



Monsoon Diseases

Basic Introduction with causes- symptoms and treatment (Prevention) and responsibilities

A short descriptive Power Point Notes by- Solution- Pharmacy

Declaration- Solution has collected data from various online and offline sources.

References are cited at each section. Although solution tried to rectify the errors, but few may still be possible.

References-

<https://www.lalpathlabs.com/blog/5-most-common-monsoon-diseases/>

<https://www.ockhardthospitals.com/most-common-monsoon-diseases-and-how-to-prevent-them>

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Monsoon Born Disease – Basic Introduction

Monsoon comes with lots of happiness in the face of farmer and it spread new life in jungle, even we all love and enjoy the season of monsoon. But it is a fact that monsoon doesn't come alone, it comes with several disease or disease causing microorganism, so it become more crucial to make a balance between enjoyment and precautions. Monsoon usually allow many contagious disease to grow and to communicate between person to person via many vector or carrier. If we don't pay attention towards the cause, their vector, and their symptoms then it may definitely make us ill. Monsoon born disease may or may not be life threatening but any kind of negligence may led to death. To make you better understand the cause, type, vector, symptoms and treatment we have separated each disease as a main page and tried to provide their important details in short so that you may update yourself and prevent their further transmission.

Monsoon invite many microorganism to grow because of several reason like- Absence of sunlight which usually prevent growth of many microorganism, water accumulation in object which gives a suitable environment for multiplication of microorganism. There is another main cause and that is accumulation of water in a specific site which may facilitate birth of larva and other disease causing agents.

Monsoon Born Disease – Cause and communication

Although the points listed below are not exactly the causes for monsoon born disease but these are the stimulant and provide suitable or favorable condition for optimum growth of microorganism. 'Solution-Pharmacy' tried to summarize all these possible cause (Factors) these includes-

- 1. Water Accumulation-** Water accumulation is first and main cause for most of the disease because it give suitable place for vectors to give birth and increase their population. Example include- [Malaria](#), [Dengue](#).
- 2. Lack of sun light-** As we know that sun is a source of natural heat and its heat kill the microorganism (Not all) it also control the moisture in any object, in monsoon there is lack of sun light so many microorganism may grow easily.
- 3. Pollution in Water source-** When monsoon comes it brings all west materials and dump into a pond or river and people who consume this water may get affected.
- 4. Food contamination-** Many food may get contaminated in the monsoon season specially all leafy vegetable, because the eggs and microorganism may stick to the vegetable and may transmit to the person who consume it.
- 5. Defecation in open place-** Major problem of water born or monsoon born diseases is defecation in open place either by human of animal, these contaminated defecation flows with the water and mixed with the pond or river, well, hand pump or any other water sources, thus they contaminate water source.

Monsoon Born Disease – Examples with their respective symptoms

Dengue fever is a viral disease which is basically transmitted by mosquitoes known as the **tiger mosquito** (*Aedes Aegypti*), this mosquito has a special identical feature which makes them different from normal ones. **These features include black and white stripes** and they have another character that **they typically bite early in the morning or at day time**. Dengue fever is also called "**break bone fever**" because its pain is severe. When an infected mosquito bites a human, it injects viruses of Dengue into the bloodstream. This continues till the cycle is completed. In this cycle furthermore, the mosquito either picks this virus from an already infected person, or from surrounding environs. The single bite of a Dengue mosquito is sufficient to cause the infection. In some cases, the symptoms get worsened and can become life-threatening as well. Blood vessels often become damaged and leaky, resulting in the drop of the number of clot-forming cells (platelets) in the bloodstream.

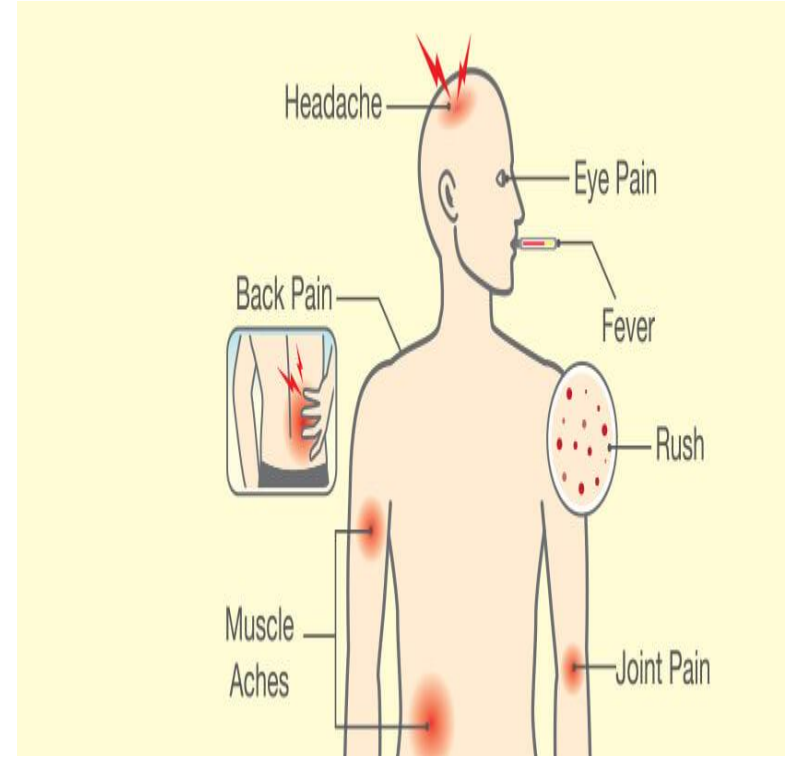


Image Credit- <http://www.godrejhit.com/hit-blogs/dengue/cause-and-symptoms-of-dengue>

Monsoon Born Disease –Symptoms of Dengue Fever

1. Pain with itching
2. Sudden high fever
3. Severe headache
4. Swollen lymph glands
5. Severe joints and muscle pain
6. Skin rash due to uncontrolled itching
7. Mild to severe nausea
8. Mild to severe vomiting
9. Mild bleeding from nose and gums.
10. Bruising on skin
11. Febrile convulsions
12. Pain behind the eyes
13. Drowsiness or irritability
14. Pale, cold and clammy skin
15. Difficulty in breathing
16. Diarrhorea or stomach cramp



Monsoon Born Disease – Examples with their respective symptoms

Malaria- Everyone knows about the malaria, Monsoon plays a important role in generation of condition which is favorable for the optimum growth of larva. In rainy season, there is water logging which may be a congenial habitat for breeding of mosquito which transmits malaria. **Unlike the Dengue the Mosquito of Malaria bite only at night-time biting female Anopheles mosquito can transmit malaria.** Most deaths are caused by *P. falciparum* and is the most dangerous type of malaria also known as Cerebral malaria. Other forms of malaria are *P. vivax*, *P. ovale*, and *P. malariae*.

Malaria diagnosis is very simple now a days, it is identified by microscopic examination of blood using antigen-based rapid diagnostic tests, earlier simple glass slide method were used. **The common symptoms of Malaria disease includes-** body ache, chills, and sweating, headache, vomiting or nausea, loss of appetite, irritation, stomach cramp etc. **If untreated, it can lead to complications like jaundice, severe anaemia or even liver and kidney failure.** Malaria is treated with antimalarial medications successfully.

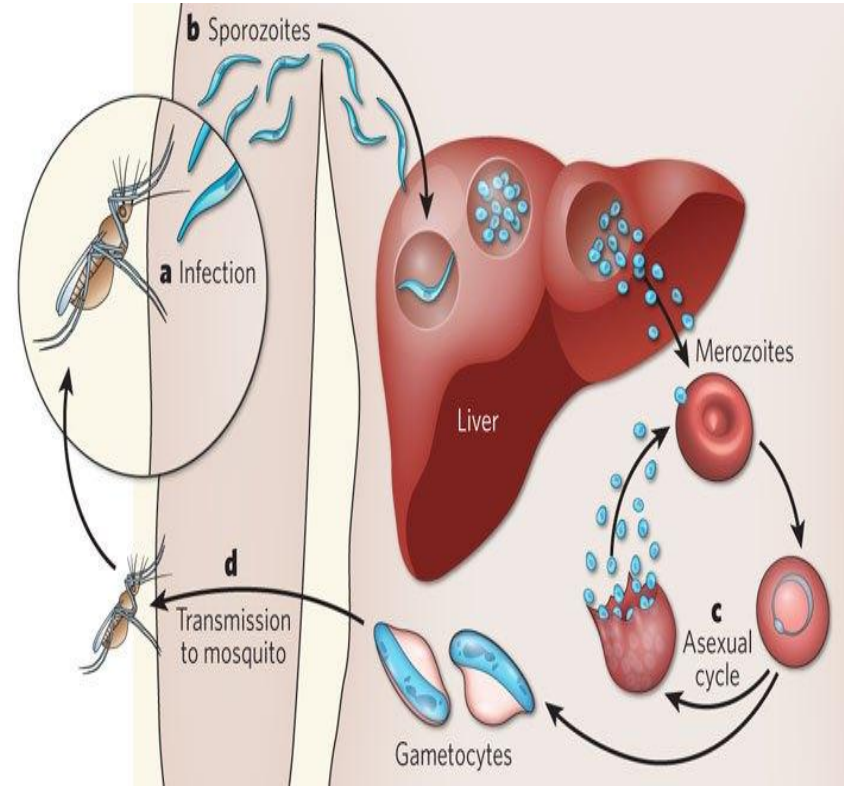


Image Credit- <http://sitn.hms.harvard.edu/flash/2013/1001-bites-the-road-to-a-successful-malaria-vaccine/>

Monsoon Born Disease – Examples with their respective symptoms

Influenza (Cold and Flu):- In early monsoon we all get infected with common cold problem. It is highly contagious disease due to the spread of virus in the air from infected person to healthy persons via air, droplet, sneezing and coughing or by using same cloths or towels. This cold and flue infects the upper respiratory tract and thus affects the nose and the throat. Because of the irritation caused inside throat there is itching and pain sensation. Apart from this common symptoms there are many more like- runny or stuffy nose, body ache, throat irritation and soreness and fever, headache, uneasiness, chocking of nose. Many people avoids these symptoms as they take it casual, but many of these symptoms leads towards a complication, so it is always advisable to consult a physician and get the required medicines prescribed for getting cured from the infection.

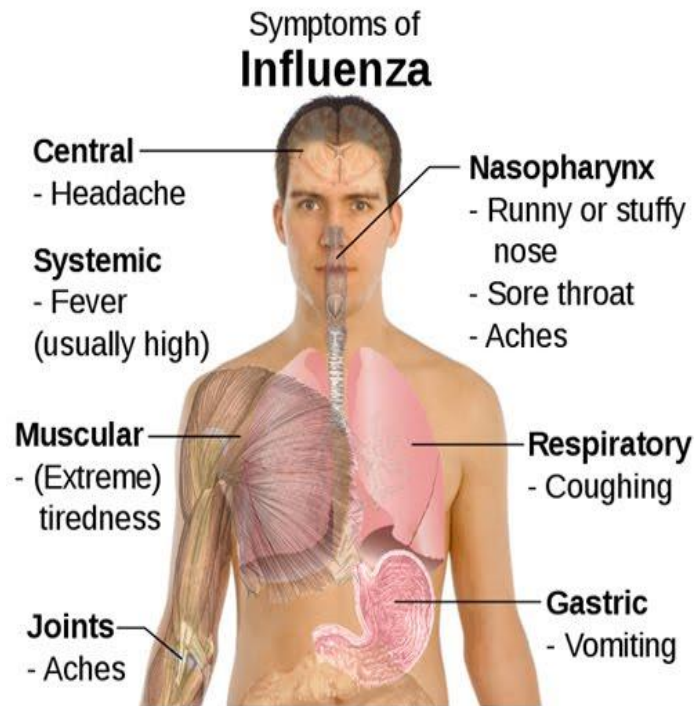


Image Credit- <http://www.betterfamilyhealth.org/influenza.html>

Monsoon Born Disease – Examples with their respective symptoms

Cholera:- Although there are many disease which get spread during monsoon, but most common and deadly bacterial disease that spreads during monsoon is “cholera” This disease is caused by contaminated food and water and also due to poor hygienic conditions. This disease mostly affect the intestine and cause diarrhea, which ultimately make the patient very weak. Cholera is basically water born disease and mostly affect the unhygienic people. Common symptoms of cholera which can be easily identified are severe diarrhea with watery stool and vomiting, due to these 02 symptoms water loss from body increase and person become dehydrated and simultaneously stomach muscle cramp starts. Diarrhoea can be so severe if electrolyte will not be balanced by giving electrolyte solution along with nutritional water. A rapid dipstick test is available to determine the presence of *V. cholera* bacteria from stool sample. Cholera requires immediate treatment because the disease can cause death within hours. . E Mail- solutionpharmacy@gmail.com & Reach solution at- www.facebook.com/pharmavideo/

How cholera affects the body

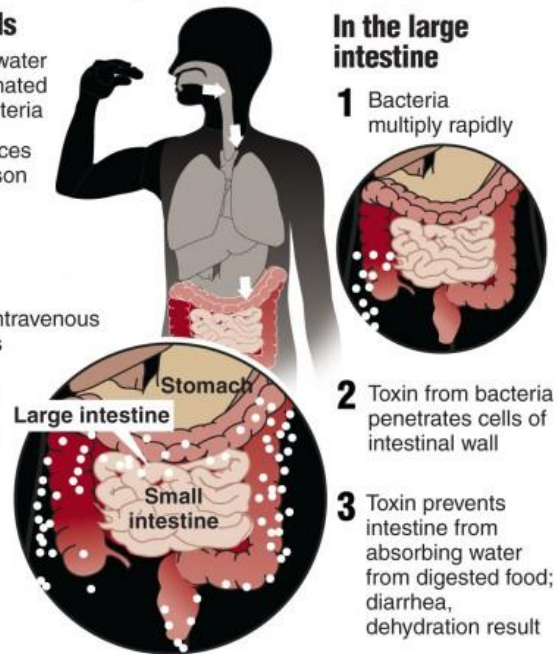
Cholera is an acute intestinal infection that causes severe diarrhea, dehydration and, if not treated promptly, death.

How it spreads

- People ingest water or food contaminated with cholera bacteria
- In epidemic, feces of diseased person is source of contamination

Treatment

- Salt solution, intravenous fluids, antibiotics
- In unprepared communities, death rates can be as high as 50 percent



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Source: World Health Organization

Image Credit- <http://www.rayur.com/wp-content/uploads/2012/06/cholera-poster.jpg>

Monsoon Born Disease – Examples with their respective symptoms

“Typhoid” is another waterborne bacterial infection caused by bacteria called Salmonella. The main sources and reason behind typhoid fever is **contaminated food or drinking water**. This disease is also called as fecal-oral route disease as this is due to **consumption of contaminated water with feces**. Diagnosis is possible by examining the blood, bone marrow or stool cultures and the test is called as Widal test. Symptoms of the diseases are common as any people may identified such as- **prolonged high fever, severe abdomen pain, headache; vomits or nausea**. But there is another dark side of the disease that it may remain in the gall bladder of the patient even after the treatment . Prevention of this disease is the best way for its treatment, we can prevent the typhoid by providing clean drinking water, better sanitation, and better hand washing. Treatments of typhoid include antibiotics such as azithromycin, Fluoroquinolones or third generation cephalosporin. **There is basic mechanism of action and classification of antibiotic which is made by solution-pharmacy.**

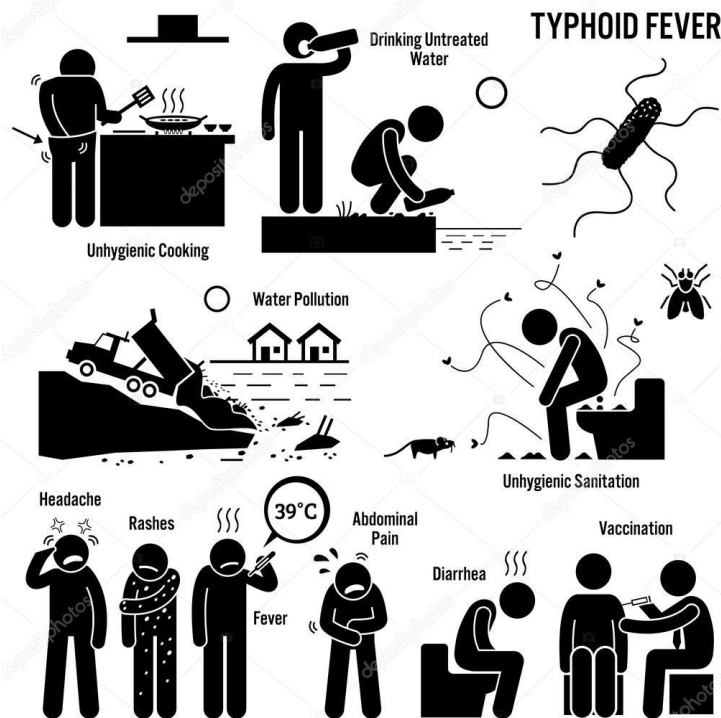
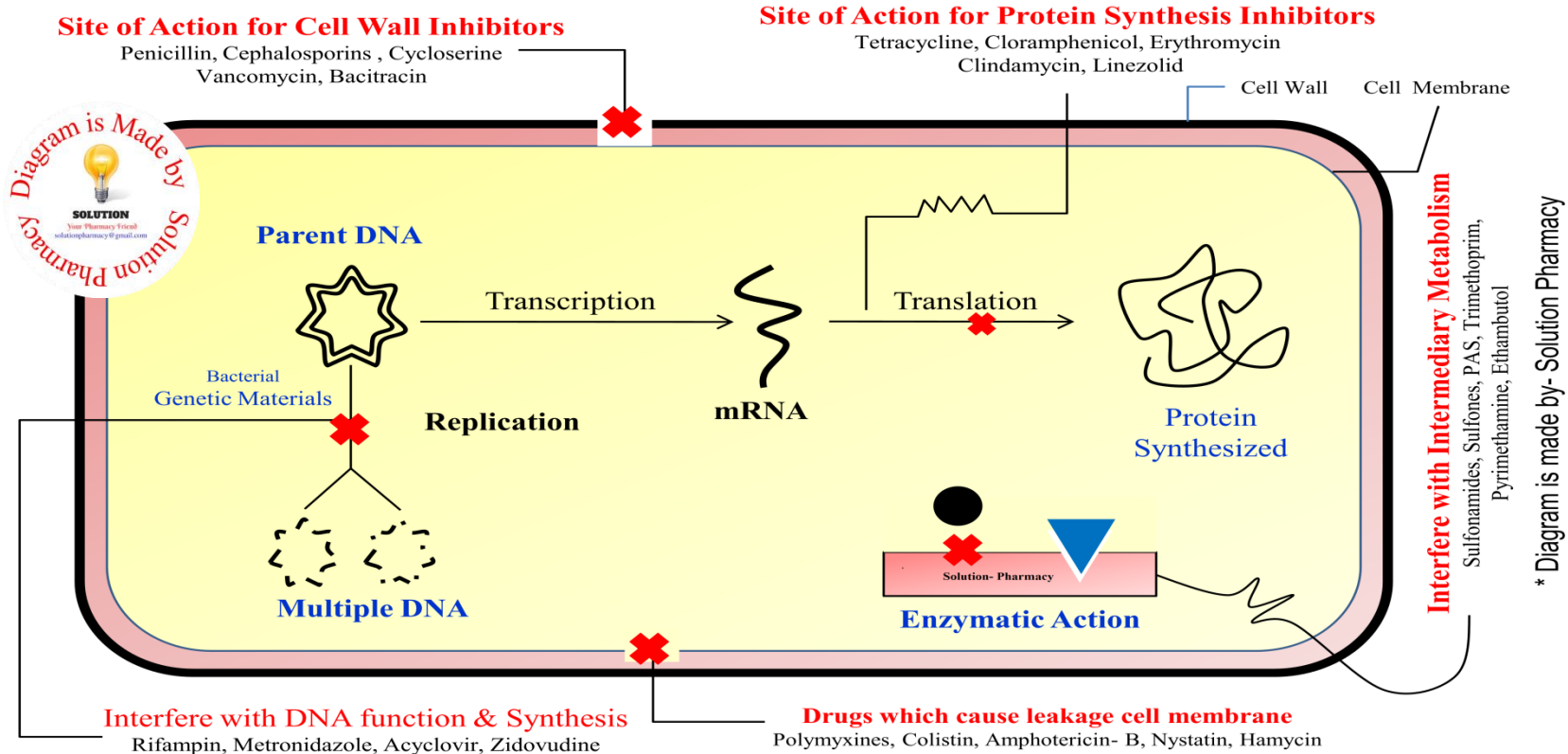


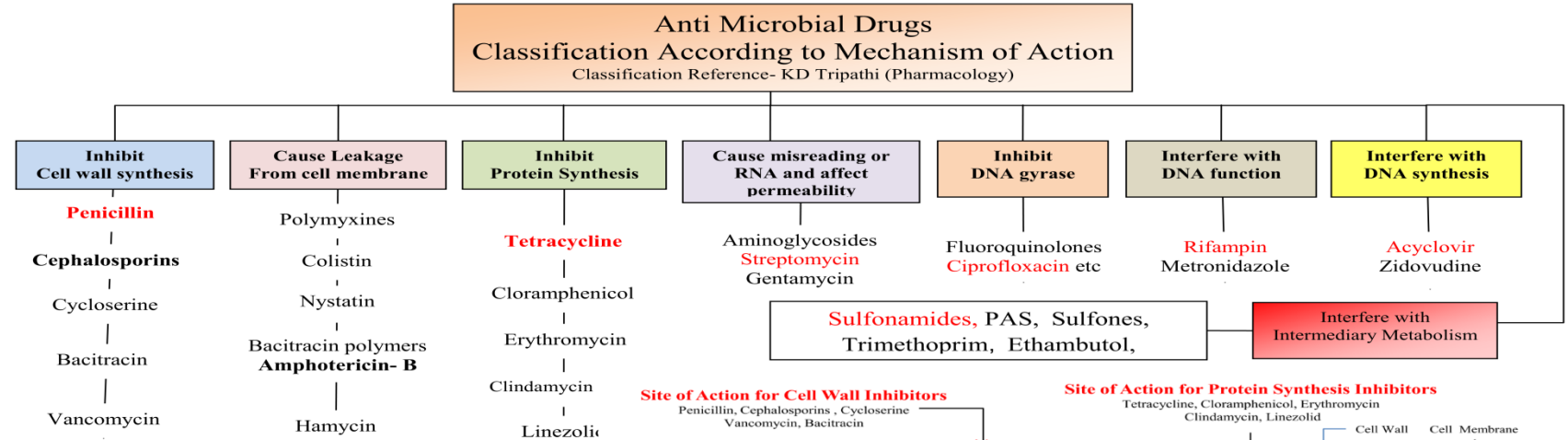
Image Credit- <https://depositphotos.com/96898288/stock-illustration-typhoid-fever-unhygienic-lifestyle-poor.html>

Monsoon Born Disease – Mechanism of Action of Antibiotics



The diagram is made by “Solution-Pharmacy

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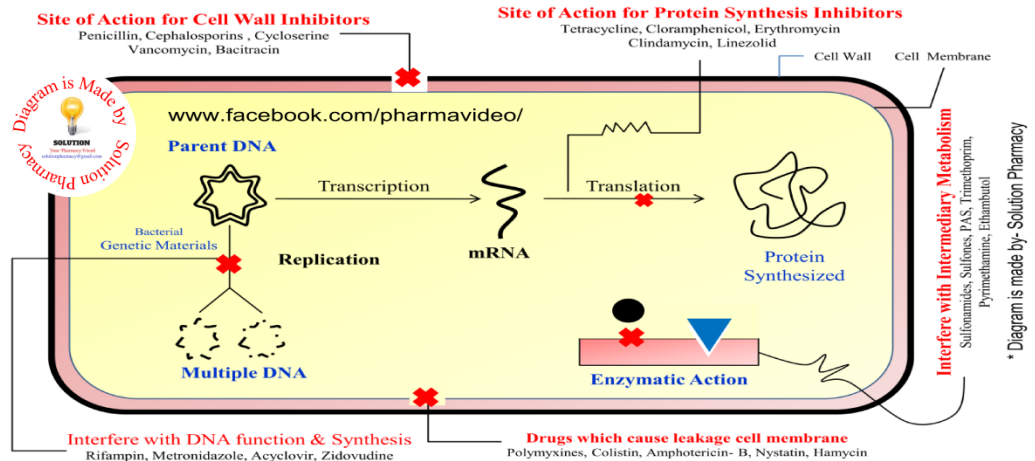


Inhibit Cell wall synthesis	PCCBV- पेन से साइकिल बना बन को चला
Cause Leakage From cell membrane	PCNAH- पोलीमीन को न हटाओ नहीं तो लीकेज करेगा सेल
Inhibit Protein Synthesis	TCECL- तेरा साइकिल एडीडे मिलेंडर लेने जाना है
Cause misreading or RNA and affect permeability	SG- स्पेलिंग और ग्रामर की वजह से मैंने मिस रीडिंग कर ली
Inhibit DNA gyrase	C- कैराज में सिप्रो का बल्ल लगाओ
Interfere with DNA function	RM- रेलवे मिनिस्टर ने रेलवे बुकिंग का फंक्शन बदल दिया
Interfere with DNA synthesis	A to Z सिरेमिस रोचना है
Interfere with Intermediary Metabolism	SPSTE- सुल्फोनामाइड पास से तोड़ देगा इनको

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Note- Mnemonics are based on my thoughts; it may or may not be useful to you. It's always better to create your own so you may memorize it.

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Monsoon Born Disease – Examples with their respective symptoms

Hepatitis A is not restricted to monsoon disease as it may communicate throughout the year, but maximum possibility is at the time of monsoon. **Hepatitis A is a highly contagious liver infection caused by the hepatitis A virus.** It is a waterborne viral infection and it is caused or infected by contaminated drinking water or food which is already contaminated with the stool of infected patient. **It can spread through flies. Eating fruits, vegetables, or other foods that were contaminated during handling can cause spread of infection.**

The symptom of this disease is directly related to the inflammation of the liver that's caused by a virus. Symptoms include, **Jaundice, because it affect the liver function, stomach pain due to loss of water and infection, Loss of appetite due to loss of metabolic activity, Nausea, Fever, Diarrhoea and Fatigue.** Blood tests are used to detect the presence of hepatitis A in patients.

Symptoms can include:



**Yellowing skin
and eyes**



Dark urine



**Light-colored
stools**



**Nausea and
vomiting**



**Loss of
appetite**



**Extreme
fatigue**

Monsoon Born Disease – Examples with their respective symptoms

Viral Fever:- This is the commonest form of water or monsoon born disease. Sudden weather change like rain then sun light often causes viral fever. **This is characterized by fatigue, chills, body aches and fever.** These symptoms are very much similar with other water born disease so proper identification test are essentials. The illness is contagious and spreads through infection droplets in the air or by coming into physical contact with infected secretions. **General duration of a viral fever lasts from 3 to 7 days, with the severity of the fever being the highest in the first three days.** The general treatment include the use of antihistamines, decongestants and antipyretic drugs with proper supervision of physician. Viral disease are generally self-limiting and generally do not need antibiotic unless there is a secondary infection. But in case the problem does not disappear doctor may prescribe antiviral drugs. **(Case dependent)** Preventing yourself from rain or contaminated food may prevent this viral fever.

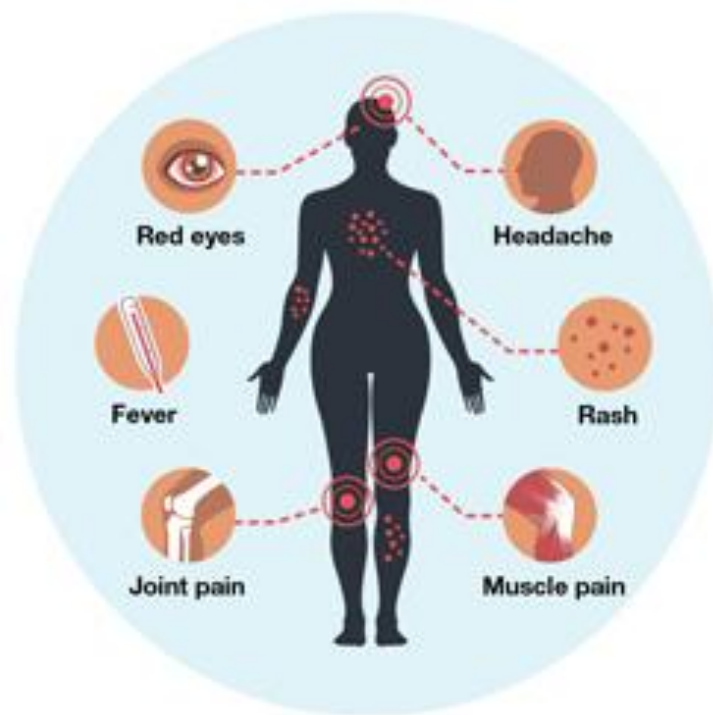
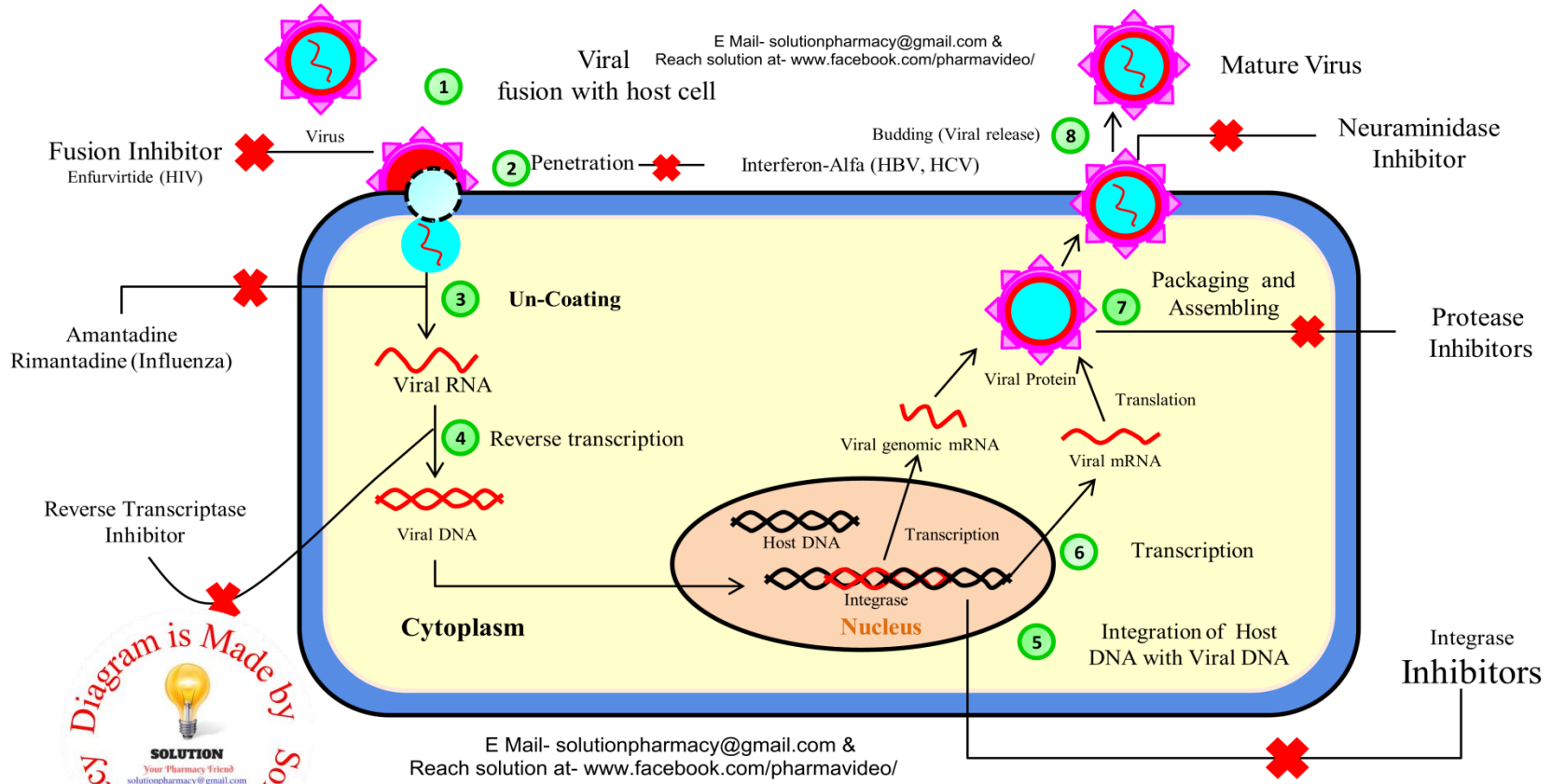


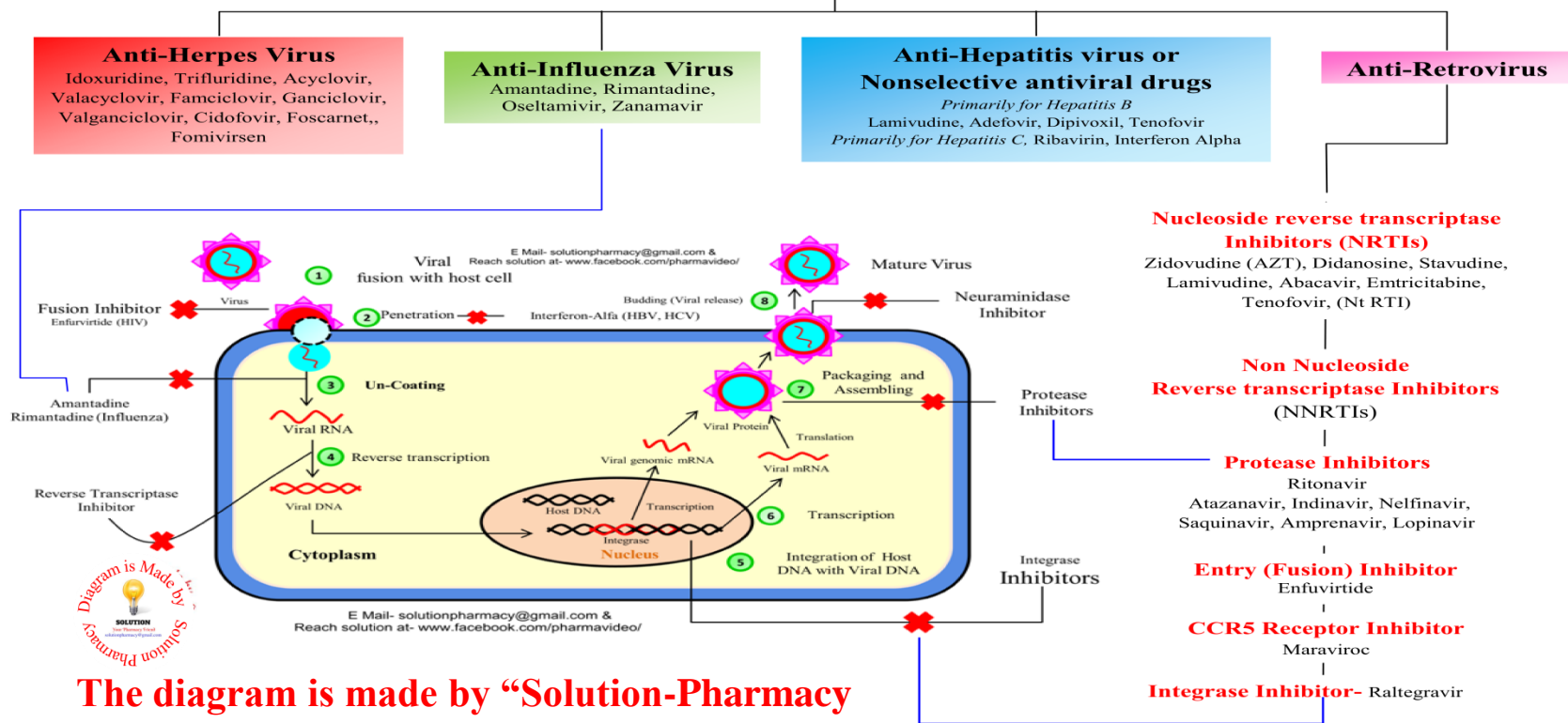
Image Credit- <https://www.cdc.gov/zika/images/symptoms/symptoms.jpg>



The diagram is made by "Solution-Pharmacy"

ANTIVIRAL DRUG

Classification and Mechanism of Action



Monsoon Born Disease – Examples with their respective symptoms

Gastroenteritis:- Almost all monsoon disease cause stomach pain. Gastroenteritis means inflammation of gastrointestinal part. The symptoms of gastroenteritis and food poisoning are very much similar with those generated by water born disease. The general symptoms of gastroenteritis are related to stomach cramps, nausea, vomiting or diarrhea. Fever can also occur with weakness and fatigue. Eating contaminated leafy vegetable and water is the main cause. In many case water loss is too high via vomiting and diarrhea. It is very important to intake pure water to keep water balance inside body. Special diet which is easy in digestion should be consumed like- rice, curds, fruits such as banana, apple. Coconut water is very good to maintain the Hydration and to keep the body healthy. ORS is generally recommended. Course of treatment is mainly to prevent dehydration, control fever. Antibiotics are prescribed after evaluation of the condition of the patient. Antiprotozoal can also be prescribed accordingly. We have mentioned the mechanism of action antibacterial.

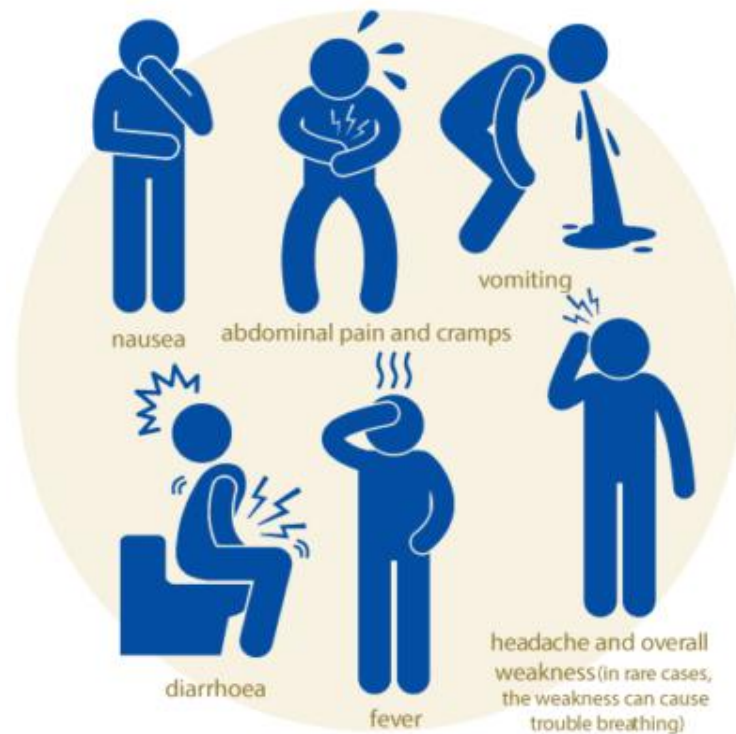


Image Credit- <https://koinoniahomes.org/gastroenteritis-stomach-flu/>

Monsoon Born Disease – Examples with their respective symptoms

Jaundice- Jaundice is due to improper functioning of liver, and this liver infection increase in the time of monsoon. The symptoms of jaundice is very simple to diagnose because the colour of skin, nails, eyes changed into yellow due to hyperbilirubinemia. Body fluids may also be yellow so as the urine colour convert into yellow to dark yellow. The color of the skin and sclerae varies depending on levels of bilirubin. Jaundice is a yellow discoloration of the skin, mucous membranes, and the whites of the eyes caused by increased amounts of bilirubin in the blood. Bilirubin is a by-product of the daily natural breakdown and destruction of red blood cells in the body. The hemoglobin molecule that is released into the blood by this process is split, with the heme portion undergoing a chemical conversion to bilirubin. The common symptoms apart from skin and urine colour are – loss of appetite, headache, vomiting, itching, abdominal pain and weakness. Taking food rich in glucose support the patients to recover.

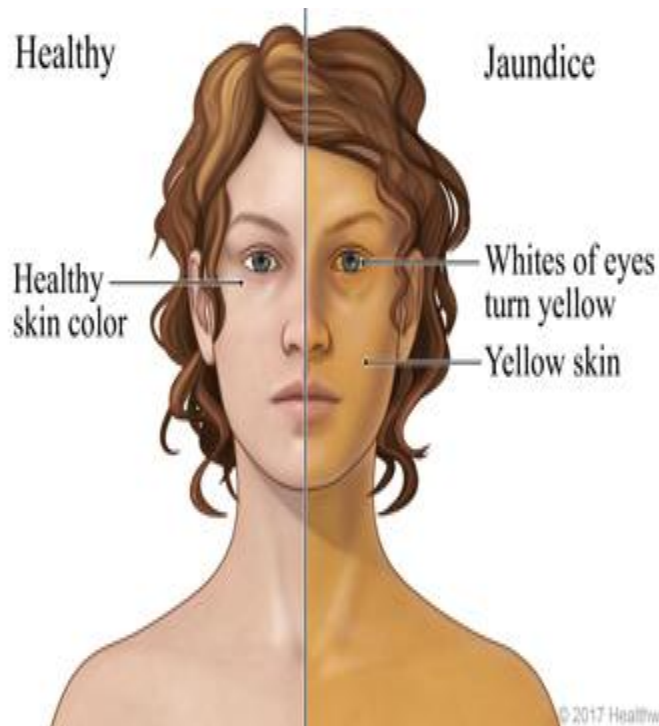
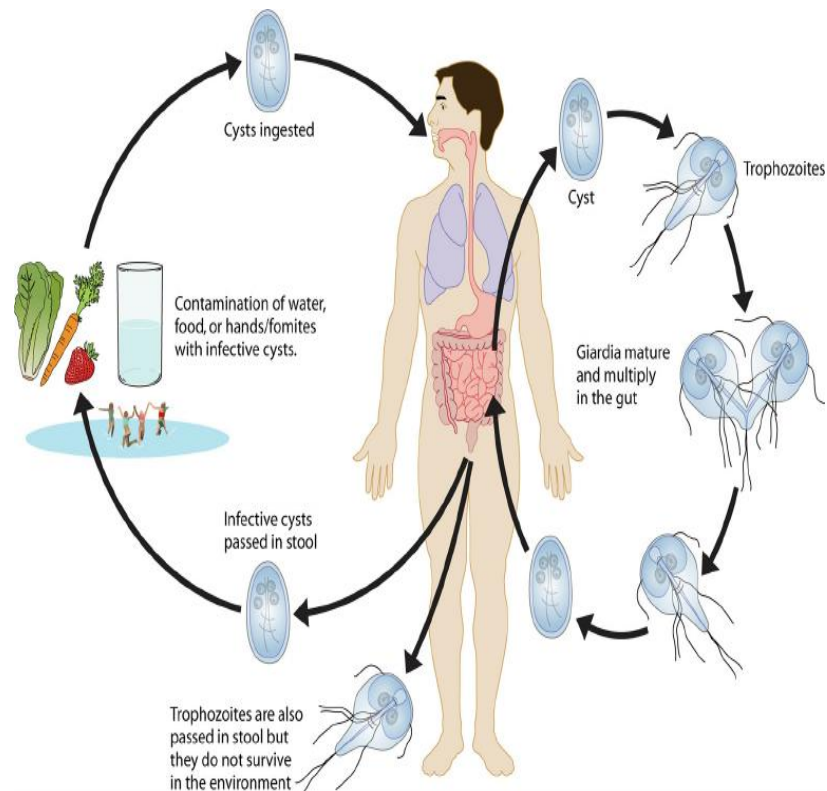


Image Credit- <https://myhealth.alberta.ca/Health/aftercareinformation/pages/conditions.aspx?hwid=zc1011>

Monsoon Born Disease – Examples with their respective symptoms

Giardia and *Cryptosporidium* are microscopic parasites or cysts that can be found in water. *Giardia* causes an intestinal illness called giardiasis or “beaver fever.”, *Giardia* infection has become recognized as one of the most common causes of waterborne disease (found in both drinking and recreational water) in humans. Drinking water sources become contaminated when faeces containing the parasites are deposited or flushed into water. If treatment is inadequate, drinking water may contain sufficient numbers of parasites to cause illness. Other sources include direct exposure to the faeces of infected humans and animals, eating contaminated food, and accidental ingestion of contaminated recreational water. Giardiasis disease can also be spread through a personal contact who is already being infected. Children can also be at high risk to fall prey to this disease. They can likely to encounter feces when they wear diapers or potty training.



Monsoon Born Disease – Prevention cum Treatment

We have seen a detailed review of few common waterborne diseases that can be caused due to drinking contaminated water and eating spoiled or infected food which ultimately lead to poisoning, cholera, dysentery, typhoid fever and etc. As all of these diseases are caused due to the consumption of contaminated food and water so their prevention is in our hand only. Waterborne diseases are also transmitted through different ways and these include the practice of defecation in the open, eating uncovered food and drinking contaminated water.

We can practice some common household ways to avoid waterborne diseases and these are mentioned below:

1. Drink only filtered water
2. Wash your hands before eating
3. Always eat cooked foods
4. Use proper toilets for defecation
5. Never consume food from roadside vendor
6. Never defecate in the open
7. Eat fresh and warm food made only at home
8. Take care of your pets in home and maintain their hygiene too.



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