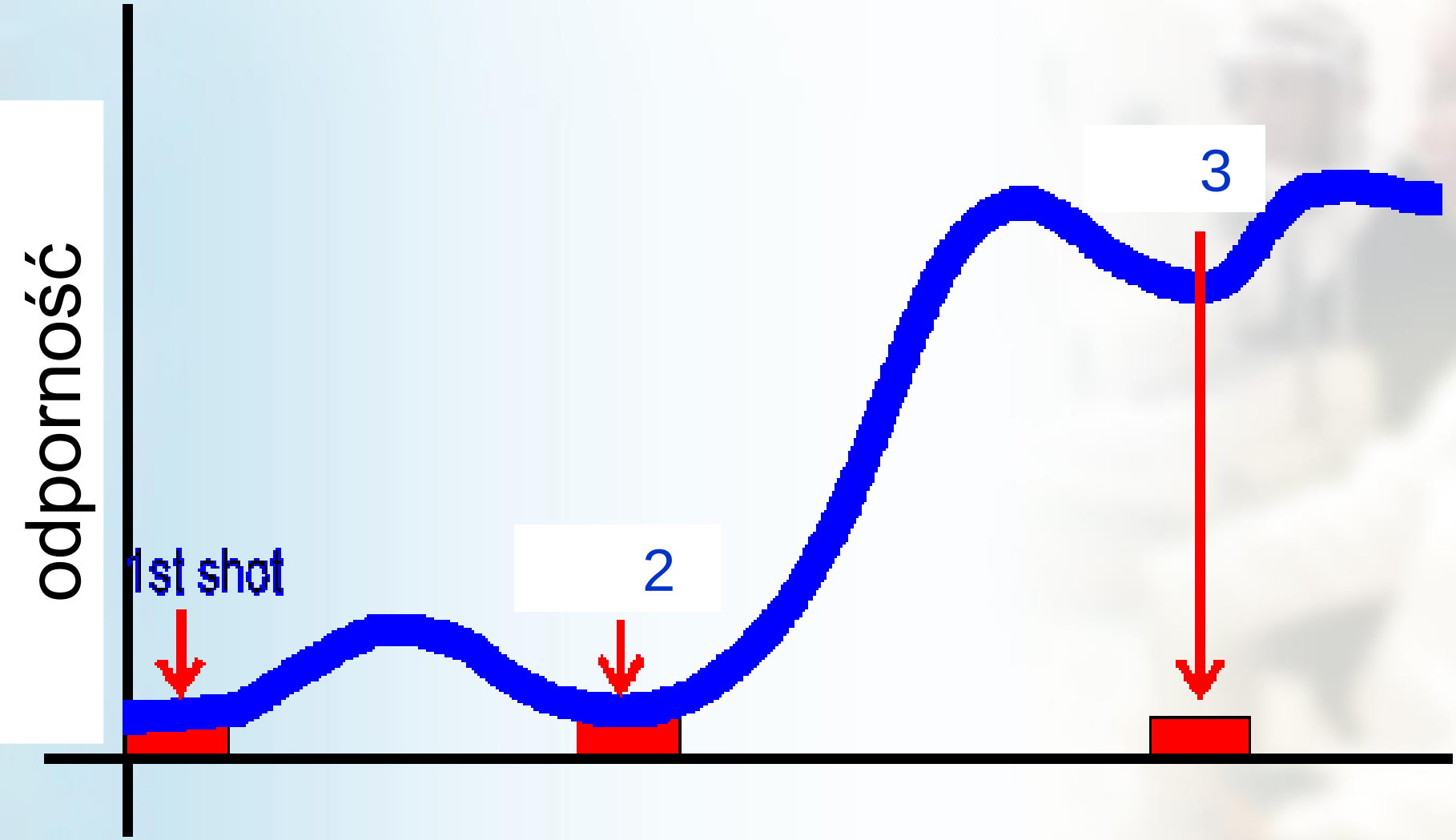
Newburg & Walker (2007) *Pediatr Res*

Aktywna immunizacja

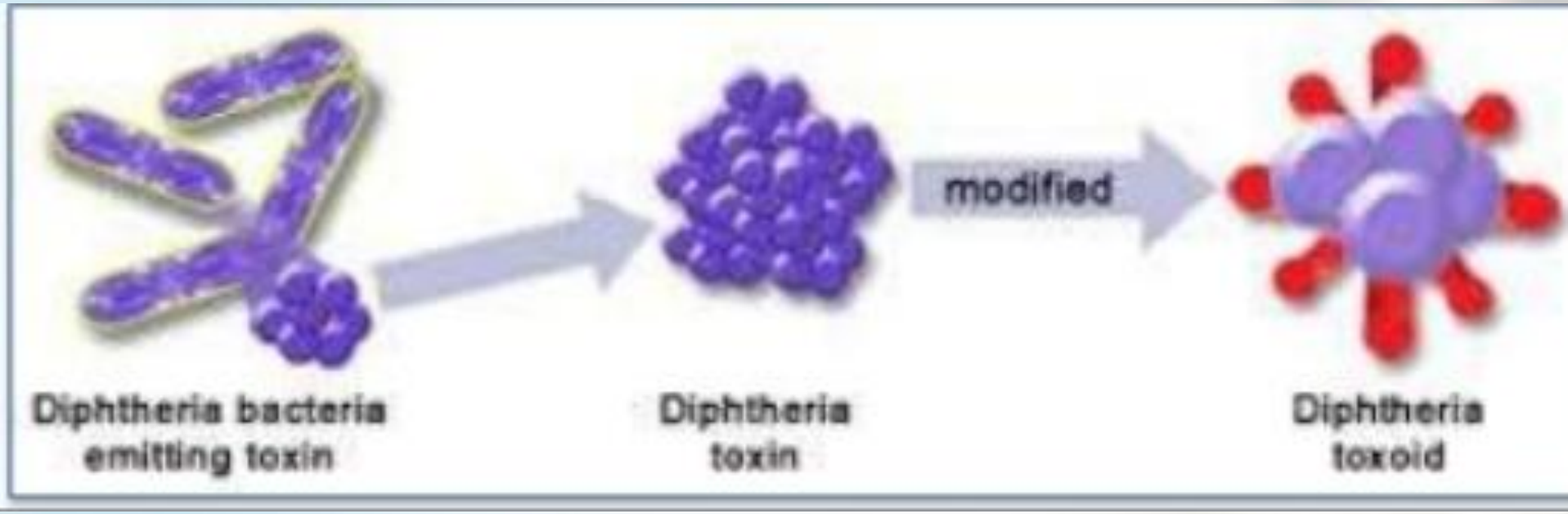
Szczepienia



Szczepienia

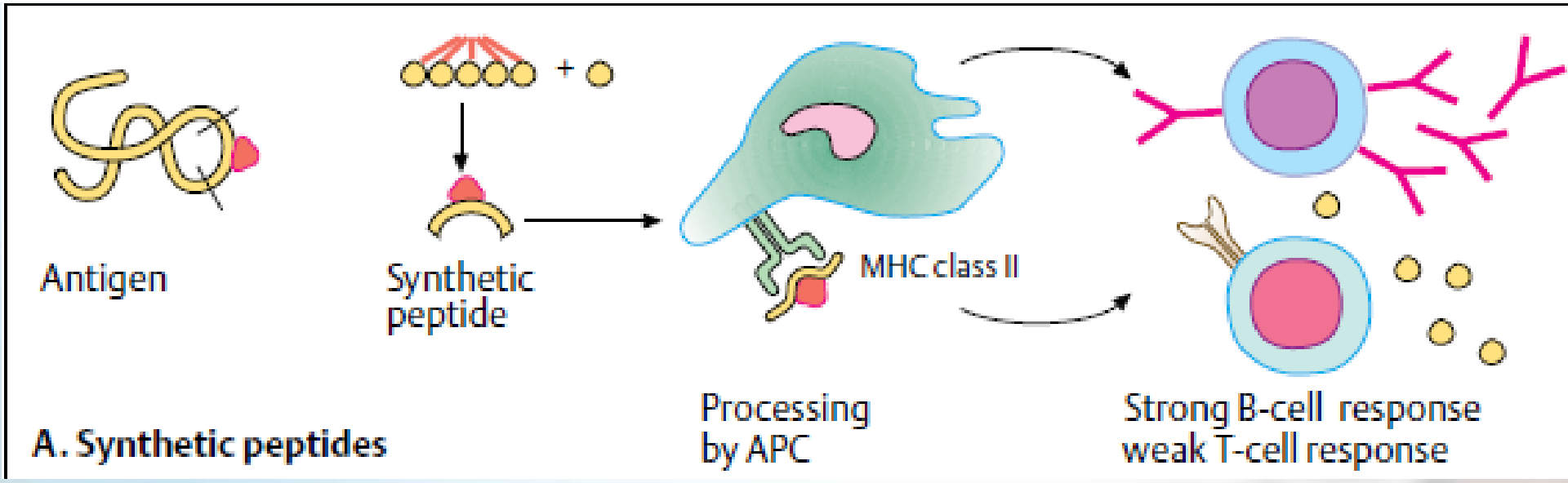


Szczepienia

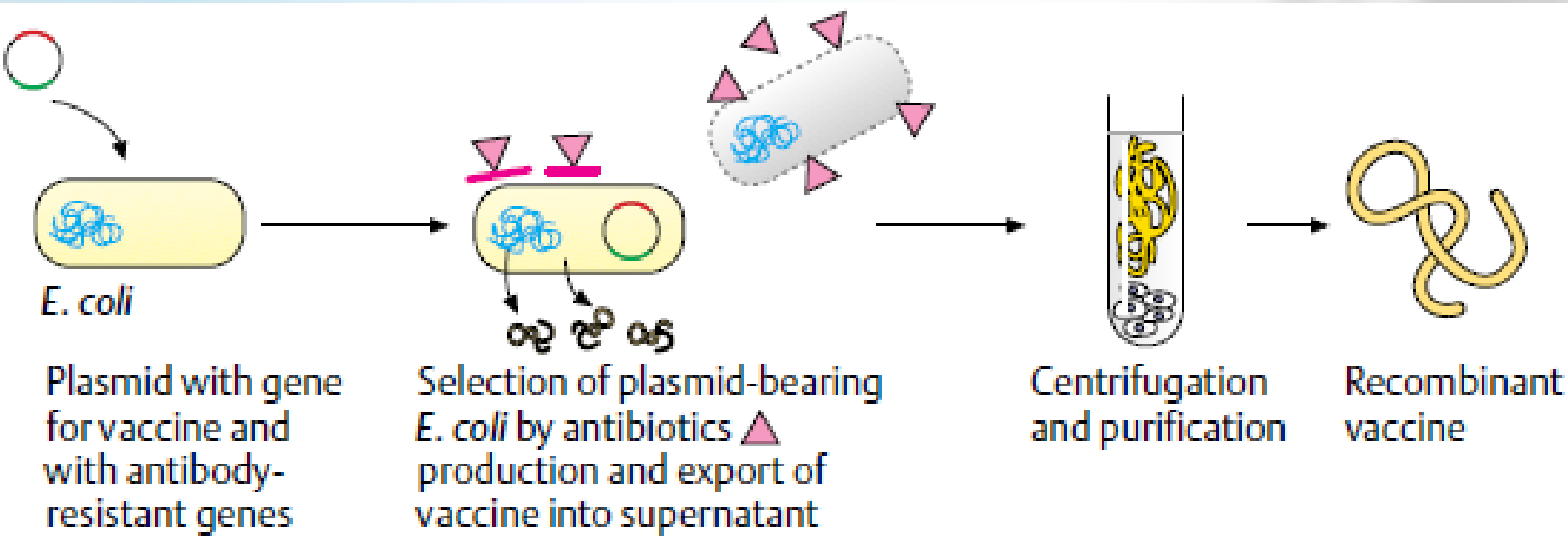

modified
Diphtheria bacteria emitting toxin
Diphtheria toxin
Diphtheria toxoid

Liczba antygenów w szczepionkach

1900		1960		1980		2000	
Szcze-pionka	biał-ka	Szcze-ionka	białka	Szcze-pionka	białka	Szcze-pionka	białka
Ospa krowia	~ 200	Ospa krowia	~ 200	D	1	D	1
		D	1	T	1	T	1
		T	1	Pw	~ 3000	Pa	2-5
		Pw	~ 3000	Polio	15	Polio	15
		polio	15	Odra	10	Odra	10
				Świnka	9	Świnka	9
				Różyczka	5	Różyczka	5
						Hib	2
						Ospa w.	69
						Pn.skonj.	8
						HBV	1
Razem: ~ 200		Razem: ~ 3217		Razem: ~ 3041		Razem: 123-126	



A. Synthetic peptides



B. Recombinant proteins

Liczne szczepienia mogą przeciążyć układ immunologiczny..?

arytmetyka:

- *Każde niemowlę może odpowiedzieć na 10.000 szczepionek jednorazowo !!!*
- *Podając*

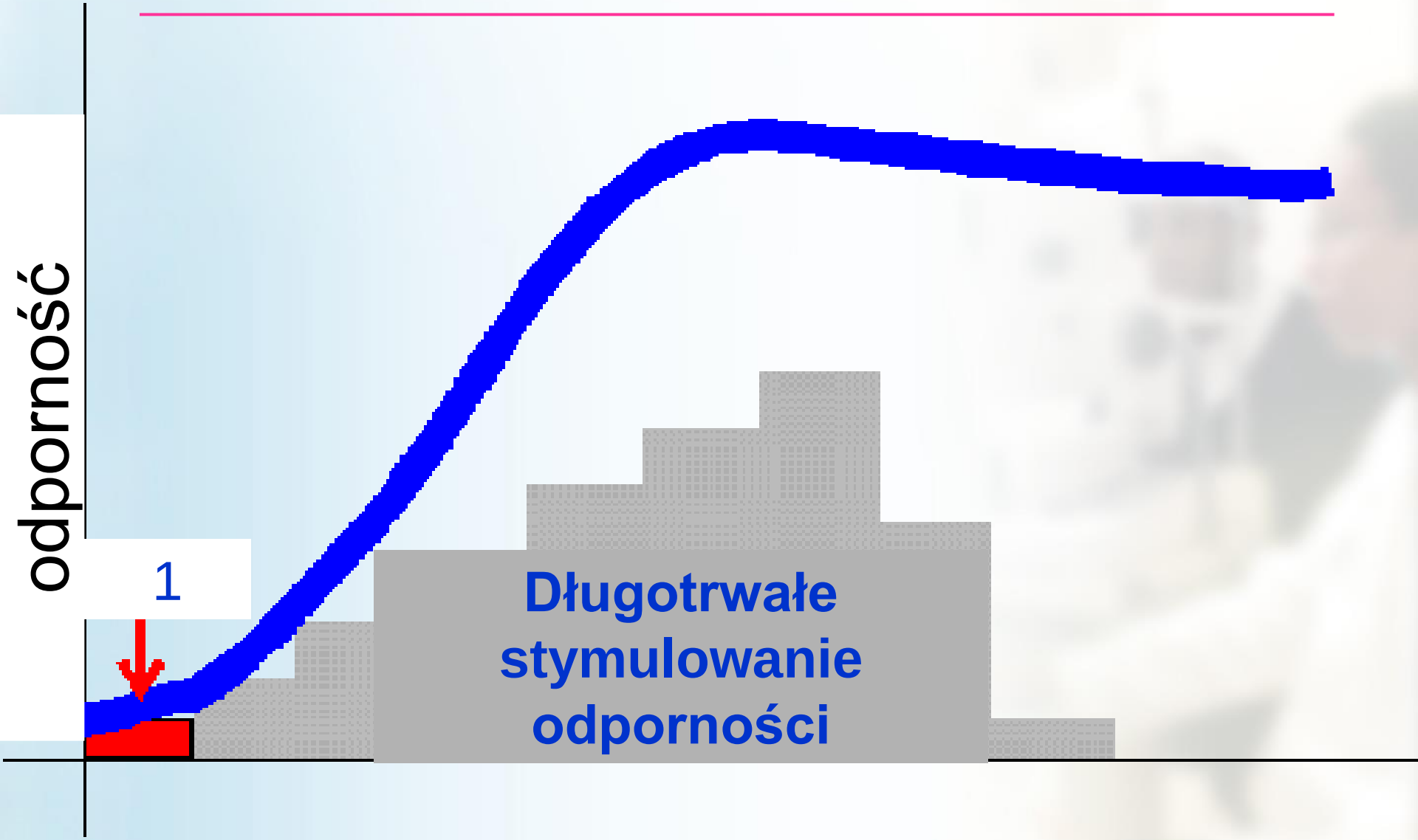
jednorazowo nawet 10 szczepionek

angażujemy

0,1%

układu odpornościowego

Szczepienia ŻYWE !



Po czwarte:

Albert Calmette
(1863-1933)

Camille Guerin
(1872-1961)

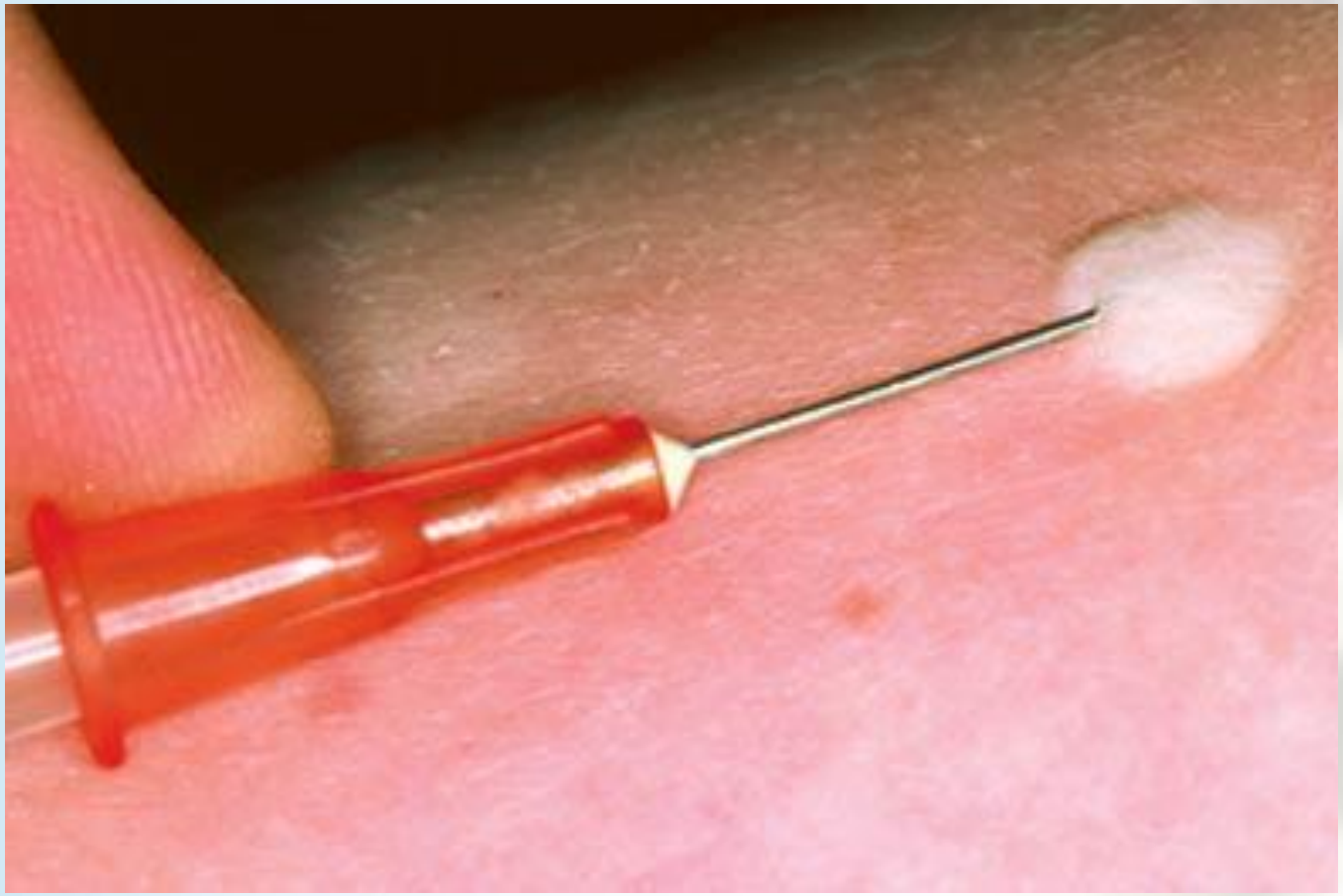
Tuberculous Meningitis. Infant eight months of age. Stage of paralysis, left facial paralysis; left lagophthalmus, bulging fontanelle.

The Historical Medical Library of The College of Physicians of Philadelphia.

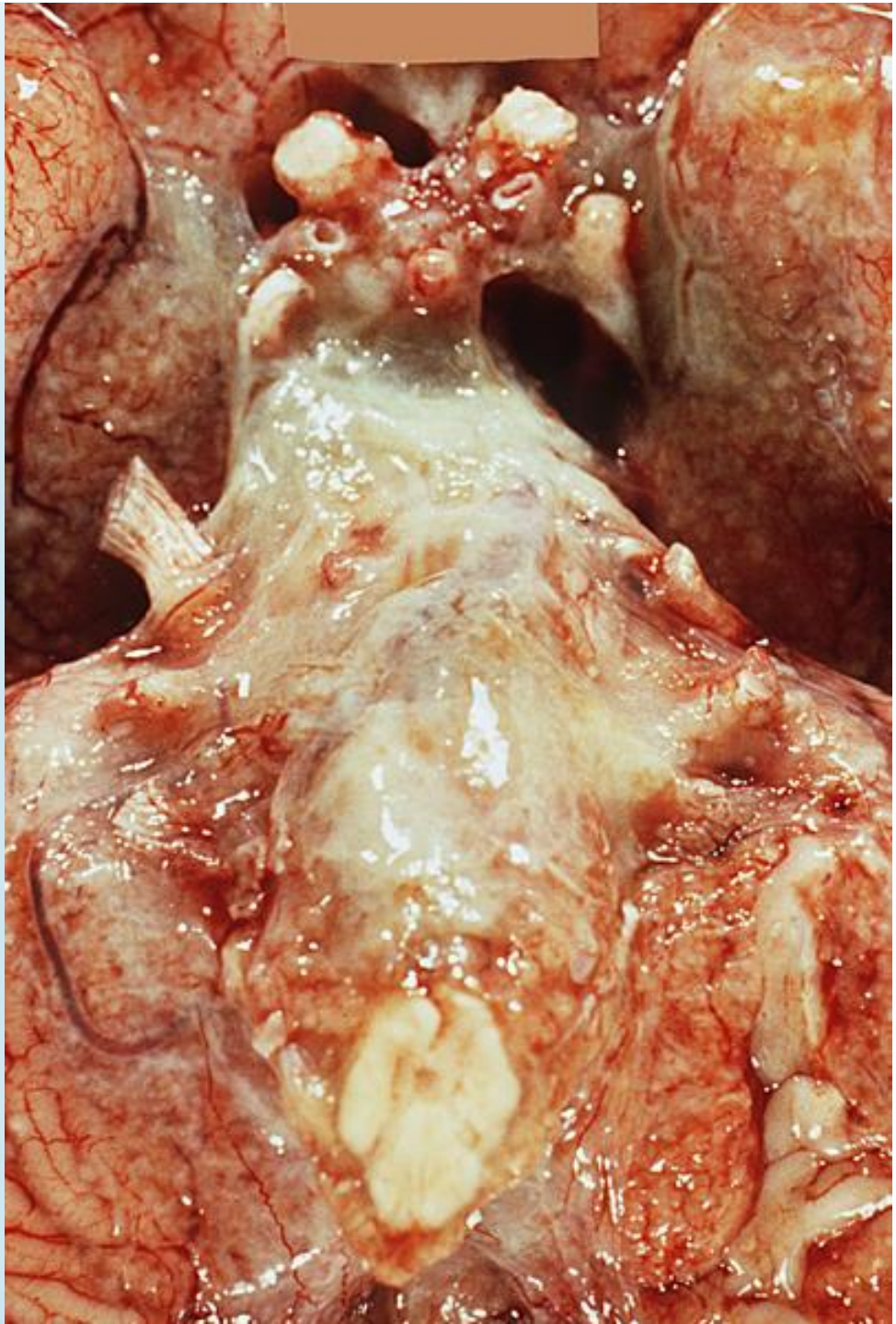
Prątek gruźlicy (zjadliwy)

Mycobacterium tuberculosis

BCG:



The Historical Medical Library of The College of Physicians of Philadelphia.



- Lata 50-60 - **kilkadziesiąt** / rok
- Śmiertelność 10–30%,
- trwałe deficyty neurologiczne 10–50%

- **2011 - 5 / rok**

Liczby

Disease	Max. number of cases	Number of cases in 2000	Percent change
Diphtheria	206,939 (1921)	2	-99.99
Measles	894,134 (1941)	63	-99.99
Mumps	152,209 (1968)	315	-99.80
Pertussis	265,269 (1934)	6,755	-97.73
Polio (paralytic)	21,269 (1952)	0	-100.0
Rubella	57,686 (1969)	152	-99.84
Tetanus	1,560 (1923)	26	-98.44
Haemophilus influenzae type B	~20,000 (1984)	1,212	-93.14
Hepatitis B	26,611 (1985)	6,646	-75.03

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Epidemia polio lata 50-te

All Local Teams Are

Journal American

7 WALL ST SPECIAL

SALK'S VACCINE WORKS!

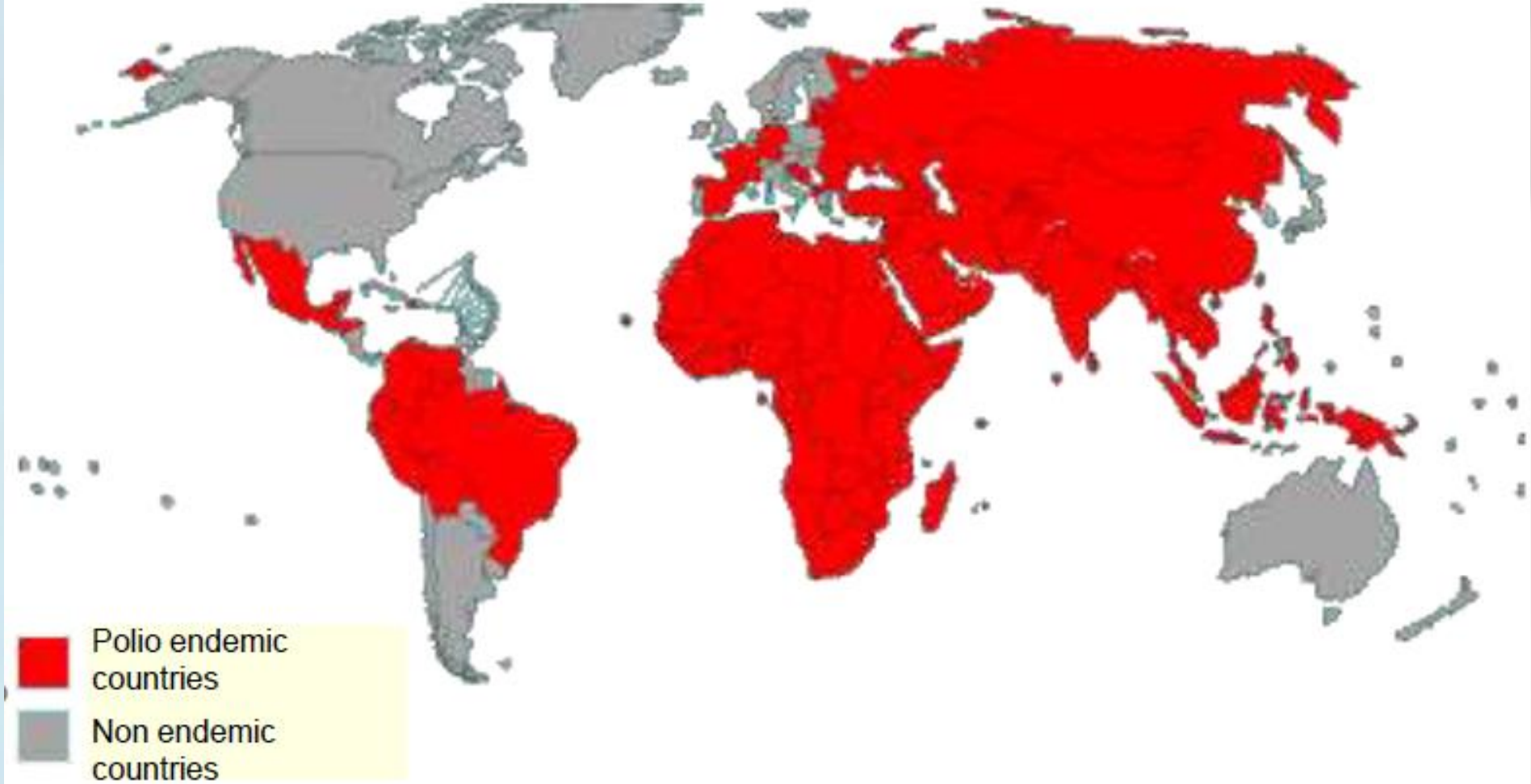
Official Count

Polio Vaccine Reported 80 to 90% Effective

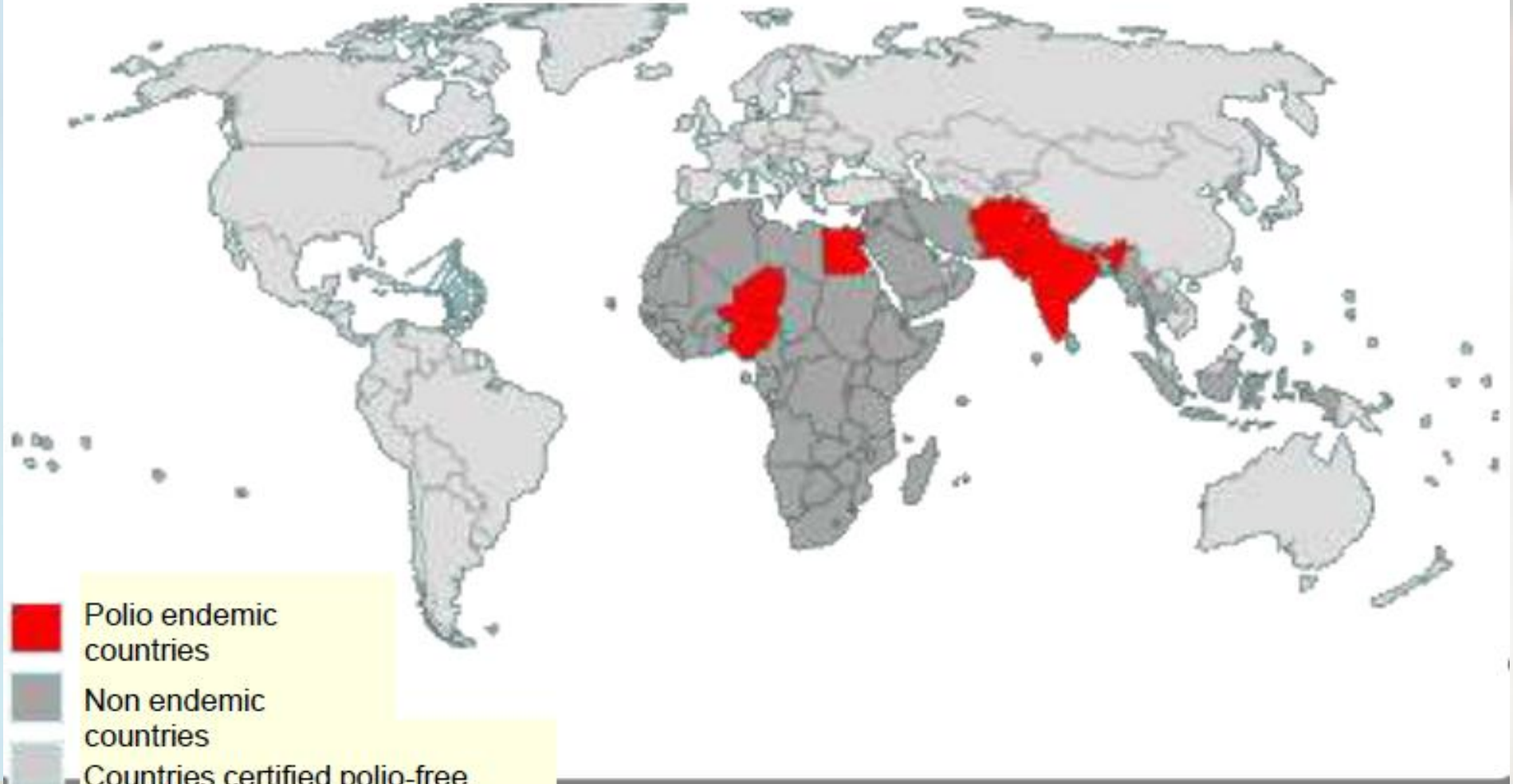
All Local Teams Are Ruled Out

1954 – Frank Enders dostaje Nobla

Występowanie Polio w 1988



Występowanie Polio w 2003



Tężec i krztusiec w Polsce

Tężec	zgony / zachorowania	Krztusiec	zgony / zachorowania
1951	308 / 328	**1951**	1377 / 23 942
1964	147 / 321	**1964**	134 / 29 391
1973	51 / 121	**1973**	9 / 3 148
1983	55 / 112	**1983**	0 / 185
1993	26 / 51	**1993**	0 / 314
1998	13 / 22	**1998**	0 / 2 871

Odra i błonica w Polsce

Odra

	zgony / zachorowania
1955	365 / 86 649
1964	256 / 131 534
1973	109 / 196 109
1983	5 / 11 271
1993	0 / 1 410
1999	0 / 99
2007	0/ 120

Błonica

	zgony / zachorowania
1951	3143 / 36 369
1964	55 / 731
1973	3 / 14
1983	0 / 1
1993	0 / 10
1998	0 / 0

Zaprzestanie szczepień przeciwko błonicy w ZSRR:

- ***Ludność 291 milionów***

1994	***47 628***	***zachorowań***
1995	***50 412***	***zachorowań***

> 1500 zgonów

Mity na temat szczepień

„Szczepionki powodują szkodliwe działania uboczne, zachorowania a nawet zgony”

Pubd June 10th 1804 by H. Humphrey St. James's Street

The Cow-Pock — or — the Wonderful Effects of the New Inoculation! — Vide. the Publications of ye Anti-Vaccine Society.

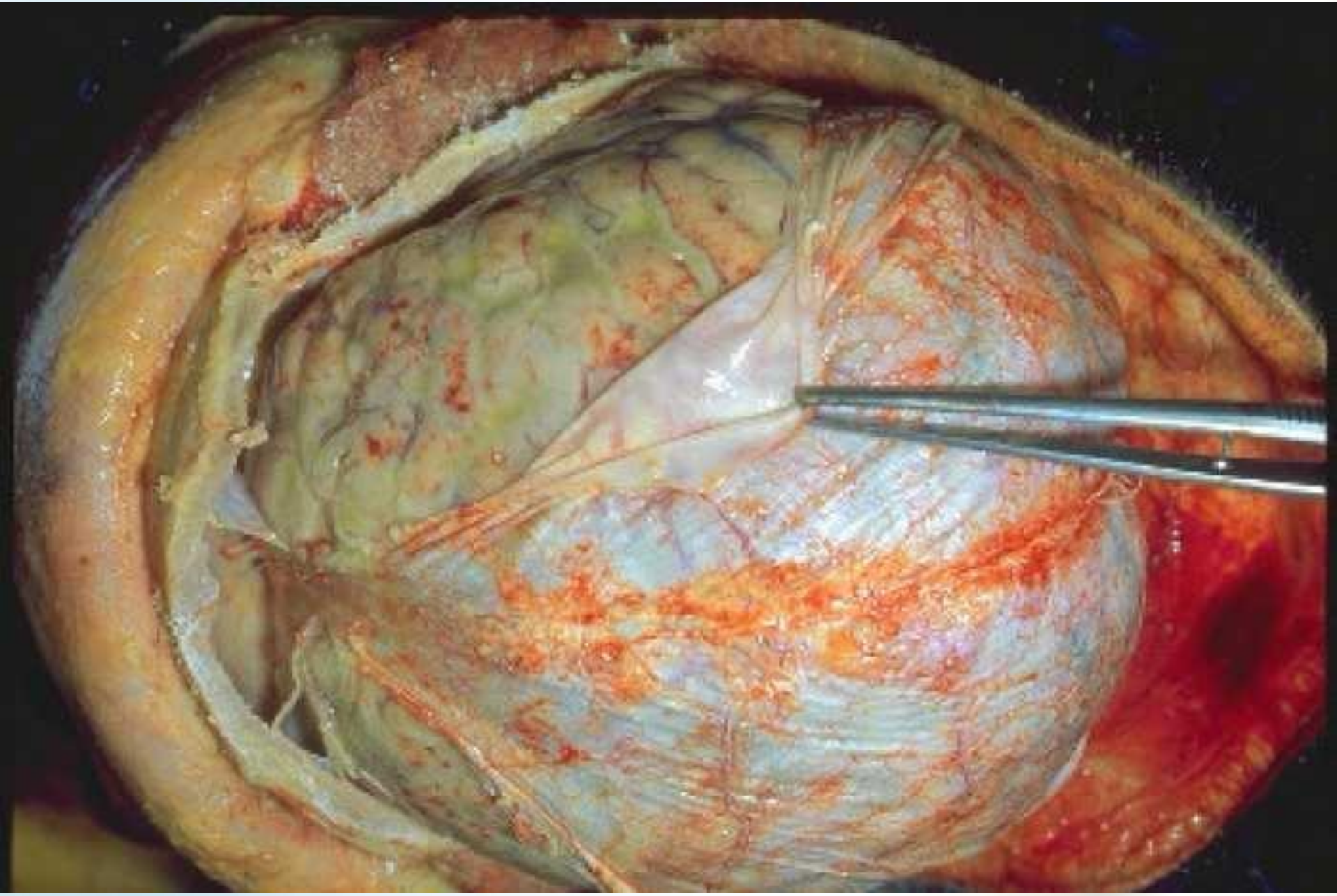
Mity na temat szczepień

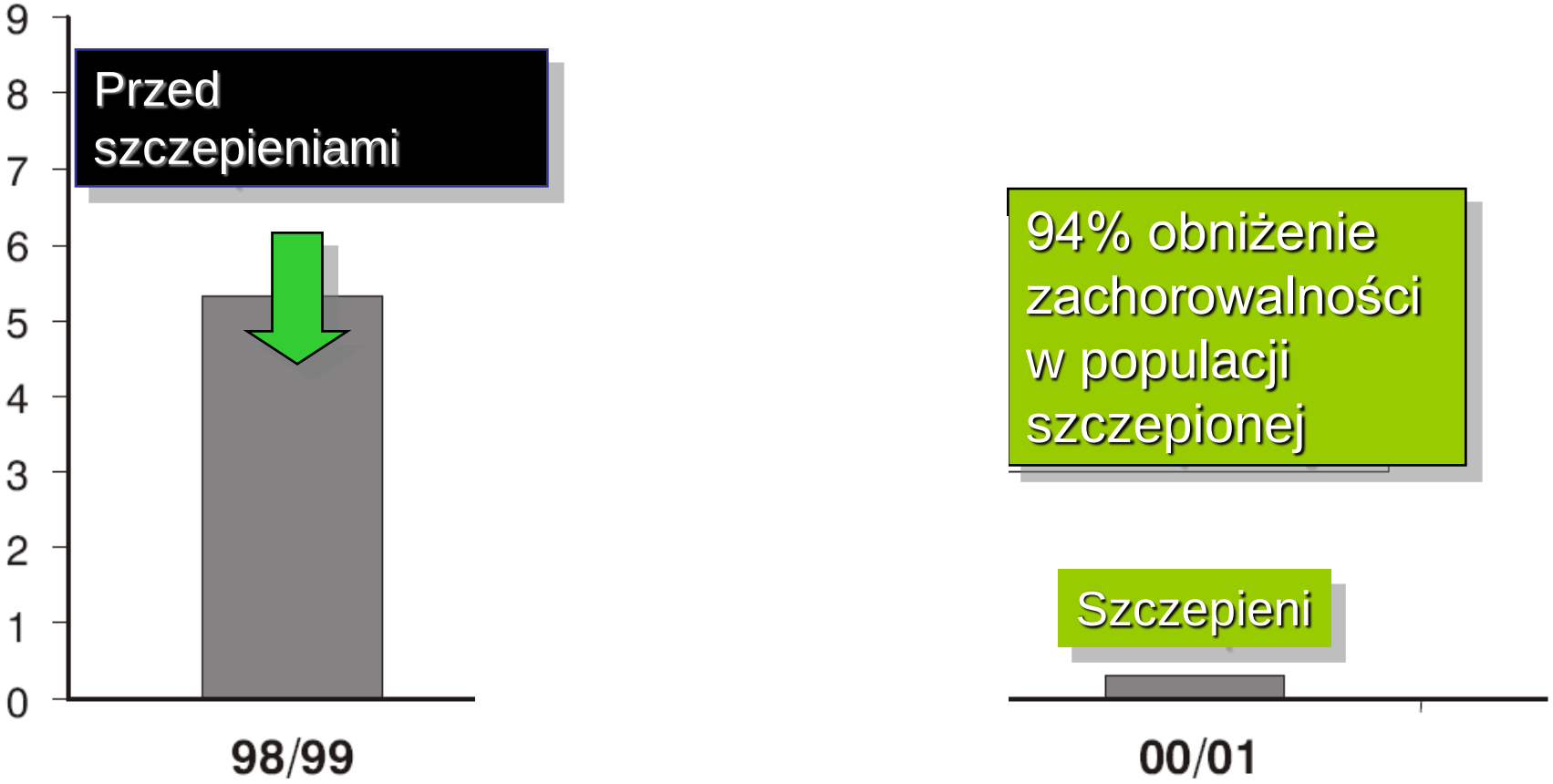
„Lepiej naturalnie przechorować niż sztucznie się zaszczepić”

meningokoki

N.meningitidis

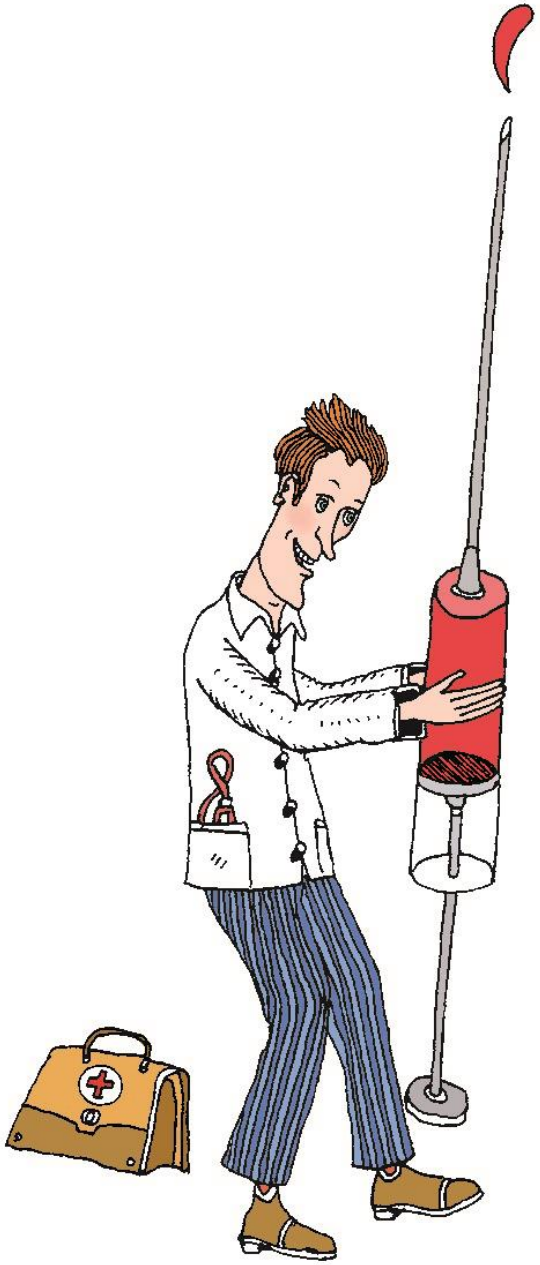
A
C
B
D



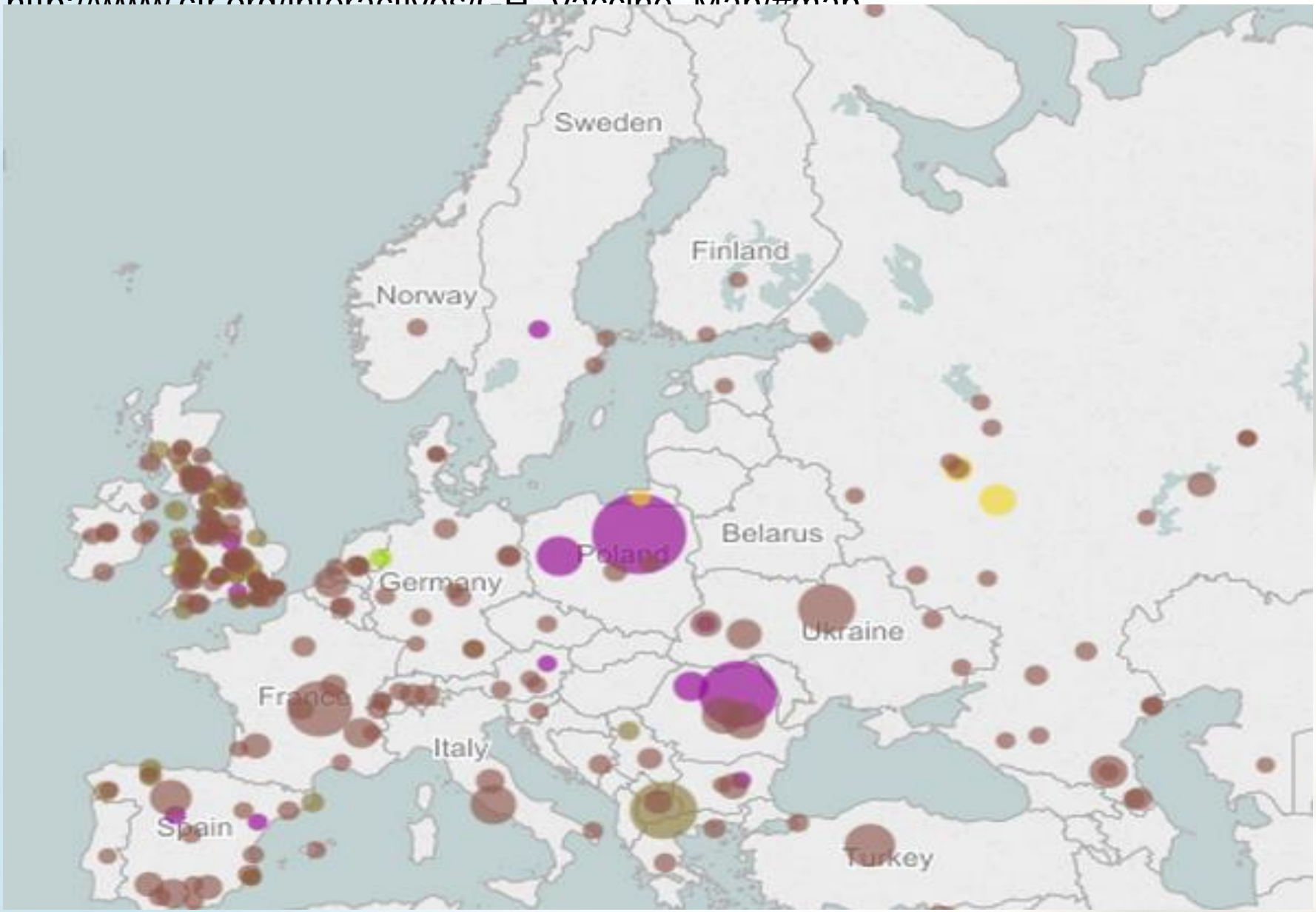


Ramsay ME, et al. BMJ. 2003;326:365-6

Dziękuję



COUNCIL on FOREIGN RELATIONS

Vaccine-Preventable Outbreaks

http://www.cfr.org/interactives/GH_Vaccine_Map/#map