

VIRAL DISEASES OF THE RESPIRATORY TRACT (As per Rajasthan Pharmacist syllabus)

- ☞ **Viral Infections of the Respiratory Tract:** Common cold, Influenza, Viral Pneumonia, MERS, SARS & Corona
- ☞ **Viral Respiratory Diseases Causing Skin Rashes:** Measles, rubella (German measles), and chickenpox are viral diseases associated with skin rashes

Disease	Pathogen	Signs and Symptoms	Transmission	Vaccine
Chickenpox (varicella)	<i>Varicella-zoster virus</i>	In children, fever, chills, pustular rash of lesions that burst and form crusty scabs	Highly contagious via contact with aerosols, particles, or droplets from infected individual's blisters or respiratory secretions	Chickenpox vaccine Note: Once infected with varicella zoster, person acquire life time immunity to chicken pox
Shingles (Varicella zoster virus can dormant in nerve cell for decades & on reactivation result into production of the painful lesions known as Shingles)	<i>Varicella-zoster virus</i>	Painful lesions on face or trunk lasting several weeks; may cause postherpetic neuralgia (chronic pain) or spread to organs in severe cases	Nontransmissible; occurs when dormant virus is reactivated, generally many years after initial chickenpox infection	Shingles vaccine
Common cold (mild infection of nasal cavity by virus)	<i>Rhinoviruses, adenoviruses, coronaviruses, others</i>	Runny nose, congestion, sore throat, sneezing, headaches and muscle aches; may lead to otitis media, pharyngitis, laryngitis	Highly contagious via contact with respiratory secretions or inhalation of droplets or aerosols	None
Influenza/flu	<i>Influenza viruses</i> three types A, B, C	Fever, chills, headaches, body aches, fatigue; may lead to pneumonia or complications such as Reye syndrome	Highly contagious between humans via contact with respiratory secretions or inhalation of droplets or aerosols. Influenza A virus can be transmitted from animal reservoirs.	Vaccines developed yearly against most prevalent strains
Measles	Measles virus (MeV)	High fever, conjunctivitis, sore throat, macular rash becoming confluent, Characteristic	Highly contagious via contact with respiratory secretions, skin rash, or eye secretions of infected individual	MMR

		Koplik's spots on oral mucosa		
MERS Zoonotic: Camel Origin Saudi Arabia in 2013	Middle East respiratory syndrome coronavirus (MERS-CoV)	Fever, cough, shortness of breath; in some cases, complications such as pneumonia and kidney failure; can be fatal	Contact with respiratory secretions or inhalation of droplets or aerosols	None
Rubella (German measles)	Rubella virus	Facial rash spreading to extremities, followed by low-grade fever, headache, conjunctivitis, cough, runny nose, swollen lymph nodes; congenital rubella may cause birth defects (teratogenic virus)	Contagious via inhalation of droplets or aerosols from infected person or asymptomatic carrier; transplacental infection from mother to fetus	MMR
SARS Zoonotic: Bat & civet Origin in China in 2002	SARS-associated coronavirus (SARS-CoV)	High fever, headache, body aches, dry cough, pneumonia; can be fatal	Contact with respiratory secretions or inhalation of droplets or aerosols	None
Coronavirus disease (COVID-19)	newly discovered coronavirus	Fever, tiredness & dry cough.	spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes	no specific vaccines or treatments
Viral pneumonia	Adenoviruses, influenza viruses, parainfluenza viruses, respiratory syncytial viruses, others	From mild cold-like symptoms to severe pneumonia; in infants, RSV infections may be life-threatening	Highly contagious via contact with respiratory secretions or inhalation of droplets or aerosols	None

Note

- ✓ Antigenic properties of virus (H & N spike protein antigen present on a lipid envelop of influenza virus) Change rapidly by two mechanism: **antigenic drift and antigenic shift**,
- ✓ SARS, MERS & Covid-19 are acute respiratory infections caused by coronaviruses, and appear to originate in animals.
- ✓ Measles, rubella, and chickenpox are highly contagious, systemic infections that gain entry through the respiratory system and cause skin rashes and fevers.
- ✓ **H (Hemagglutinin)**:- bind to host cell & facilitated endocytosis of virus into host cell
- ✓ **N (Neuraminidase)**:- facilitated the release of mature virions from host cell