# Vaccines

This learning journey is designed to introduce vaccines, their history, importance, and how they work. Discovery strategies, development guidelines, delivery platforms and adjuvants are also discussed in this journey.



#### Vaccines: History

Extract from: **'Vaccination'** Dr. Anita Milicic – University of Oxford, UK <sub>4 mins</sub>

#### Approaches to Nonclinical Vaccine Development



Dr. Lisa Plitnick, PhD. Therapeutic Area Lead for Vaccines Merck & Co., Inc. USA

#### Importance of Vaccination

Extract from: **'Approaches to nonclinical vaccine development'** Dr. Lisa Plitnick – Merck & Co., Inc., USA <sub>3 mins</sub>

A Brief History of Vaccines and Anti-Vax Responses

#### Importance of Vaccine Mandate

Extract from:



and Molecular Biophysics Washington University in St. Louis, USA **'A brief history of vaccines and anti-vax responses: the anti-vax movement part 2'** Prof. Michael Kinch – Washington University in St. Louis, USA 4 mins

## Vaccination



## Vaccines: How Do They Work?

Extract from: **'Vaccination'** Dr. Anita Milicic – University of Oxford, UK <sub>3 mins</sub>

#### Successes and Failures with Vaccines

U P

University of Pennsylvania Philadelphia, PA, USA

#### Strategies for Vaccine Discovery

Extract from: **'Successes and failures with vaccines'** Prof. Stanley Plotkin – University of Pennsylvania, USA <sub>5 mins</sub>

#### Approaches to Nonclinical Vaccine Development



Dr. Lisa Plitnick, PhD. Therapeutic Area Lead for Vaccines Merck & Co., Inc. USA

#### Guidelines for Vaccine Development

Extract from: **'Approaches to nonclinical vaccine development'** Dr. Lisa Plitnick – Merck & Co., Inc., USA 4 mins

### Vaccine Delivery

#### Vaccine Formula

Extract from: **'Vaccine Delivery'** Prof. Sevda Şenel – Hacettepe University, Turkey <sub>3 mins</sub>





#### Vaccine Platforms Including Subunit Vaccines

Extract from: **'Vaccination'** Dr. Anita Milicic – University of Oxford, UK 7 mins

#### RNA Therapeutics: Clinical Applications and Methods of Delivery



Prof. John P. Cooke MD PhD Founding Director, Center for RNA Therapeutics Chief Translational Science Officer, Houston Methodist Research Institute Houston, Texas, USA

## mRNA Vaccine *vs.* Viral Vector Vaccine

#### Extract from: 'RNA therapeutics: clinical applications and methods of delivery'

Prof. John P. Cooke – Houston Methodist Research Institute, USA <sup>2</sup> mins

Usage of Vaccines and Therapeutics in Public Health Emergencies Part 1 of 2



**Professor Gary Kobinger** Director, Infectious Disease Centre Laval University, Québec, Canada Vaccine Development: Duration, Process and during emergency

#### Extract from:

**'Usage of vaccines and therapeutics in public health emergencies part 1'** Prof. Gary Kobinger – Laval University, Canada 5 mins

### Vaccine Delivery



Sevda Şenel Professor of Pharmaceutical Technology Hacettepe University, Faculty of Pharmacy Ankara, Turkey Vaccine Delivery: Routes and Systems

Extract from: **'Vaccine Delivery'** Prof. Sevda Şenel – Hacettepe University, Turkey <sup>6</sup> mins

## Vaccination

Dr. Anita Milicic Lead of Vaccine Formulation Group The Jenner Institute University of Oxford, UK

#### Vaccine Adjuvants: Types and Properties

Extract from: **'Vaccination'** Dr. Anita Milicic – University of Oxford, UK <sub>4 mins</sub>

#### **RNA Therapeutics:** Clinical Applications and Methods of Delivery



Prof. John P. Cooke MD PhD Founding Director, Center for RNA Therapeutics Chief Translational Science Officer, Houston Methodist Research Institute Houston, Texas, USA

#### Examples of mRNA Vaccines

Extract from: **'RNA therapeutics: clinical applications and methods of delivery'** Prof. John P. Cooke – Houston Methodist Research Institute, USA <sup>2</sup> mins

#### Vaccines and the Fight against Antimicrobial Resistance



**Dr. Annaliesa S. Anderson, PhD** VP & CSO Bacterial Vaccines Pfizer Vaccine Research and Development USA

#### How Vaccines Fight against Antimicrobial Resistance?

Extract from: **'Vaccines and the fight against antimicrobial resistance part 1'** Dr. Annaliesa S. Anderson – Pfizer Vaccine Research and Development, USA 3 mins

#### Vaccines and the Fight against Antimicrobial Resistance



**Dr. Annaliesa S. Anderson, PhD** VP & CSO Bacterial Vaccines Pfizer Vaccine Research and Development USA

Part 2

#### Barriers to Maximizing Vaccine Use and the Davos Declaration

Extract from:

**'Vaccines and the fight against antimicrobial resistance part 2'** Dr. Annaliesa S. Anderson – Pfizer Vaccine Research and Development, USA

3 mins