“Wat met een biological?

Prof. Dr. Heidi Theeten
(UAntwerpen/dept. Zorg)

Vraag: allergie en vaccinatie

“Is het geloof in vaccins niet te groot?

Beseffen we voldoenden de gevolgen op lange termijn?

Is er een verband tussen vaccinatie en de exponentiële toename van allergieën en auto-immuunziekten in de westerse wereld?”

Prof. dr. Didier Ebo (UAntwerpen – UZA)

Is het geloof niet te groot?
1 figuur … 1000 woorden

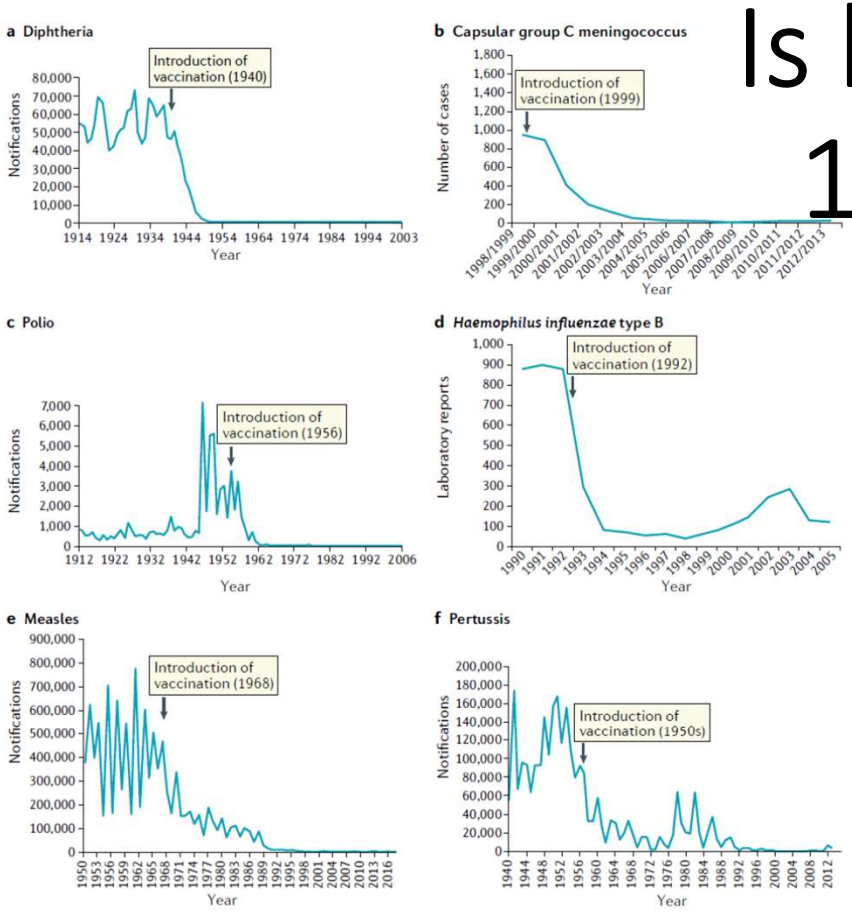


Fig. 1 | **The impact of vaccination on selected diseases in the UK.** The introduction of vaccination against infectious diseases such as diphtheria (part **a**), capsular group C meningococcus (part **b**), polio (part **c**), *Haemophilus influenzae* type B (part **d**), measles (part **e**) and pertussis (part **f**) led to a marked decrease in their incidence. Of note, the increase in reports of *H. influenzae* type B in 2001 led to a catch-up vaccination campaign, after which the incidence reduced. For pertussis, a decline in vaccine coverage led to an increase in cases in the late 1970s and 1980s, but disease incidence reduced again after vaccine coverage increased. Adapted with permission from the Green Book, information for public health professionals on immunisation, Public Health England, contains public sector information licensed under the Open Government Licence v3.0.

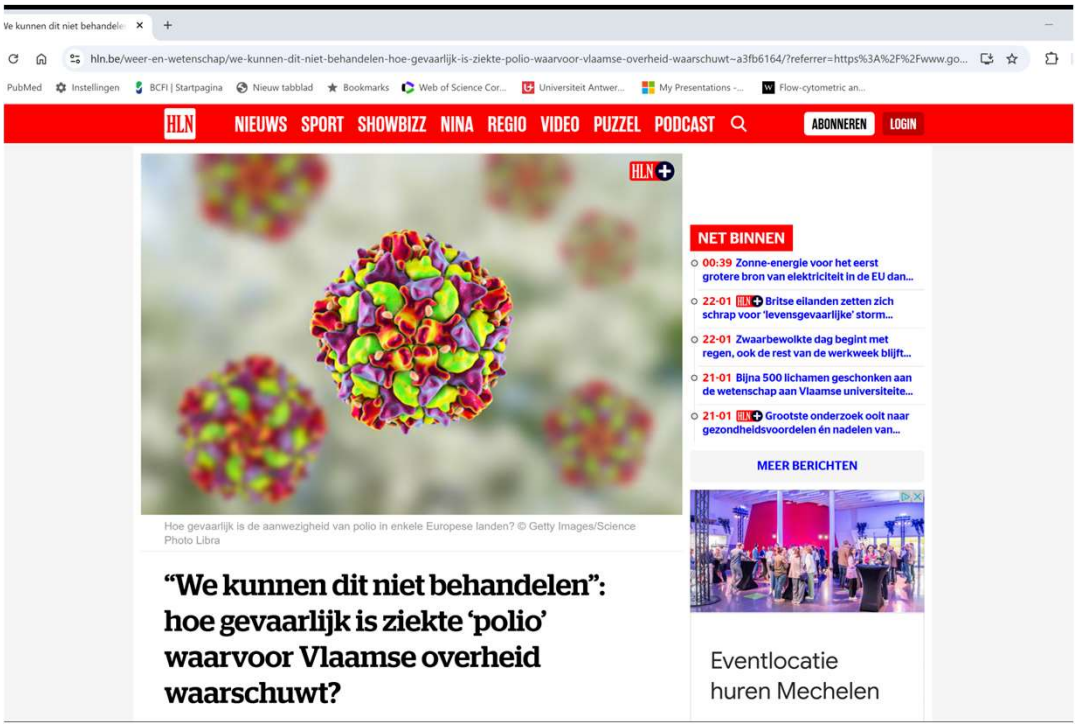
REVIEWS

Check for updates

A guide to vaccinology: from basic principles to new developments

Andrew J. Pollard[1,2]✉ *and Else M. Bijker*[1,2]

Is het geloof niet te groot?
1 figuur … 1000 woorden



Gevolgen op lange termijn: toename allergie?

Accepted: 26 July 2017
DOI: 10.1111/pai.12762

REVIEW ARTICLE

WILEY

Vaccination and allergy: EAACI position paper, practical aspects

Lennart Nilsson[1] | Knut Brockow[2] | Johan Alm[3] | Victoria Cardona[4] | Jean-Christoph Caubet[5] | Eva Gomes[6] | Maria C. Jenmalm[7] | Susanne Lau[8] | Eva Netterlid[9,10] | Jürgen Schwarze[11] | Aziz Sheikh[12] | Jann Storsaeter[13] | Chrysanthi Skevaki[14] | Ingrid Terreehorst[15] | Giovanna Zanoni[16]

Pediatr Allergy Immunol. 2017;28:628–640.

Abstract

Immunization is highly effective in preventing infectious diseases and therefore an indispensable public health measure. Allergic patients deserve access to the same publicly recommended immunizations as non-allergic patients unless risks associated with vaccination outweigh the gains. Whereas the number of reported possible allergic reactions to vaccines is high, confirmed vaccine-triggered allergic reactions are rare. Anaphylaxis following vaccination is rare, affecting <1/100 000, but can occur in any patient. Some patient groups, notably those with a previous allergic reaction to a vaccine or its components, are at heightened risk of allergic reaction and require special precautions. Allergic reactions, however, may occur in patients without known risk factors and cannot be predicted by currently available tools. Unwarranted fear and uncertainty can result in incomplete vaccination coverage for children and adults with or without allergy. In addition to concerns about an allergic reaction to the vaccine itself, there is fear that routine childhood immunization may promote the development of allergic sensitization and disease. Thus, although there is no evidence that routine childhood immunization increases the risk of allergy development, such risks need to be discussed.

KEYWORDS

adjuvant, adverse event, allergy, anaphylaxis, vaccination

Gevolgen op lange termijn: toename auto-immuunziekten?

Review > Inflamm Allergy Drug Targets. 2015;14(2):94-8.
doi: 10.2174/1871528114666160105113046.

Vaccination and Induction of Autoimmune Diseases

Éric Toussirot [1], Matthieu Bereau

Affiliations + expand

PMID: 26728772 DOI: 10.2174/1871528114666160105113046

Abstract

Vaccines have been suspected of playing a role in inducing autoimmune disease (AID) for a long time. However, apart from certain specific vaccine strains and complications (such as the swine flu vaccine and Guillain-Barré syndrome in 1976, thrombocytopenia and the Measles-Mumps-Rubella vaccine), this role has not been established. In spite of this, many isolated cases or series of cases of arthritis, vasculitis, and central or peripheral nervous system symptoms following vaccination have been reported. These cases tend to be very infrequent and usually only the shortterm outcomes are described. This paper will examine the arguments for and against the relationship between vaccines and AID, bearing in mind that no association between the two has been clearly identified up to now. The role of adjuvants in vaccines has been described by other teams and in a more general syndrome (Autoimmune/Autoinflammatory Syndrome Induced by Adjuvants). Thus, cases of AID triggered by vaccines are highly rare and raise questions about the interaction between vaccines and/or their adjuvants and the genetic context of autoimmune disease. These observations should therefore not undermine the benefits of vaccination.

Vaccinatie bij auto-immuunziekten?
"Yes we can"

Arthritis Care & Research
Vol. 75, No. 3, March 2023, pp 449–464
DOI 10.1002/acr.25045

AMERICAN COLLEGE of RHEUMATOLOGY
Empowering Rheumatology Professionals

2022 American College of Rheumatology Guideline for Vaccinations in Patients With Rheumatic and Musculoskeletal Diseases

Anne R. Bass,[1] Eliza Chakravarty,[2] Elie A. Akl,[3] Clifton O. Bingham,[4] Leonard Calabrese,[5] Laura C. Cappelli,[4] Sindhu R. Johnson,[6] Lisa F. Imundo,[7] Kevin L. Winthrop,[8] Reuben J. Arasaratnam,[9] Lindsey R. Baden,[10] Roberta Berard,[11] S. Louis Bridges Jr.,[1] Jonathan T. L. Cheah,[12] Jeffrey R. Curtis,[13] Polly J. Ferguson,[14] Ida Hakkarinen,[15] Karen B. Onel,[1] Grayson Schultz,[16] Vidya Sivaraman,[17] Benjamin J. Smith,[18] Jeffrey A. Sparks,[10] Tiphanie P. Vogel,[19] Eleanor Anderson Williams,[20] Cassandra Calabrese,[5] Joanne S. Cunha,[21] Joann Fontanarosa,[22] Miriah C. Gillispie-Taylor,[19] Elena Gkrouzman,[12] Priyanka Iyer,[23] Kimberly S. Lakin,[1] Alexandra Legge,[24] Mindy S. Lo,[25] Megan M. Lockwood,[26] Rebecca E. Sadun,[27] Namrata Singh,[28] Nancy Sullivan,[22] Herman Tam,[29] Marat Turgunbaev,[30] Amy S. Turner,[30] and James Reston[22]

Recombinant VZV vaccination

For patients with RMD age >18 years who are taking immunosuppressive medication, administering the recombinant VZV vaccine is **strongly** recommended.

Influenza vaccination

For patients with RMD age ≥65 years and patients with RMD age >18 and <65 years who are taking immunosuppressive medication, giving high-dose or adjuvanted influenza vaccination is **conditionally** recommended over giving regular-dose influenza vaccination.

Pneumococcal vaccination

For patients with RMD age <65 years who are taking immunosuppressive medication, pneumococcal vaccination is **strongly** recommended.

HPV vaccination

For patients with RMD age >26 and <45 years who are taking immunosuppressive medication and are not previously vaccinated, vaccination against HPV is **conditionally** recommended.

Results. This guideline includes expanded indications for some vaccines in patients with RMDs, as well as guidance on whether to hold immunosuppressive medications or delay vaccination to maximize vaccine immunogenicity and efficacy. Safe approaches to the use of live attenuated vaccines in patients taking immunosuppressive medications are also addressed. Most recommendations are conditional and had low quality of supporting evidence.

Conclusion. Application of these recommendations should consider patients' individual risk for vaccine-preventable illness and for disease flares, particularly if immunosuppressive medications are held for vaccination. Shared decision-making with patients is encouraged in clinical settings.

New Research Suggests Increased Risk of Some Autoimmune Disorders After COVID-19

New research suggests SARS-CoV-2 infection may increase the long-term risk of autoimmune or autoinflammatory connective tissue disorders.

People who contracted COVID-19 were more likely to develop conditions such as alopecia, vitiligo, Crohn disease, ulcerative colitis, rheumatoid arthritis, and systemic lupus erythematosus, among others. These disorders were more prevalent in unvaccinated individuals, those with severe COVID-19, and people infected with the Delta variant, the study found.

The population-based study, published in *JAMA Dermatology*, included more than 6.9 million people in the National Health Insurance Service of Korea database, about half of whom had COVID-19. The researchers acknowledged that single-ethnicity participation may limit the generalizability of their findings, but they highlighted their extended observation period not present in previous research. Whereas prior studies had limited timelines that could miss gradual onsets of disorders, this study followed up with individuals for at least 6 months.

Because the incidence rates—most of which were lower than 1%—reflected the rarity of many of the reported disorders, an accompanying commentary advised against surveillance for autoimmune disease in the absence of symptoms. Still, the authors of the commentary noted, "we should all remain vigilant to the complex interplay between infection and autoimmune disease as SARS-CoV-2 continues to mutate."

Published Online: December 13, 2024. doi:10.1001/jama.2024.24894

pathogens

MDPI

Review

Immune Modulation by Epstein–Barr Virus Lytic Cycle: Relevance and Implication in Oncogenesis

Nevena Todorović [1,2], Maria Raffaella Ambrosio [3] and Amedeo Amedei [1,4,*]

[1] Department of Experimental and Clinical Medicine, University of Florence, 50134 Florence, Italy; nevena.todorovic@unifi.it
[2] Clinic for Infectious and Tropical Diseases, University Clinical Centre of Serbia, 11000 Belgrade, Serbia
[3] Pathology Unit, Azienda Sanitaria Toscana Nord Ovest, 56121 Pisa, Italy; mariaraffaella.ambrosio@uslnordovest.toscana.it
[4] Network of Immunity in Infection, Malignancy and Autoimmunity (NIIMA), Universal Scientific Education and Research Network (USERN), 50139 Florence, Italy
* Correspondence: amedeo.amedei@unifi.it

Abstract: EBV infects more than 90% of people globally, causing lifelong infection. The phases of the EBV life cycle encompass primary infection, latency, and subsequent reactivation or lytic phase. The primary infection usually happens without noticeable symptoms, commonly in early life stages. If it manifests after childhood, it could culminate in infectious mononucleosis. Regarding potential late consequences, EBV is associated with multiple sclerosis, rheumatoid arthritis, chronic active EBV infection, lymphomas, and carcinomas. Previous reports that the lytic phase plays a negligible or merely secondary role in the oncogenesis of EBV-related tumors are steadily losing credibility. The right mechanisms through which the lytic cycle contributes to carcinogenesis are still unclear, but it is now recognized that lytic genes are expressed to some degree in different cancer-type cells, implicating their role here. The lytic infection is a persistent aspect of virus activity, continuously stimulating the immune system. EBV shows different strategies to modulate and avoid the immune system, which is thought to be a key factor in its ability to cause cancer. So, the principal goal of our review is to explore the EBV's lytic phase contribution to oncogenesis.

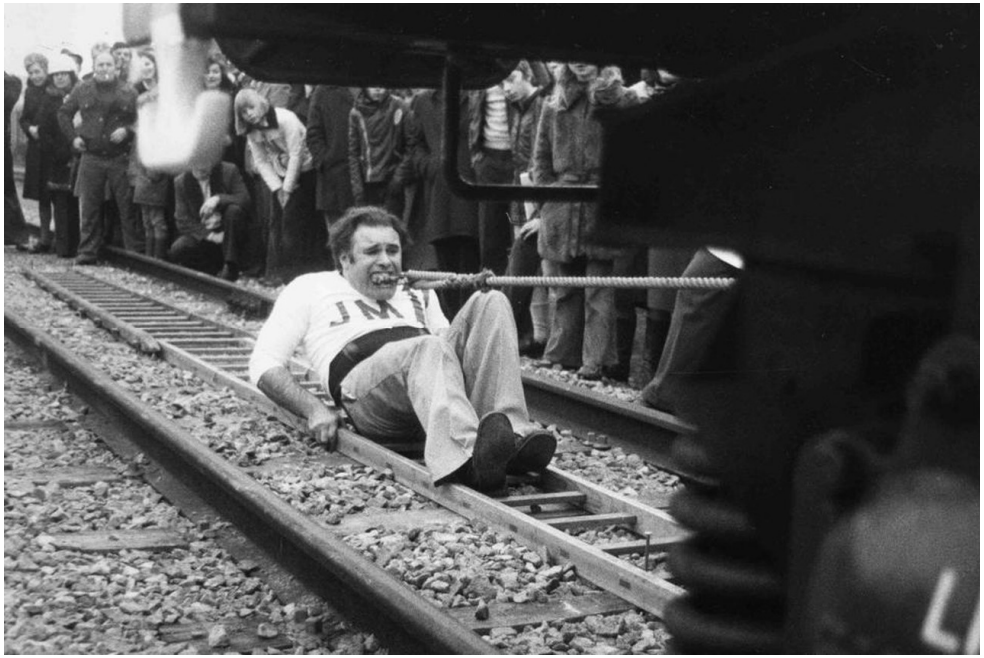
Vraag: immuunrespons

“Bij een vaccinatie reageert het immuunsysteem niet alleen op het virus maar op een heel complex van lichaamsvreemd materiaal (kweekbodems, bewaarstoffen, antibioticaresten, formaldehyde, aluminium, lichaamsvreemd DNA…).

Brengen we ons immuunsysteem niet in de war?”

Prof. dr. Didier Ebo (UAntwerpen – UZA)

Lichaamsvreemd materiaal: dosis sensibilisatie vs elicitatie



Received: 31 December 2018 | Revised: 26 July 2019 | Accepted: 14 August 2019
DOI: 10.1111/bcp.14152

REVIEW

Immune-mediated adverse reactions to vaccines

Cosby A. Stone Jr[1] | Christine R.F. Rukasin[1] | Thomas M. Beachkofsky[2] | Elizabeth J. Phillips[3,4]

TABLE 1 Immediate and delayed excipient-mediated reactions to vaccines

Pre-existing allergen	Excipient causes immediate vaccine reaction	Excipient causes delayed vaccine reaction	Relevant vaccines
Foods:			• MMR
Gelatine	Yes[25-29,32,114-117]	Not reported	• MMRV • varicella • yellow fever • zoster
Alpha-gal	Yes, in some allergic recipients[28,29,118] alpha-gal may confound the diagnosis for some gelatine allergies, or require co-presence of gelatine allergy to cause reaction.	Not reported	• MMR • MMRV • varicella • zoster Potential concern: • intranasal live attenuated influenza vaccine • yellow fever
Egg	Yes[24,119]	Not reported	Potential concern: • rabies • yellow fever Previous concern, no longer clinically relevant: • influenza[31,120-130] • MMR[30,131,132]
Cow's milk (severe)	Possible[133-135]	Not reported	• DTaP, Tdap • OPV
Chicken	Possible[136]	Not reported	• yellow fever
Yeast	Possible[137]	Not reported	• hepatitis B
Nonfoods:			
Preservatives/adjuvants (aluminium, thimerosal, phenoxyethanol)	Yes, thimerosal in 1 patient with preceding contact allergy[34] Aluminium and phenoxyethanol Possible[138,139]	Reports typically describe large local reaction with positive patch testing.[140-146] Disseminated rash[147,148] and sterile granulomas/abscesses[149-151] also reported.	Various[19,152,153] • aluminium used as adjuvant • Thimerosal used as preservative; overall use is declining • Phenoxyethanol used as preservative
Antimicrobials (neomycin, polymyxin B, kanamycin, gentamicin, streptomycin, chlorotetracycline and amphotericin B)	Possible[154,155]	Reports typically describe large local reaction and positive patch testing.	Various[19,152,153]
Latex	Yes[156,157]	Contact allergy to latex very common but does not appear to increase vaccine reactions.	Vaccines with rubber latex in syringes, vials, diluents, caps or packaging[19] are becoming less common. Most experts recommend vaccination followed by observation.[19]
Dextran	Yes, possibly non-IgE mediated.[158,159]	Not reported	No vaccines containing dextran currently available on the market.
Polysorbates/polyethylene glycols	One case reported.[160] Immediate IgE mediated hypersensitivity has recently been reported and sensitization	Not reported	Various[19,152,153] • HPV vaccine reported[160]

In summary, adverse reactions to vaccines that are either the direct result of an immune-mediated reaction to the vaccine excipient, the active components of the vaccine or related to host immunodeficiency are rare (Table 2) and fortunately defined diagnosis and management strategies exist (Figure 4). Although many immune-mediated va- reactions lack risk factors and mechanisms, excipien+ immune deficiency are 2 known mechanisms h- system precipitates adverse events aft- -pecific mechanisms and immunological r- -cell mediated illnesses such as SJS/TE- -urological conditions such as Guillain–B- -accination are not known but may be l- -o a vaccine than the natural viral ill- n- -y has been obtained and the implementation -ategies was performed (egg, gelatine allergy), there -n associated increases in safety and confidence. Improved understanding of mechanistic risk factors for severe immunologically mediated vaccine reactions and a shift toward mechanistic causality assessment are crucial future directions for maintaining this vital public health intervention.

Immune-mediated reactions to active components and excipients are rare

Received: 31 December 2018 | Revised: 26 July 2019 | Accepted: 14 August 2019
DOI: 10.1111/bcp.14112

REVIEW

BJCP BRITISH PHARMACOLOGICAL SOCIETY

Immune-mediated adverse reactions to vaccines

Cosby A. Stone Jr[1] | Christine R.F. Rukasin[1] | Thomas M. Beachkofsky[2] | Elizabeth J. Phillips[3,4]

Vraag: overreactie?

“Induceren we met vaccinatie niet een over-reactief immuunsysteem?”

Prof. dr. Didier Ebo (UAntwerpen – UZA)

Vraag: overreactie?

“Helaas meestal wordt er in de meeste gevallen geen verband aangetoond tussen ernstige neveneffecten en vaccinatie. Conclusie: niet bewezen dus er is geen verband.

Wetenschap dient te onderzoeken wat we (nog) niet weten.”

Prof. dr. Didier Ebo (UAntwerpen – UZA)

Received: 31 December 2018 | Revised: 26 July 2019 | Accepted: 14 August 2019
DOI: 10.1111/bcp.14112

REVIEW

Immune-mediated adverse reactions to vaccines

Cosby A. Stone Jr[1] | Christine R.F. Rukasin[1] | Thomas M. Beachkofsky[2] | Elizabeth J. Phillips[3,4]

[1]Division of Allergy, Pulmonary and Critical Care Medicine, Department of Medicine, Vanderbilt University School of Medicine, Nashville, Tennessee, USA
[2]Department of Dermatology, 6MDG, MacDill Air Force Base, Florida, USA
[3]Department of Medicine, Vanderbilt University Medical Center, Nashville, Tennessee, USA
[4]Vanderbilt University Medical School, Nashville, Tennessee

Correspondence
Elizabeth J. Phillips, MD, Vanderbilt University Medical Center, 1161 21 Avenue South, Nashville, TN 37232, USA.
Email: elizabeth.j.phillips@vanderbilt.edu

Vaccination continues to be the single most important and successful public health intervention, due to its prevention of morbidity and mortality from prevalent infectious diseases. Severe immunologically mediated reactions are rare and less common with the vaccine than the true infection. However, these events can cause public fearfulness and loss of confidence in the safety of vaccination. In this paper, we perform a systematic literature search and narrative review of immune-mediated vaccine adverse events and their known and proposed mechanisms, and outline directions for future research. Improving our knowledge base of severe immunologically mediated vaccine reactions and their management drives better vaccine safety and efficacy outcomes.

KEYWORDS
adverse drug reactions, allergy, drug allergy, hypersensitivity, immunology, vaccines

- **"Helaas" meestal wordt er in de meeste gevallen geen verband aangetoond tussen ernstige neveneffecten en vaccinatie. "Conclusie: niet bewezen dus er is geen verband".**
- **Wetenschap dient te onderzoeken wat we (nog) niet weten.**

Vraag

- Graag had ik uw advies gevraagd voor een patiënt (°1999) van onze praktijk met ernstige psoriasis waarvoor de dermatoloog een **biological** zou willen opstarten.
- Vooraleer er gestart zou worden, zouden we zeker willen zijn dat de patiënt zijn vaccinaties in orde zijn. Covid, griep en pneumokokken zijn reeds in orde,
- maar we vragen ons af wat we best doen met de mazelen/bof/rubella en de hepatitis B. Een bloedname naar antistoffen toonde namelijk geen IgG antistoffen tegen mazelen, buf of rubella en een hepatitis B antistoffen titer voor hepatitis B < 10 (2). De patiënt is wel voor beide gevaccineerd. De vraag is nu of we deze patiënt moeten boosteren (elk 1 boostervaccin en controleren na 1 maand bijvoorbeeld?) of mogen we ervan uitgaan dat hij beschermd is?
- Heeft u ook advies over het gelekoortsvaccin: lijkt het u aangewezen dit ook in orde te laten maken voor start met de biological?

Vraag: bijlage vaccinatieschema

Omschrijving	Leeftijd in maanden					Leeftijd in jaren				
	2	3	4	12	15	6	9-10	12		14
Polio	07/99	o	05/00		o	o				
Difterie	07/99	08/99	o		05/00	o				o
Tetanus	07/99	08/99	o		05/00	o				o
Pertussis	07/99	08/99	o		05/00	o				o
Hib	07/99	o	10/99		05/00					
Hepatitis B	o	10/99	12/99		05/00					
Pneumokok	o		o	o						
Mazelen				07/00			03/11			
Bof				07/00			03/11			
Rubella				07/00			03/11			
MenC of MenACWY					o					
HPV								o	o	

Vaccin	Datum	Opm.
Tetravac - DTPa-IPV	06/06/06	Neen
Covid-19 - Moderna - Spikevax	10/07/21	Neen
Covid-19 - Moderna - Spikevax	16/08/21	Neen
Covid-19 - Moderna - Spikevax	23/12/21	Neen
Covid-19 - Pfizer/BioNTech - Comirnaty adapted1	27/09/22	Neen
Boostrix - dTpa	11/10/23	Neen
Covid-19 - Pfizer/BioNTech - Comirnaty 30mcg JN.1	07/10/24	Neen
Prevenar 13 - Pnc13	18/12/24	Neen

Vaccinatie voor start biological?

- HGR advies 9158 (IC-patiënten en vaccinatie - Hoge Gezondheidsraad)

5. LIST OF (POTENTIALLY) IMMUNOSUPPRESSIVE MEDICATIONS

In order to find the brand names of the various medications, see:
Gecommentarieerd Geneesmiddelen Repertorium *(Belgisch Centrum voor Farmacotherapeutische informatie; www.bcfi.be)*
Répertoire Commenté des Médicaments *(Centre Belge d'Information Pharmaco thérapeutique; www.cbip.be)*

The list of immunosuppressive medication is long. There is a continuous introduction of new monoclonal antibodies. The best moment for vaccination is **before** the start of immunosuppressive medication. At that moment, the function of the immune system is still intact and there will be an optimal response to vaccination. In addition, live-attenuated vaccines (Yellow Fever, Varicella-Zoster, Measles-Mumps-Rubella) are contra-indicated during immunosuppressive therapy. The interval after which a live-attenuated vaccine can safely be given after cessation of immunosuppressive therapy is dependent on pharmacokinetic and pharmacodynamics characteristics of the medication in question.

Vaccinatie bij start biological (levenslang?)

- Controle basisvaccinaties, als er geen ander document is:
  - → DTP en Hepatitis B OK
  - → Pneumokokken 1 dosis geconjugeerd 13 valent recent OK
  - → (toekomstige reis?)

  - → MBR seronegatief ondanks vaccinatie: één extra dosis, zonder titercontrole
  - → Hepatitis B seronegatief ondanks vaccinatie: één “diagnostische booster”, titercontrole één maand later

- Toekomstige reisplannen:
  - → Polio net 3 dosissen. Best één IPV toevoegen (op eigen kosten)
  - → Gele Koorts nuttig, te bespreken in reisklinkiek. Één dosis = levenslange bescherming