

Immunizations

Infants, Children, Adolescents, Adults

Neil S. Levy, DO, MBA, FACOP, FAAP, ABAM
UHC Community Plan Texas
STAR Kids Medical Director



1

Immunizations

Infants, Children, Adolescents, Adults



I have no actual or potential conflict of interest in relation to any product or service mentioned in this program or presentation.

© 2020 United HealthCare Services, Inc. All rights reserved.

2

Objectives



- Understand how immunizations work
- Have a general idea of what immunizations should be given
- Know where to easily find the specifics for each immunization
- Have a general knowledge of who needs immunizations
- Know where to easily find what immunizations are due over the life span
- Know where to find the catch up schedule for missed immunizations
- Understand “The Cocoon Strategy”
- Address concerns about vaccines
- Understand the National Childhood Vaccine Injury Compensation Program

© 2020 United HealthCare Services, Inc. All rights reserved.

3

The Very Short and Simple Immunology of Vaccines



- Humans have three types of immunity
 - Innate
 - Active
 - Passive

Welcome to KidsHealth!
Nemours is a nonprofit children's health system. Downloaded 5/18/20

© 2020 United HealthCare Services, Inc. All rights reserved.

4

The Very Short and Simple Immunology of Vaccines



- Innate
 - What you have at birth
 - Your genetics
 - Naturally occurring antibodies

Welcome to KidsHealth!
Nemours is a nonprofit children's health system. Downloaded 5/18/20

© 2020 United HealthCare Services, Inc. All rights reserved.

5

The Very Short and Simple Immunology of Vaccines



- Active (Adaptive)
 - Immunity from when you are exposed to diseases
 - When receive a vaccine
 - Antibodies are created by your body against a disease

Welcome to KidsHealth!
Nemours is a nonprofit children's health system. Downloaded 5/18/20

© 2020 United HealthCare Services, Inc. All rights reserved.

6

The Very Short and Simple Immunology of Vaccines



- Passive
 - Antibodies put in your body from another source
 - Examples:
 - Breastfeeding: Mother gives to Baby
 - An injection with antibodies from someone else who recovered from a disease

Welcome to KidsHealth!

Nemours is a nonprofit children's health system. Downloaded 5/18/20

© 2020 United HealthCare Services, Inc. All rights reserved.

7

The Very Short and Simple Immunology of Vaccines



Active Immunity

- LYMPHOCYTES are one type of white blood cell
 - There are two kinds of Lymphocytes
 - B Lymphocytes
 - T Lymphocytes

© 2020 United HealthCare Services, Inc. All rights reserved.

8

The Very Short and Simple Immunology of Vaccines



Active Immunity



- B lymphocytes
 - They are the body's military intelligence system
 - They find their targets – Antigens of invading organisms
 - They send specific antibodies to lock onto the disease antigen
 - They send a chemical message to T Lymphocytes to kill the bacteria or virus labelled with this antibody

© 2020 United HealthCare Services, Inc. All rights reserved.

9

The Very Short and Simple Immunology of Vaccines



Active Immunity


- T Lymphocytes
 - T cells are the soldiers
 - They get their orders from the B Lymphocyte
 - They destroy the invaders



© 2020 United HealthCare Services, Inc. All rights reserved.

10

The Very Short and Simple Immunology of Vaccines




Active Immunity

- Active Immunity from a vaccine
 - An antigen is a piece of an organism (an invading virus or bacteria)
 - The antigen will not cause illness
 - An immunization injection introduces an antigen into your body
 - The B Lymphocyte eats it and identifies it as an invader
 - The B Lymphocyte makes antibodies to the invader
As if it were the whole virus or bacteria
 - The B Lymphocyte has a very long memory
 - If you are exposed to the invaders, the B Lymphocyte makes antibodies and tells the T Lymphocytes to kill the invaders

© 2020 United HealthCare Services, Inc. All rights reserved.


11

The Very Short and Simple Immunology of Vaccines




Active Immunity

The antigen is a piece of an organism (an invading virus or bacteria)
The antigen will not cause illness - it is not the whole organism



virus



antigen

© 2020 United HealthCare Services, Inc. All rights reserved.

12

The Very Short and Simple Immunology of Vaccines

Active Immunity

An immunization injection introduces an antigen into your body



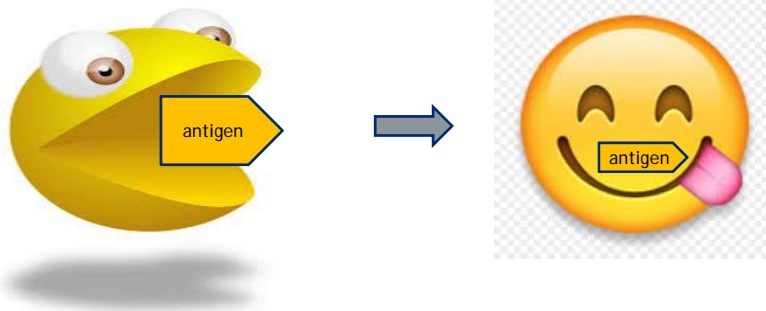
© 2020 United HealthCare Services, Inc. All rights reserved.

13

The Very Short and Simple Immunology of Vaccines

Active Immunity

The B Lymphocyte eats it and identifies it as an invader



© 2020 United HealthCare Services, Inc. All rights reserved.

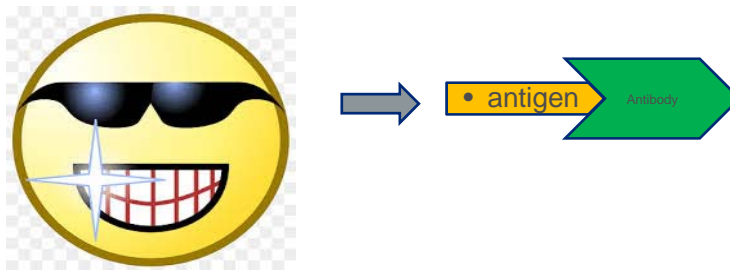
14

The Very Short and Simple Immunology of Vaccines



Active Immunity

The B Lymphocyte makes antibodies to the invader antigen



© 2020 United HealthCare Services, Inc. All rights reserved.

15

The Very Short and Simple Immunology of Vaccines



Active Immunity

The B Lymphocyte has a very long memory



© 2020 United HealthCare Services, Inc. All rights reserved.

16

The Very Short and Simple Immunology of Vaccines



Active Immunity

If you are exposed to the invaders, the B Lymphocyte makes antibodies



© 2020 United HealthCare Services, Inc. All rights reserved.

17

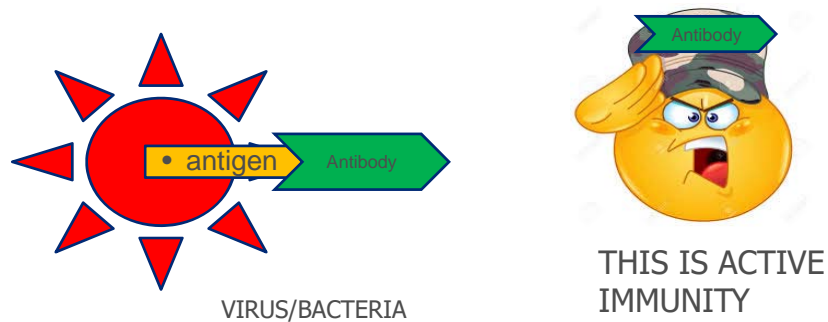
LNS1

The Very Short and Simple Immunology of Vaccines



Active Immunity

The B Lymphocyte tells the T Lymphocytes to kill the invaders



© 2020 United HealthCare Services, Inc. All rights reserved.

18

Slide 18

LNS1 Levy, Neil S, 5/27/2020

What Immunizations Should Be Given



- Immunization recommendations consider age
- Sometimes immunizations are not given on time
 - These are considered as missed
 - A catch up schedule is available
- Keeping the vaccines current is important to the health of our members

All of the information in the [What Immunizations Should Be Given](https://www.cdc.gov) section was downloaded from <https://www.cdc.gov>

© 2020 UnitedHealthCare Services, Inc. All rights reserved.

19

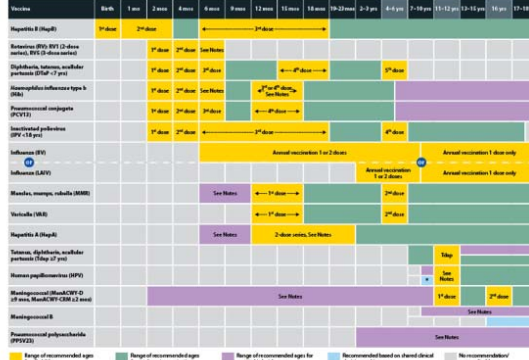
What Immunizations Should Be Given



Table 1 Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2020

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars.

To determine minimum intervals between doses, see the catch-up schedule (Table 2). School entry and adolescent vaccine age groups are shaded in gray.



© 2020 UnitedHealthCare Services, Inc. All rights reserved.

20

What Immunizations Should Be Given



- These tables are an example of what you will find at the Centers for Disease Control (CDC) Website using this link
<https://www.cdc.gov/vaccines/schedules/>
- You do not have to memorize this either
- You will receive a take away with all of the links I show in this presentation.
- These are your instant access sites for identifying what vaccines should have been received

© 2020 United HealthCare Services, Inc. All rights reserved.

23

What Immunizations Should Be Given



- You will not be asked to recite the following list on the post lecture survey.
- There are potentially 15 immunizations in the first 18 years of life

© 2020 United HealthCare Services, Inc. All rights reserved.

24

What Immunizations Should Be Given



- Hepatitis B (Hep B)
- Rotavirus
 - (RV) RV1 (2-dose series); RV5 (3-dose series)
- Diphtheria, tetanus, & acellular pertussis
 - (DTaP: <7 yrs)
- Haemophilus influenzae type b
 - (Hib)
- Pneumococcal conjugate
 - (PCV13)

© 2020 United HealthCare Services, Inc. All rights reserved.

25

What Immunizations Should Be Given



- Tetanus, diphtheria, & acellular pertussis
 - (Tdap: ≥ 7 yrs)
- Inactivated poliovirus
 - (IPV: <18 yrs)
- Influenza (IIV) or Influenza (LAIV)
- Measles, mumps, rubella
 - (MMR)
- Varicella
 - (VAR)
- Hepatitis A
 - Hep A

© 2020 United HealthCare Services, Inc. All rights reserved.

26

What Immunizations Should Be Given



- Human papillomavirus
 - (HPV)
- Meningococcal
 - (MenACWY-D: ≥ 9 mos; MenACWY-CRM: ≥ 2 mos)
- Meningococcal B
 - (MenB)
- Pneumococcal polysaccharide
 - (PPSV23)

© 2020 United HealthCare Services, Inc. All rights reserved.

27

What Immunizations Should Be Given



- First 6 months of life: 6 vaccines started
 - Hepatitis B, Rotavirus, DPT, Hemophilus group B, Pneumococcal, Inactivated Polio
 - Some require multiple doses
 - Beginning at 6 months: Influenza recommended annually

© 2020 United HealthCare Services, Inc. All rights reserved.

28

What Immunizations Should Be Given



- 12 to 23 months: 3 more started
 - MMR, Varicella, Hepatitis A
 - 2 doses of each
- 4 to 6 years
 - All booster doses should have been completed.

© 2020 United HealthCare Services, Inc. All rights reserved.

29

What Immunizations Should Be Given



The Cocoon Strategy

- The DPT does not give good immunity until after the 3rd dose at 6 months
- Young infants have the highest rate of pertussis
 - In 87-100% of all deaths caused by pertussis, the victim is an infant of less than 6 months of age
- The strategy is to protect infants from diseases by vaccinating those in close contact with them
 - Parents, siblings, grand-parents, others who assist in the infant's care

Healy, C. M.; Rench, M. A.; Baker, C. J. (2010). "Implementation of Cocooning against Pertussis in a High-Risk Population". *Clinical Infectious Diseases*. 52 (2): 157-162
 Downloaded from the Web 6/1/2020

© 2020 United HealthCare Services, Inc. All rights reserved.

30

What Immunizations Should Be Given



- POLL:
- Do you know if your immunizations are current?
 - Yes No I DON'T KNOW
- Are your children's or parents immunizations current?
 - Yes No I DON'T KNOW

© 2020 United HealthCare Services, Inc. All rights reserved.

31

What Immunizations Should Be Given



- Results
- It is important to keep a record of your immunizations
- It is important to be sure you are current.

© 2020 United HealthCare Services, Inc. All rights reserved.

32

What Immunizations Should Be Given

- 42% of young children are not up to date
- By 19-35 months, about 58% of children were up to date on vaccinations
- Vaccine schedule adherence patterns are strongly associated with up-to-date status
 - 63% followed the recommended schedule
 - 23% followed an alternate schedule
 - 15% had an unknown pattern
- The children of parents that followed the schedule were more likely to be up to date

- "Adherence to Timely Vaccinations in the United States"
Hargreaves AL, et al. Pediatrics. Feb. 21, 2020

© 2020 United HealthCare Services, Inc. All rights reserved.

33

What Immunizations Should Be Given

- When you go to the CDC Website, you will find several headers under Healthy Living; Vaccines and Immunizations is one
- In Vaccines and Immunizations there are links
- Each one is a link to an expanded section or table
 - For Health Care Providers
 - For Parents & Adults
 - Parent-Friendly Schedule for Infants and Children (birth-6 years)
 - Parent-Friendly Schedule for Preteens and Teens (7-18 years)

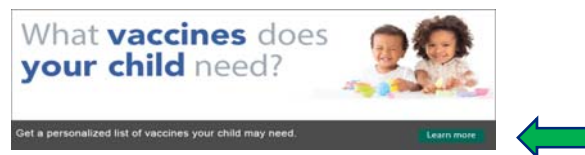
© 2020 United HealthCare Services, Inc. All rights reserved.

34

What Immunizations Should Be Given



- Under the link: For Parents & Adults
 - Resources for Parents
 - “What vaccines does your child need?”
 - Click on the GREEN “Learn more” tab



© 2020 United HealthCare Services, Inc. All rights reserved.

35

What Immunizations Should Be Given



- This will bring up the **Childhood Vaccine Assessment Tool**
 - There is also an adult tool in the Adult Section
- There are seven simple questions with check offs to click
- At the end, click RESULTS
- This will provide a printable list for the child being reviewed

© 2020 United HealthCare Services, Inc. All rights reserved.

36

Vaccine Information



- Adults have age appropriate vaccines
 - Some are modified because adult immune responses are different than children
- Adults over 50 or 55 years of age should have one additional vaccine
 - Zoster recombinant (RZV) (preferred)
OR
 - Zoster live (ZVL)

© 2020 United HealthCare Services, Inc. All rights reserved.

37

Vaccine Information



- Each of the recommended vaccines has a history of why it was developed and how the schedule was decided.
- On the CDC Website there is a link to the Advisory Committee on Immunization Practices (ACIP)
- The Advisory Committee
 - Develops the recommendations
 - Monitors problems
 - Makes recommendations

© 2020 United HealthCare Services, Inc. All rights reserved.

38

Concerns About Vaccines



- Babies are born with immune systems that can fight most germs
- There are some deadly diseases they can't handle.
- That's why they need vaccines to strengthen their immune system
- Infants, children, all of us are exposed to thousands of germs every day
- This happens through our food, our air we breathe, and things children and adults put in our mouths.

Downloaded from <https://www.cdc.gov/vaccines/parents/why-vaccinate/vaccine-decision.html> 5/29/20

© 2020 United HealthCare Services, Inc. All rights reserved.

39

Concerns About Vaccines



Vaccine ingredients

- **All ingredients of vaccines play necessary roles**
 - in making the vaccine,
 - triggering the body to develop immunity, or
 - in ensuring that the final product is safe and effective. Some of these include:
- **Adjuvants**
 - Augment the immune response of the body
- **Formaldehyde**
 - Prevent contamination by bacteria during the manufacturing process.
 - Also, found in environment, preservatives, and household products.

Downloaded from <https://www.cdc.gov/vaccines/parents/why-vaccinate/vaccine-decision.html> 5/29/20

© 2020 United HealthCare Services, Inc. All rights reserved.

40

Concerns About Vaccines



Vaccine ingredients

- **Thimerosal** (Contains Mercury)
 - Used during manufacturing
 - Is no longer an ingredient in any vaccine since 1999
 - Exception: multi-dose vials of the flu vaccine. Single dose vials of the flu vaccine are available with no thimerosal
 - No reputable scientific studies have found an association between thimerosal in vaccines and autism.

Downloaded from <https://www.cdc.gov/vaccines/parents/why-vaccinate/vaccine-decision.html>
5/29/20

© 2020 United HealthCare Services, Inc. All rights reserved.

41

Concerns About Vaccines



- Mild side effects are expected
- Vaccines can cause side effects
 - Low-grade fever
 - Pain and redness at injection site
 - Mild reactions go away within a few days on their own.
- Severe, long lasting side effects are extremely rare.

Downloaded from <https://www.cdc.gov/vaccines/parents/why-vaccinate/vaccine-decision.html> 5/29/20

© 2020 United HealthCare Services, Inc. All rights reserved.

42

National Vaccine Injury Compensation Program (VICP)



- In very rare cases, a vaccine can cause a serious problem, such as a severe allergic reaction.
- The VICP is a no-fault alternative to the traditional legal system for resolving vaccine injuries.
- The VICP may provide financial compensation to individuals
 - If a petition is filed and the patient is found to have been injured by a VICP-covered vaccine, or
 - Even in cases in which such a finding is not made,
- Petitioners may receive compensation through a settlement.

Downloaded from <https://www.hrsa.gov/vaccine-compensation/index.html> 5/29/20

© 2020 United HealthCare Services, Inc. All rights reserved.

43

IMMUNIZATIONS Summary



- Immunizations create active immunity
- 6 immunizations are given in the 1st 6 months of life
- 3 more are given by 23 months of age
- All childhood immunizations should be completed by 6 years of age
- Go to the CDC Website for the specific time tables for vaccines
- Use the Childhood Vaccine Assessment Tool to find what a specific child needs at any age
- Encourage the The Cocoon Strategy
- Vaccines have some side effects
- National Childhood Vaccine Injury Compensation Program helps those who are hurt by a vaccine

© 2020 United HealthCare Services, Inc. All rights reserved.

44

Immunizations
Infants, Children, Adolescents, Adults



• QUESTIONS?



© 2020 United HealthCare Services, Inc. All rights reserved.

45



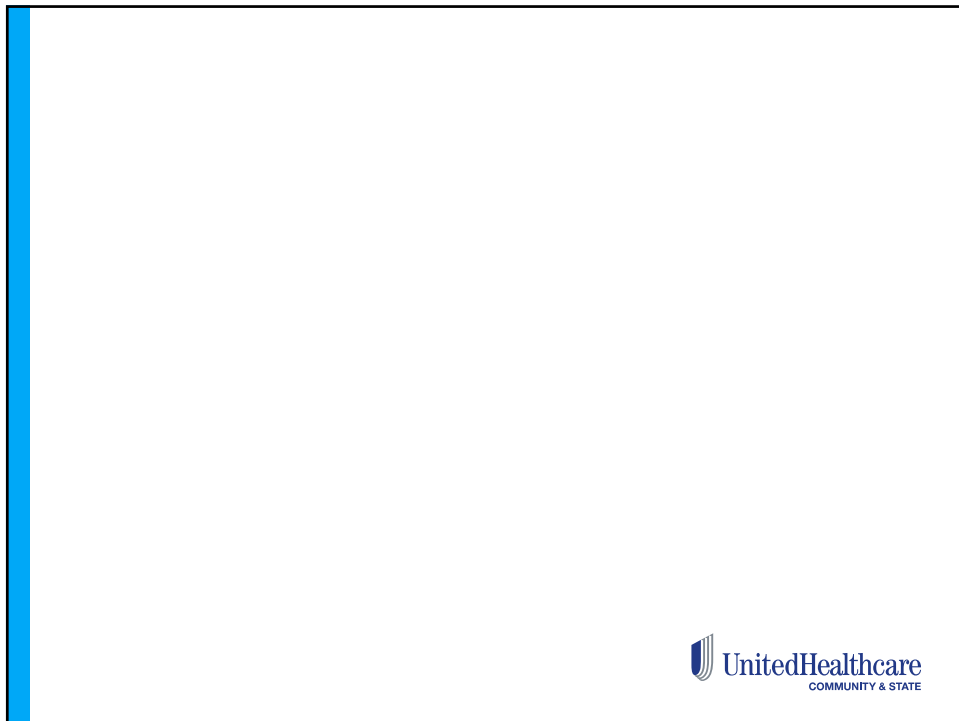
© 2020 United HealthCare Services, Inc. All rights reserved.

46


46



47




48



Click to add title/text
Click to add title/text

49

49



- 1** **Click to add title/text**
Click to add title/text


- 2** **Click to add title/text**
Click to add title/text

- 3** **Click to add title/text**
Click to add title/text

- 4** **Click to add title/text**
Click to add title/text

50

50



Click to add title/text
Click to add title/text

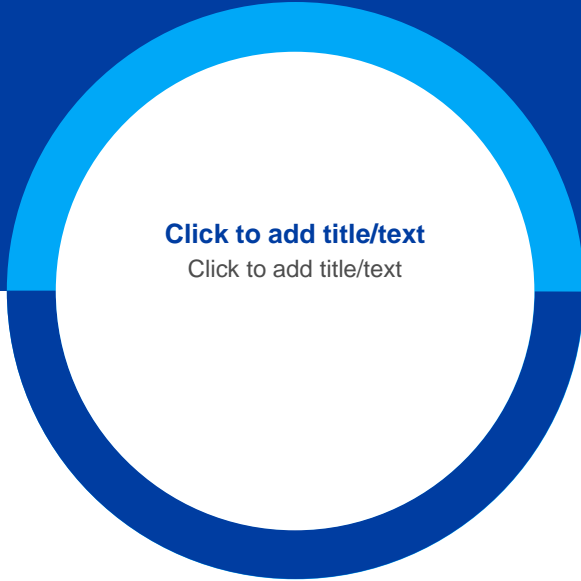
Click to add title/text
Click to add title/text

Click to add title/text
Click to add title/text

Click to add title/text
Click to add title/text

51

51




Click to add title/text
Click to add title/text

52

52

Weekly Status Report Sample Slide



Overall Status				Key Accomplishments and Statuses			
<ul style="list-style-type: none"> • Lorem ipsum dolor sit amet, consectetur adipiscing elit. • Maecenas porttitor congue massa. • Fusce posuere, magna sed pulvinar ultricies purus lectus. • Malesuada libero, sit amet commodo magna eros quis urna. 				<ul style="list-style-type: none"> • Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus. • Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci. • Lorem ipsum dolor sit amet, consectetur adipiscing elit. • Maecenas porttitor congue massa. • Fusce posuere, magna sed pulvinar ultricies purus lectus. • Malesuada libero, sit amet commodo magna eros quis urna. 			
Current Project Statuses and Phases				Next Steps			
Project	Phase	End Date	Status		Comments		
			P	C			
• Lorem ipsum dolor sit amet, consectetur			●	●		<ul style="list-style-type: none"> • Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus. • Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci. • Lorem ipsum dolor sit amet, consectetur adipiscing elit. • Maecenas porttitor congue massa. • Fusce posuere, magna sed pulvinar ultricies purus lectus. • Malesuada libero, sit amet commodo magna eros quis urna. 	
			●	●			
			●	●			
Issues and Risks							
#	Project	Due Date	Issue or Risk	Impact	Owner	Response	
1	• Lorem ipsum dolor sit amet, consectetur						
2							
3							
4							

© 2020 United HealthCare Services, Inc. All rights reserved.

53

54

Appendix

55



56



57



58



59



60



61



62



63



64



65



66



67



68

