HEALTH AND ITS FAILURES

HEALTH IS STATE OF BEING GOOD ENOUGH TO FUNCTION WELL PHYSICALLY, MENTALLY AND SOCIALLY

HEALTH FAILURE MEANS DEPRIVATION OF PHYSICAL, MENTAL AND SOCIAL WELL BEING

FAILURE OF HEALTH FACTORS:

1. SURROUNDING—LIKE EARTHQUAKE AND CYCLONE OR OTHER NATURAL CALAMITIES
2. ENVIRONMENT – NO CLEAN ENVIRONMENT AND NO PEACEFUL SOCIAL ENVIRONMENT
3. FOOD ACCESSIBILITY AND PROPER NUTRITION
4. SAFETY AND SECURITY
5. EQUALITY AND SOCIAL HARMONY

Disease, Causes and Prevention

DISEASE IS DISTURBED EASE THAT MEANS WE HAVE DISCOMFORT IN OUR BODY

SYMPTOMS OF DISEASE ARE THE THINGS WE FEEL AS WRONG LIKE WE HAVE HEADACHE, OR COUGH OR LOOSE MOTION

SIGNS OF DISEASE ARE WHAT PHYSICIANS WILL LOOK FOR ON THE BASIS OF THE SYMPTOMS LIKE WE CAN HAVE RASHES, RED EYE, WEAKNESS OR DISCOMFORT IN BODY

TYPES OF DISEASE ARE

ACUTE- SHOT PERIODS OF TIME LIKE IN DAYS TO WEEK EXAMPLE COMMON COLD, FEVER, HEADACHE, LOOSE MOTION ETC

THERE ARE NO BAD EFFECTS ON HEALTH; WE DO NOT LOSE WEIGHT, SHORT OF BREATH

CHRONIC- LONG PERIODS OF TIME LIKE MONTHS TO YEARS, EXAMPLE DIABETES, CANCER, TUBERCULOSIS, AIDS ETC

THERE ARE BAD EFFECTS ON HEALTH LIKE WE MAY FEEL TIRED CAN LOSE WEIGHT, FEEL SHORT OF BREATH

CAUSES OF DISEASE:

INFECTIOUS VS NON INFECTIOUS

INFECTIOUS DISEASE CAUSED BY GERMS THROUGH

1. VIRUS
2. BACTERIA
3. PROTOZOA
4. FUNGUS

DISEASE CAUSED BY BACTERIA:

DYSENTERY, PLAGUE, DIPHTHERIA, CHOLERA, TYPHOID, PNEUMONIA, TUBERCULOSIS

DISEASE CAUSED BY VIRUS

COMMON COLD, MUMPS, MEASLES, VIRAL HEPATITIS, DENGUE FEVER, CHIKUNGUNYA, CHICKEN POX, POLIO, COVID 19, HIV AIDS

DISEASE CAUSED BY FUNGAL INFECTIONS

CANDIDIASIS, ATHLETE'S FOOT, FUNGAL SKIN RASHES

DISEASE CAUSED BY PROTOZOAN

MALARIA, AMOEBIASIS, KALA-AZAR

NON INFECTIOUS DISEASE/ NON COMMUNICABLE DISEASE

CANCER, DIABETICS, CATARACT, OSTEOPOROSIS, KIDNEY STONE

COMMUNICABLE DISEASE:

FLU, TUBERCULOSIS, CHICKEN POX, MEASLES, CORONA VIRUS, TYPHPOID, WHOOPING COUGH, EBOLA VIRUS, ZIKA VIRUS, STDS, HIV AIDS, SYPHILIS,

MEANS OF SPREAD OF DISEASE

DIRECT CONTACT: GERMS CAN ENTER IN YOUR BODY THROUGH DIRECT CONTACT

EXAMPLE: LIKE HANDSHAKING, HUGGING, KISSING, AND SEX OR THROUGH MOSQUITO, ANIMAL CONTACT

INDIRECT CONTACT: GERMS CAN ENTER IN YOUR BODY THROUGH INDIRECT CONTACT

EXAMPLE: LIKE THROUGH FOOD, WATER, AIR

FROM THE POINT OF ENTRY DIFFERENT SPECIES OF MICROBES AFFECT DIFFERENT PART OF BODY FOR EXAMPLE

1. IF THEY ENTER FROM AIR VIA NOSE THEY LIKELY TO GO TO LUNG AND CAN CAUSE TUBERCULOSIS
2. IF THEY ENTER THROUGH MOUTH THEN THEY CAN STAY IN GUT LIKE TYPHOID CAUSING BACTERIA.
3. IF THEY GO TO LIVER THEN LIKE VIRUS THEY CAN CAUSE JAUNDICE.
4. INFECTION LIKE HIV, STDS, SYPHILIS COMES TO BODY THROUGH SEXUAL ORGANS
5. MALARIA, DENGUE THROUGH MOSQUITO BITES GO TO LIVER AND THEN TO RED BLOOD CELLS AND IN JAPANESE ENCEPHALITIS OR BRAIN FEVER IT GOES TO INFECT THE BRAIN

HOW INFECTIOUS AGENT WORKS

1. ALL VIRUSES LIVE INSIDE THE HOST CELLS WHEREAS BACTERIA RARELY DO
2. VIRUSES , BACTERIA, FUNGI MULTIPLY VERY QUICKLY
3. WORMS MULTIPLY SLOWLY IN COMPARISON
4. ALL BACTERIA ARE CLOSELY RELATED TO EACH OTHER BUT NOT TO VIRUSES
5. CONSEQUENTLY DRUG WHICH BLOCK LIFE PROCESSES IN ONE MEMBER OF THE GROUP ALSO EFFECTIVE FOR OTHER MEMBERS OF THE GROUP
6. BUT THAT DRUG WON'T WORK AGAINST MICROBE BELONGING TO DIFFERENT GROUP

THAT'S WHY WHEN WE TAKE ANTIBIOTICS; THEY COMMONLY BLOCK BIOCHEMICAL PATHWAYS IMPORTANT FOR BACTERIA FOR EXAMPLE ANTIBIOTIC PENICILLIN BLOCKS THE BACTERIAL PROCESS THAT BUILD THE CELL WALL TO PROTECT THEMSELVES

HOWEVER VIRUSES DO NOT USE THESE PATHWAYS AT ALL, AND THAT IS THE REASON WHY ANTIBIOTICS DO NOT WORK AGAINST VIRAL INFECTIONS,

FOR EXAMPLE IN COMMON COLD TAKING ANTIBIOTICS DOES NOT REDUCE THE SEVERITY OR DURATION OF THE DISEASE HOWEVER IF WE ALSO GET THE BACTERIAL INFECTION ALONG WITH VIRAL COLD THEN TAKING ANTIBIOTICS WILL HELP AND ANTIBIOTICS WILL WORK ONLY AGAINST THE BACTERIAL PART OF INFECTION, NOT THE VIRAL INFECTION.

HOW HUMAN BODY RESPOND TO DISEASE

IN MOST CASES BODY'S IMMUNE SYSTEM IS ACTIVATED IN RESPONSE TO INFECTION AND

ACTIVE IMMUNE SYSTEM RECRUITS MANY CELLS TO KILL OF THE DISEASE CAUSING MICROBES

THIS RECRUITMENT PROCESS IS CALLED INFLAMMATION AND ITS LOCAL EFFECTS ARE SWELLING AND PAIN AND GENERAL EFFECTS AS FEVER

IN CASE OF HIV INFECTION VIRUS GOES TO IMMUNE SYSTEM AND DAMAGES ITS FUNCTION

DUE TO THAT BODY CAN NO LONGER FIGHT MINOR INFECTION AND CAN LED TO MAJOR DISEASE WHICH CAN BE FATAL

AND IN CASE OF CORONA VIRUS IT STARTS AFFECTING THE WEAKEST ORGAN OF THE BODY AND MAJORLY LUNGS AND LIVER AND RESTRICTS THEIR FUNCTION.

PREVENTION AND TREATMENT

TWO WAYS TO TREAT INFECTIOUS DISEASE

1. TO REDUCE THE EFFECTS OF THE DISEASE
2. TO KILL THE CAUSE OF THE DISEASE

FOR THAT WE PROVIDE TREATMENT THAT WILL REDUCE THE SYMPTOMS FOR EXAMPLE BY TAKING MEDICINES CAN BRING DOWN THE FEVER, REDUCE PAIN OR LOOSE MOTION

WE CAN ALSO TAKE BED REST SO THAT WE CAN CONSERVE ENERGY FOR HEALING

BUT THIS KIND OF SYMPTOM-DIRECTED TREATMENT WILL NOT MAKE INFECTION GO AWAY AND DISEASE WILL NOT BE CURED FOR THAT WE NEED TO KILL THE MICROBES

AS MANY MICROBIAL BIOCHEMICAL LIFE PROCESS AND PATHWAY DIFFERENT FROM US AND WE HAVE TO FIND THE DRUG THAT BLOCKS BACTERIAL SYNTHESIS PATHWAY WITHOUT AFFECTING OUR OWN AND THAT'S WHAT ANTIBIOTICS DO FOR EXAMPLE PEPTIC ULCER IN STOMACH NOW TREATABLE THROUGH ANTIBIOTICS

MAKING ANTI-VIRAL MEDICINES IS HARDER THAN MAKING ANTI BACTERIAL MEDICINES IS THAT VIRUSES HAVE FEW BIOCHEMICAL MECHANISMS OF THEIR OWN.

THEY ENTER OUR CELLS AND USE OUR MACHINERY FOR THEIR LIFE PROCESS

THIS MEANS THAT THERE ARE FEW VIRUS SPECIFIC TARGETS TO AIM AT

DESPITE THIS LIMITATION WE HAVE ANTI VIRAL DRUGS AND VACCINES LIKE FOR POLIO, HEPATITIS AND EVEN FOR HIV AIDS

PREVENTION

TO PREVENT THE DISEASE

1. TO PREVENT THE EXPOSURE TO INFECTIOUS MICROBES LIKE CLEAN DRINKING WATER AND MOSQUITO FREE REGIONS AND PUBLIC HYGIENE
2. SECONDLY TO HAVE PROPER NOURISHMENT AND FOOD FOR EACH AND EVERYONE AS HEALTHY BODY CAN FIGHT OFF INFECTIONS
3. WHEN YOU HAVE HAD DISEASE LIKE SMALL POX ONCE, THERE ARE NO CHANCE OF SUFFERING FROM IT AGAIN THAT MEANS YOU PREVENTED FROM IT

IMMUNIZATION AND VACCINATION

IMMUNIZATION

WHEN IMMUNE SYSTEM FIRST SEES AN INFECTIOUS MICROBE IT RESPOND AGAINST IT AND THEN REMEMBERS IT SPECIFICALLY SO THE NEXT TIME THAT PARTICULAR MICROBE OR ITS CLOSE RELATIVES ENTER THE BODY, THE IMMUNE SYSTEM RESPONDS WITH EVEN GREATER VIGOUR.

THIS ELIMINATES THE INFECTION EVEN MORE QUICKLY THAN THE FIRST TIME AROUND; THIS IS THE BASIS OF THE PRINCIPLE OF IMMUNISATION.

FOR EXAMPLE WHEN SMALL POX WAS EPIDEMICS ENGLISH PHYSICIAN NAMED EDWARD JENNER REALISED THAT TWO MILKMAIDS WHO HAD COWPOX DID NOT CATCH SMALLPOX EVEN DURING EPIDEMICS COWPOX IS MILD DISEASE AND JENNER DELIBERATELY GAVE COWPOX TO PEOPLE AND FOUND THAT THEY WERE RESISTANT TO SMALLPOX.

AS SMALLPOX VIRUS IS CLOSELY RELATED TO COWPOX

AND FROM THAT VACCINATION HAS COME TO OUR USAGE

THROUGH VACCINATION AS A GENERAL PRINCIPLE WE CAN FOOL THE IMMUNE SYSTEM INTO DEVELOPING MEMORY FOR A PARTICULAR INFECTION BY PUTTING SOMETHING THAT MIMICS THE MICROBE WE WANT VACCINATE AGAINST INTO THE BODY.

THIS DOES NOT ACTUALLY CAUSE THE DISEASE BUT THIS WOULD PREVENT ANY SUBSEQUENT EXPOSURE TO THE INFECTING MICROBE FROM TURNING INTO ACTUAL DISEASE.

THERE ARE VACCINES AGAINST TETANUS, DIPHTHERIA, WHOOPING COUGH, MEASLES, POLIO, HEPATITIS AND MANY OTHERS

EVEN IN INDIA MANY CHILDREN ALREADY IMMUNE TO HEPATITIS A BY THE TIME THEY ARE FIVE YEARS AS THEY WERE EXPOSED TO VIRUS THROUGH WATER