

## 5 – WHEN EQUILIBRIUM DISRUPTS

### I. CONTAGIOUS DISEASES (Transmitting diseases, caused by micro organisms)

	Mode of spread	Disease	Causative (Germ/Pathogen)	Symptoms	Defence
1	Food & water (through house fly)	Dysentery	PROTOZOA [Entamoeba histolytica]	Abdominal pain, diarrhoea (defaecation), blood & mucus in stool	Flies control, solution treatment (Eg.-ORS solution)
2		Cholera	BACTERIA [Vibrio cholerae]	Vomiting, diarrhoea, 'rice water like' stool, muscle cramps	
3		Typhoid	BACTERIA [Salmonella typhi]	Severe fever & headache, abdominal pain, constipation (മലബന്ധം)	
4	Food & water (rat urine)	Rat fever	BACTERIA [Leptospira icterohaemorrhagiae]	Fever & headache, muscle pain, redness in eyes, difficulty to look at day light, bleeding in internal organs	Rats control, waste disposal
5	Air	Tuberculosis	BACTERIA [Mycobacterium tuberculosis]	Fever, continuous dry cough, chest pain, blood in sputum (കഫം), difficulty to breath, loss of body weight	BCG vaccination
6		Chickenpox	VIRUS [Varicella-zoster / Herpes virus]	Fever & headache, red rashes appear which become blisters	
7		Swine flu	VIRUS [H <sub>1</sub> N <sub>1</sub> virus/ Influenza-A virus]	Fever with chill, cough, throat pain, chest pain, difficulty to breath	
8		Avian flu	VIRUS [H <sub>5</sub> N <sub>1</sub> virus/ Influenza-A virus]	Fever, cough, throat pain, common cold, difficulty to breath	
9	Mosquitos Culex Anophiles	Filariasis	Filarial worm	Fever with chill, extreme swelling of affected organs due to the obstruction of lymph flow (by the growth of filarial worms)	Mosquitos control
10		Malaria	PROTOZOA [Plasmodium vivax/ P. malariae/ P. falciparum]	Repeated severe fever with chill, severe headache, burning sensation all over the body	
11		Chikungunya	VIRUS [Alpha virus]	Severe fever with chill & headache, back pain, subsequent joint inflammation (വീക്കം)	
12		Dengue fever	VIRUS [Dengue virus] [Flavi virus]	Sudden severe fever, pain in joints and muscles, red rashes on chest and face, blood platelets decreases far below the normal count, bleeding in various parts.	
13		Japanis encephalitis	VIRUS [Flavi virus]	Severe headache, nausea (ഓക്കാനം) and vomiting, can't bend the neck, mental problems	
14	Soil	Athlet's foot	FUNGUS		
15	Contact	Ring worm	FUNGUS	Circular rashes	
16	Bite of rabid animals	Rabies (Hydrophobia)	VIRUS Rabies virus [Rhabdo virus]	Severe fever, headache and body pain, mental disorder with attacking nature, paralysis of lower jaw and neck	Rabies vaccine

- Which are the micro organisms that cause diseases? How do they cause diseases?
  - \*VIRUS - By undertaking the genetic control of the host cell, multiply and thus destroy the cell.
  - \* FUNGUS – They release enzymes, which destroy the cells.
  - \* BACTERIA – They multiply through cell division and the toxins released by metabolism kill or disrupt the working of the cells.
  - \* PROTOZOA – Their toxins destroy the cells. Enzymes released then damage the inner lining (epithelium). Some of them destroy blood cells.

## II. BAD HABITS AND DISEASES

- \* SMOKING – Chemical substances like tar, nicotine, CO, benzopyrin etc. enter inside the body through smoking.
  - Decreases vital capacity of lungs. Bronchitis may occur. Carcinogens result in lung cancer.
  - Smoking affects the nervous system to cause nausea, mental depression, addiction to nicotine and tremor in hands. Production of adrenalin increases.
  - Increases cholesterol level and rises blood pressure. Blood flow to the toes of foot decreases due to decrease in the inner diameter of arteries. A stable compound, carboxyhaemoglobin, forms in blood and therefore the transport of respiratory gases reduces.
  - Increases the secretion of gastric glands. Increases peristalsis.
  - Passive smoking is harmful too.
- \* CONSUMPTION OF ALCOHOL – Alcohol reaches the internal environment quickly to affect the nervous system and the reflexes slow down hence, hinders neuro-muscular coordination. Lose the ability to take quick decisions in emergency. (Eg:-An emergency occurs when driving a vehicle)
  - Affect liver to cause cirrhosis and hepatitis.
  - Affect the digestive system and cause bulged stomach or intestinal inflammation. - Addiction to drinks.
- \* DRUGS - Drugs easily affect the nervous system to disrupt the rhythm of internal environment.
  - Quickly develops addiction to drugs.
  - Affect nervous system and reflexes become slow to feel fear, sedation, hallucination (മറിച്ചറിവ്), depression and anxiety.
  - Encourage aggressive behaviour and anti social activities.
  - Social isolation - Possibility of spreading HIV

## III. CANCER (The condition in which the uncontrolled multiplication of cells, to destroy other cells by consuming their nutrients)

Reasons - Carcinogens that enter through the consumption of tobacco products or pesticides, ultra violet and other radiations, some kinds of viruses etc.

## IV. GENETIC DISORDERS

Haemophilia	Sickle cell Anaemia
Excessive bleeding even from small wounds as blood does not clot, due to defective synthesis of one of the proteins that enables blood coagulation.	Oxygen transport by RBCs is affected due to their transformation into sickle shaped cells, when the level of oxygen decreases in blood. Such patients will be anaemic and weakened.

? - Deficiency of iron or some kinds of vitamins cause ----- ? (Anaemia)

? - The difference between anaemia and sickle cell anaemia ? (Anaemia is a deficiency disease caused by the deficiency of iron or some kinds of vitamins in food. Sickle cell anaemia is a genetic disease in which the red blood cells undergo sickle shape.)

## V – URINARY TRACT INFECTION (UTI)

Certain bacteria which come out along with faeces and certain fungi result urinary tract infection. The habit of low intake of water, voluntary retention of urine (മൂത്രമൊഴിക്കാതെ പിടിച്ചു നിർത്തുക), unhygienic cleaning after passing faeces etc causes UTIs.

Urinary tract infection results inflammation in the inner lining of urinary bladder and may leads to nephritis..

## VI – FACTORS INFLUENCING MENTAL HEALTH

- Health of a person has three aspects :- Physical health, Mental health and Social health.
- Good relationship among the family members, Healthy friendships, Effective communication, Nutrition, Physical health condition, Exercise, Rest, Entertainment, Satisfaction in his work etc. are factors for mental health.
- Self awareness, making good relationships, reduce mental stress, avoid bad habits and bad company, enhancing effective communication and behavior etc. keep one's mental health constant.

? - Diseases related to life style ? (Overnutrition, undernutrition, adulterate(മാതൃക കലർന്ന) food and drinks , consumption of alcohol, drugs, tobacco consumption , restlessness, lack of exercise etc.)

## VII – DISEASES AFFECTED TO DOMESTIC ANIMALS & BIRDS

Cattle disease	Foot & mouth	VIRUS	Severe fever, blisters in mouth and foot, no concern for eating.
	Anthrax	BACTERIA	Sudden fever, froths and foams from mouth , bleeding from mouth and nose
	Mastitis	BACTERIA	Udder(അകിട്) inflammation, pus at nipple, decreased milk formation.
Bird disease	Pullorum	BACTERIA	Sleepy behavior, difficulty to breath, white loose dung

## VIII – DISEASES AFFECT CROPS

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FUNGUS	Through air	Bud rot of coconut	Decay of bud, reduced coconut production
		Mahali (koleroga) in arecanut	Fall of tender arecanuts
		Quick wilt in pepperT	the parts lay under the soil become wilt
VIRUS [cure is impossible]	Through pests (Aphids)	Bunchy top of banana	Leaf bunch become clumpy , stunted growth of apex
		Mosaic in pea plant	Yello spots on leaves, growth and production ceases
		Mosaic in tapioca	Yellow or white spots on leaves, growth and production ceases
BACTERIA	Through seeds	Wilt in brinjal	Wilting of leaves, production ceases
		Blight in paddy	Changes in colour of leaf margin, wilting of leaves from its tip

For the proper growth, plants require elements like N, P, K, S, Na, Mg. Deficiency of Magnesium (essential element in chlorophyll) causes yellow colour between the veins of mature leaves. Deficiency of Potassium (essential for protein synthesis and working of stomata) causes dried brown coloured spots on leaves, yellow colour in leaves and purple colour on leaf base.